**Innovation and the cultural economy**

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## 1. Introduction

Innovation is generally regarded as a universal and positive element of economic life. However, it is an apparent paradox that not all innovations are good, nor are they necessarily an improvement on those which they replace. We have all experienced the 'novelty' gadget that is quickly forgotten, or the new special effects-heavy, multi-million dollars, blockbuster film that fails at the box office. We cannot dismiss this as the fickleness of taste, there are a number of well-documented examples of the inferior technology 'winning': the classic case in video recording technology is the VHS format replacing the technically superior Betamax (Cusumano, Mylonadis et al. 1992). Put simply, the lesson is that neither technical nor artistic superiority consistently bear a simple or direct relationship with economic or cultural success. The important point is that the value of innovation is not universal but its value is established in context. This applies more generally, but in the field of the cultural economy the situation is more critical than in other fields. In the cultural economy the 'value' is the product or practice. Moreover, social or cultural values change, serving to 're-value' an object or practice, at any stage in the production process between ideation and use. In this chapter I explore how such instability and change in the 'value' of innovations may need to be re-positioned at the centre of our analyses; challenging what we find in mainstream analyses of innovation where such rouge characteristics are regarded as 'exceptional' or peripheral. I conclude that insights from innovation processes in the cultural economy should prompt us to re-frame our analyses not only of the cultural economy but of the rest of the economy as well.

The first question I pose concerns the assumption that all industries operate essentially in the same way with regard to the market with regards to allocation and price setting. Is innovation any different in the cultural economy, or to any other industries? If so, why and how? If the cultural economy was 'different' this characteristic would potentially be the causal variable. The normative perspective is that the cultural economy is different: this paper challenges this. Paradoxically, I will argue that innovation is no different in the cultural economy. However, more disruptively, I will argue that it is our conceptualisation of innovation, based upon mass production industries is what leads us to view the industries of the cultural economy as 'different'. The problem lies in how we conceive of knowledge and innovation.

The foundational intervention is to conceptualise knowledge as relational: that it shapes, and is shaped by, context and agency. The values (cultural and economic) of an innovative product or practice are only temporarily fixed in each interaction. Exploring innovation in the cultural economy discloses many problematic assumptions about innovation in the normative literature; sociologists and economic geographers have begun to query these norms. These assumptions may have been appropriate to a particular period of mass production of commodities, however it can be argued the assumptions no longer hold. Rather than being

assumptions, they may have to be moved analytically centre stage: to become 'what is to be explained'.

In sum, I want to reverse normative arguments on the basis of three challenger claims. First, I will argue that our expectations of innovation have been limited by a specific experience of industrial transformation of mass production and a particular division of labour. I will argue further that the cultural economy should be the 'new normal'. Second, I also argue against generalisation, recognising that all industries have empirical differences, both within and between what we term 'industries'. In short, the situated nature of innovation is critical to our understanding of it. Finally, I am led to ask fundamental questions about what knowledge is. Accordingly, this chapter is divided into three parts. First, I review normative innovation practices and their relationship to the philosophy of science. Second, I argue that due to normative assumptions about knowledge, the focus of analysis and empirical investigation is on the transfer of knowledge. The third part proposes that a more helpful focus: namely the translation of knowledge, one that expresses the generative, relational, and the situated nature of knowledge making. The normative model of the 'leaky pipe' analogy of knowledge-transfer where the very formation is concerned with incremental change (Godin 2006). By contrast, I want to offer the notion of 'making in translation' is conceived of as a constructive and a constitutive practice: one that is focused on radical change.

## 2. Normal Innovation, normal science

### *a. Controlled innovation*

Innovation is a deceptively simple term; we commonly view it as a technique or an outcome (but less commonly do we note that it is not absolute: such that something is only innovative 'in relation to' something else) to produce something 'new'. The model that we often have in mind is to 'build a better mousetrap', an incremental improvement to an established need. The problem and the parameters are assumed or fixed, an incremental iteration is what is defined as innovation. Our common understanding of innovation comes from science, where we term a discovery as a 'natural fact' what is commonly conceived of as if a pebble on a beach, simply waiting to be discovered, or picked up (its meaning is intrinsic and not related to time or place, let along social and cultural settings). Inside the laboratory discovery is a codified and ordered process is followed - insulated from the social world - that is tried and tested to confirm or deny 'newness'. Innovation, discovery and innovation, or newness, are profoundly socially, culturally and organisationally embedded. However, in normal science, or normal innovation, we 'bracket out' these 'contextual' factors. This strategy does have utility when wider social and economic processes are stable. However in periods of social and economic transformation their explanatory powers are weakened.

The paradox here is between the model (philosophy) of science and the practice of 'normal science', that is the science that can only produce incremental and not revolutionary innovation. Such a (normative) process relies upon a stable value system of both facts and interpretation. We know that the 'value' of an innovation is not always stable. The instability - or indeterminacy - is clearest in science when one moves away from the strictly applied, and from the confines of the laboratory: 'blue skies research' is knowledge that does not have a ready application, but at some point it may do. Even in normal manufacture a product innovation may be 'new', but may not find a market nor use. As we will note below, this relates to a major question in the philosophy of science and how revolutionary it is, or is not. There are other ways to catch mice; moreover, we might change our perspective to see mice as the solution, not the problem. A revolutionary innovation may do away with the very need for a mousetrap.

Thus, 'normal' innovation is both a method that may be limiting, and one that is - or aspires to be - a-social, or a-contextual. Both aspects are problematic for anything other than incremental change (which we generally might not consider to be 'real innovation') within fixed and non-variable environments. What makes an innovation 'different', or 'interesting' , let alone useful or important, is only disclosed by its social and cultural value: its relational value. What is innovative today, may be normal and uninteresting tomorrow; what is 'world changing' for one group of people, or in a particular place, may be uninteresting in another. Normal science, that is the standard model of science that we are familiar with, is based upon incremental change. It is effective in contexts where a paradigm (in this case a market, set of values and technology) is fixed and limited. Incrementalism is the characteristic of 'mature' products and the middle of their life cycle (i.e. when innovation is at a low point)(Balland, De Vaan et al. 2012).

It was Kuhn (1962), a prominent philosopher of science, who contrasted notions of normal and revolutionary science. Normal science is path-dependent and means that scientists don't have to think about the big questions of meaning and knowledge as long as they follow the small rules of the scientific method. Kuhn pointed out that the logical flaw in such an incremental method to produce 'true' innovations. In much of the work on the sociology of scientific knowledge since Kuhn, fundamental questions of logic, and of meaning now undermine the normative scientific method as any adequate account of scientific practice. A number of economic geographers and sociologists have sought to challenge these assumptions (Amin and Cohendet 2003, Ibert 2007), but little of this insight has found its way into normative analyses of innovation.

*b. Innovation in the wild*

The cultural economy is comprised of a sub-section of all production, and normally further constrained in definition to be identified as a particular group of industries that have as their output 'cultural products. It seeks to point to a wider cultural economy defined by processes as well as output, or input. Recent practice has been to use the notion of the cultural economy to indicate this diversity of product, process or social context. Traditional industrial classifications are composed of taxonomies of final product, and not always process, can be limiting. Hence, the term cultural or creative economy is used to capture this more holistic view; one that encompasses the whole production system from ideation, production and distribution to consumption and archiving. This is usually referred to as the cultural economy ecosystem (Pratt 1997)

These definitions and conceptualisations have been developed to capture the actually existing process of cultural production, something that is neglected by normative taxonomies and analyses that only frame 'cultural occupations', or final producers of cultural products. In the example of film making this would be like: a. only considering the actors and director but excluding the 'below the line' technical talent: the huge list of names we see in the credits of a film; and b. only considering film production companies (and ignoring the finance and administration, the special effects, the distribution, sales and advertising, etc.). Quite literally much of the innovation 'falls between the cracks' of normative conceptualisations. This contrasts with the cultural economy ecosystem conceptualisation which holds open the fact that there is considerable empirical variation within the industries that comprise the cultural economy. Put simply, film is empirically different to theatre, and to fine art; however, it shares some important organisational characteristics, risk profile, and market structures.

The contrast of the cultural economy with the normative (manufacturing) economy is important if we are to appreciate that concepts of innovation are built on the assumptions, and empirical regularities, of the normative economy. The linear, atomistic and truncated production process that echoes a Fordist production line is but one type of production and a particular innovation

system has been developed to satisfy its characteristics (marginal improvements in technology, different product styling and decorative effects). However, cultural production is better characterised through the exploration of its ecosystem (a more comparatively variegated and heterogeneous field). Moreover, as an organisational system cultural production tends to a 'missing middle' form: there tend to be a small number of very large companies, and many micro-companies and freelancers. Compared to the normative pyramid structure of much of the economy, the cultural economy has a lack of middle sized companies. In addition the micro-enterprises, which dominate the sector add a distinct organisation element, work on the basis of project based activities, where a project, and a company, may exist for only 6 months (Pratt 2007); at which point the company may be disbanded, and recombined into another company/project with others.

Generally, the cultural economy is organised to solve the challenges go working with an unstable notion of 'value', both economic and cultural. Values change faster than new product innovation can keep pace: literally with fashion seasons, or the charts. Accordingly, product development cycles are very short, and product life can be equally brief. As such the market characteristics of these industries are a. that they are very risky (that is there is a high failure rate, and uncertainty of what a success will be), b. that there is a 'winner takes all' structure, the product that is a success can achieve monopoly profits. What may appear to be peculiar organisational forms and practices from a normative perspective are in fact innovative responses to particular conditions.

Likewise, the field of regulation is intrinsic to the form of the economy. Regulators are concerned with both content and competition: censorship and monopolies. There is commonly a complex relationship between these. Historically, state ownership has been a dominant form. In the UK, as with many states, regulatory changes have changed the organisation of the cultural economy. For example the shift from in-house, fully integrated, production of programmes, to the BBC being mainly a 'publisher', has led to the emergence of fragmented and horizontal organisational structure where risks are outsourced from 'publisher' to 'producer' (Pratt and Gornostaeva 2009). Other regulation can affect the structure of the industry in different ways. For example, the rules in Formula 1 racing are changed annually to destabilise technologies and team structures; in effect to increase economic risk, and generate innovation. So, as with Formula One racing, innovation is always judged in relation to a set of rules, regulations or structures: it is not simply to go faster, but to win. Regulation literally constructs and shapes the market and defines the terms of competition and value (Pinch, Henry et al. 2003).

Finally, there are two further ways in which the cultural economy contrasts with normative expectations of industrial production which are linear and uni-directional. This is well illustrated by the case of advertising. Advertising - itself a member of the cultural economy - is deployed in all areas of manufacture to not just inform the market of a product's existence, but to create a demand for it. Simply, there was no expressed need previously: advertising manufactures demand. A well-documented example is that of the development of the personal music player, the first iteration of which was Sony's Walkman (Du Gay 1997), itself a development of the transistor radio, but this time personalised. It is not only manufacture that works in this way, artists have agents and galleries who perform the same task with a nascent 'star' (White and White 1993). Interviews and background briefings provide the interpretive context, and create a 'buzz' and a desire for the art.

This process of non-linearity, multi-directionality, and feedback, has been necessarily taken to new levels by the cultural economy (Pratt and Jeffcutt 2009). The marketing of music is but one example. The organisational form of the 'charts' that not only signals availability, but 'what other people are buying', and equates that with a social, cultural and economic value. People purchase the new recording, or see the new film, either sight unseen, or on the basis of information that constructs its value (for example, advertising: the paid form; news reports a

non-paid form of value construction). In the cultural economy demand has to be created, to drive demand for an existing supply of goods that the market did not know it needed.

The conditions of a highly regulated mass production system create certain situated values on which territory competition is fought out. In turn, these shape the 'innovation process', and are valued in terms of their role in competition. To reflect back to arguments about the product cycle, these are all efforts to avoid the high risk situation of creating a new 'class of products' for which demand is unknowable and unknown. The work involved is often one of convincing consumers that the old product is no longer innovative, and that the new one is; moreover, that they should replace the old with the new (even though it is still functional) is risky and expensive. Hence, we can see lots of reasons why in manufacture there is sometimes an inbuilt (anti)-innovation.

As many authors have pointed out we are currently experiencing a wider 'culturalisation' of the economy (Lash and Urry 1993). What this means is that the processes that are familiar throughout the cultural industries increasingly shape more 'utilitarian' products like a laptop or a toaster. Market differentiation is produced by the 'valuing' of technologies (which may or may not 'really, make a difference), or simply design (it looks good; a judgement that is of course cultural and relational) (Lash and Lury 2007). Perhaps the best example is car design in the late 1950s with the sculpting of bodywork that signified that year's product, and hence encouraged product turnover (even without the built in obsolescence which was also notorious). Or, today, the sales of computers, and the role of companies such as Apple whose sales pitch is based on the design characteristics rather than 'raw processing power'. Of course, 'raw processing power' is - like with engine specifications in cars - a relational term, that appears factual: bigger is better. It all depends on the use and the relationship between other components and software. Whilst one may seek to dismiss the 'cultural clothing' of the product, if it is that value which is the differentiator between two products that the relatively small cultural value will translate into a big economic value. In this case a true winner takes all: the final differentiation is sale or no sale.

To summarise thus far. The process of creation has been black boxed and isolated. Normative processes are used to create change; but overwhelmingly these are targeted to incremental change. It is assumed that the intrinsic value of the product will win a market when it leaves the lab. Even 'alternatives' referred to as open innovation which appear to break down the walls of the 'black box' of innovation in fact retain all of the normative characteristics of standard innovation, the openness is a facet of network configuration, not of logic, nor the conception of knowledge (Trott and Hartmann 2009).

By contrast, as we have seen, particularly in the cultural field, but increasingly (and less acknowledged) in the wider product field, the relational value, and the cultural sign, is a critical generator of 'value' (not all technical). Even when the apparent proportion of 'cultural value' in a product is small, the market impact may be total. Hence, we need to look more carefully at relational value construction. Clearly, this is front and centre of any consideration of the cultural economy, but one that applies to all industries. In a previous period, the weighted balance was to a 'locked in' intrinsic value, but the unbundling of this value in the current period has made all industries more like the conditions that we observe in the cultural industries. The problem is that the model we have for understanding innovation is based on a rather limited version of practice in manufacture that privileges technology and reduces market and knowledge to givens. (for example, neo-classical models). What we need is a model that positions these issues centrally, not peripherally.

**3. Transfer**

In the normative conception of innovation, whether in the laboratory, or the studio, by an artist or the practitioner generates the product as self-formed and self -referential object. Knowledge

is produced as a product and is fixed at creation (the 'Eureka!' moment). The process of knowledge transfer is viewed as a separate process, albeit one beset by many barriers, usually expressed as broken linkages or leaky pipelines hindering the passage to the audience or consumer. The process is linear, and non-reversible, the challenge is defined as that which will overcome the obstacles in the way of even diffusion: from high concentration to low, from supply to demand. The dominant assumption is of an un-differentiated audience, who all demand, or value an innovation in the same way: precisely not the characteristics of a cultural audience.

These conditions may apply more or less to all industrial production, but in the case of industries being transformed not only by new production processes, but also by the relationship of production to society the process is more: for example, mass customisation, active consumption, and 'pro-sumption' (these are all terms that refer to the dissolution of traditional boundaries, and the direction of process, between producers and consumers) (Tapscott and Williams 2006). The cultural economy represents a leading edge of such practices, where the value or content of knowledge varies as well as its modes of communication and transport. The current organisational forms of the cultural economy have evolved as a response to such conditions: market or audience relations, as well as fluid value systems. However, the a-social and a-organisational perspective we encounter in many studies are the main reasons why normative innovation theory offers less insight when applied to the cultural economy. I will highlight three dimensions in which we need to modify our perspectives: a. spatial, b. organisation and scale, and c. knowledge.

*a. spatial*

The normative literature leaves the technical aspects of innovation to philosophers and scientists, leaving it in a black box of innovation (Latour 2005), the only aspect of the process that is open to manipulation and interpretation is the movement of knowledge: that is what is to be explained. The models of knowledge transfer are rooted in physical analogy of diffusion models; a physical process of transfer from higher to lower concentrations, based on a tendency to entropy in closed energy systems (Easton 1992). In such a conception the knowledge object, is separate from the transport mechanism.

It is this latter issue - that transport mechanism - which is also assumed in traditional economic theory as the invisible hand of the market. However, this issue and its failings has fascinated geographers concerned with the spatial and technological 'friction' of distance; literally the structure and economy of transport systems that create an irregular 'cost surface' (Smith 1981). In these models price alone is used as an analogue of value, and economic equilibrium is hypothesised as the mechanism of transfer of 'goods', albeit modified by transport issues. Interestingly, debates about digitisation and the hypothesised reduction of transport costs to zero, have led some to claim the irrelevance of geography to knowledge transfer: the death of distance (Cairncross 1998), a claim that was not sustained by evidence (Pratt 2000).

Subsequently, literature on industrial location that has attended to the various unrealistic, or unfeasible, assumptions in both the economic theories of location and the interactions of industrial production. Research has indicated the role of the social organisation of the production process over space, where transfer costs may be internalised and when new technologies change transport costs. At other periods innovation in the production process and/or social organisation, or changes in regulation, may lead to externalisation of not only transportation, but also research and development. However, in normative approaches these are all externalities. We should question a model's utility when the residuals dominate the equation.

*b. Organisation and scale*

The analysis of the role of organisation is undermined in some studies by their neo-classical economy assumptions in which organisation is not a variable. However, institutional approaches to both economics and sociology have highlighted organisation as the complementary other side of the coin to transportation. Within the multi-plant and multi-function production process there may be economies of scale and useful 'waste' (Grabher 1993). That is that complex processes may be costed and audited over a longer time period, or over multiple sites and profit centres. Some slack or 'redundancy' can offer useful opportunities for residence and sustainability, and the maintenance of economies of scale (which others may be lost in more 'efficient' organisations. Put concretely, the return on an investment is neither intrinsic, nor separate from, the organisation and governance regime it is embedded in it. An investment will, if audited at the end of month one be in deficit; after year ten it may be in profit. Likewise, a research facility may have a number of failed outcomes, before a success. The principle is the same, the context or setting can frame profitability, not the process. If audited individually it might never, if governed by an over enthusiastic accountant, achieve the innovative gains. Furthermore, a small organisation devoting only a minimal resource budget of its effort to innovation may not achieve the economies of scale that a large one may do.

The transitions in the history of economic organisations that have occurred between large multifaceted facilities where economies of scale are maximised has often been contrasted with the diversity of outcomes and flexibility, so called economies of scope that is a common outcome of network enterprises (Lundvall 1992). Thus the location, distribution and diffusion -the transport- of knowledge is not independent of the social organisation. In short innovation is not reducible to space, technology, or indeed social organisation: it is a hybrid.

*c. Knowledge*

A variant on the organisational aspects to innovation is to take account of the institutional embedded nature of knowledge, whilst still retaining an atomistic notion of knowledge and its creation: to search for the 'essence', or most 'intense' manifestation in the organisation or place; or occupation of, innovation activity (measured by added economic value). Conceptualising this is a very small a step away from discredited notion of 'pure' innovation, or creativity, that is commonly associated with artistic or scientific genius (Pratt 2008). In this literature, even the nominally institutional approach to innovation is undercut by the assumption of single or finite 'source' of innovation. A parallel argument has been applied to the cultural economy with respect to creativity. In part inspired by Richard Florida's (2002) analyses of the 'super-creative' occupations in the creative class (which in his case apply particularly to 'creative jobs' in 'non-creative industries'). It has been argued that a measure of 'creative intensity' that produces most added value (not simply patents, nor non-profit earning outputs) if identified it could also be used to target potential intervention (Bakhshi, Freeman et al. 2012).

Where immaterial products are concerned, legal codification seeks to domesticate products 'as if' they were objects that had eternal and unchanging parameters, regardless of context: for example, a patent. In traditional analyses patents are used as a proxy of innovation (Acs, Anselin et al. 2002). This is problematic: a patent is only a potential innovation; untested nor verified in its own terms, let along within the context of a particular market or audience. There is no guarantee, in fact it is statistically unlikely, that it will be successful; only a minute proportion of patents get made into products, and fewer still successful products. A patent, or an idea, is merely one part of an extended innovation system that is required to validate, and value, an object and its relations to the world, let alone getting the 'world' to appreciate it.

Albeit expressed in slightly different terms, this conception is underpinned by the same model of the innovation system; a variant in organisation, transport and transfer mechanisms. It is still a network in which nodes, or what flows, is assumed, and connection and volume of

interaction that is assumed as causal. This is an inherent problem of traditional social network analyses (Murdoch 1997). The focus is still on the velocity and volume of flows, and the technical or rational efficient of networks to maximise the transfer in an ideal space. What is overlooked are the means by which an idea is translated into practice, and the means by which it is 'valued', and 'revalued' at each interaction. As hinted above, this dimension is particularly relevant to accounting for the cultural economy: a (truly) relational model.

I want to argue that despite some theoretical progress and some more nuanced empirical work two points remain unanswered: first, how is knowledge created; and second, how to divide up good from bad knowledge? It is interesting that these are considered as a priori assumptions, not worthy of analysis, or self-evident fact, in neo-classical analyses. On the contrary, I would argue that they are important and relevant to our understanding of innovation. On the second point, in the experimental process if the outcome is a binary- good or bad- this will give us one definitive answer. But, as we have already argued, even good (or indeed bad) outcomes can be re-valued outside the lab, or when the artist enters society. We are still left with the fundamental deceit at the core of science that Kuhn identified: 'normal science' will not, can cannot, produce revolutionary, paradigm changing, events. In other words, normal science is additive and deductive; but in the end it is limited by its own caution, it is not inductive, it cannot make a leap into the unknown (deductive processes are based on logical deduction from two known facts to a composite, or additive, fact). A variant of this problem in a more practical manner is the theory of innovation that suggests that the 'product lifecycle' is akin to separate paradigms, eventually after the new idea makes a market, it matures and no further innovation takes place; it is replaced by a new paradigm (in classical analysis, this is 'caused' by substituting a new technology. The philosophical 'trick' is that a new product provides the new paradigm, without explaining where the new product/idea came from.

In summary, much of our conception of knowledge creation is about knowledge transfer. Knowledge is 'black boxed', or wrapped as if in a parcel: the question of how the package was unpacked and how the contents were (re-)interpreted are not addressed; simply that it moved from A to B. Moreover, the 'value of an innovation is assumed to be fixed and indexed by technological and economic reductivism, and atomism. The process of knowledge creation is displaced to the philosophy of science and practice thus follows the binary rules and protocols of the laboratory; knowledge and meaning is 'assumed away' or simply ignored for the purposes of economic, or spatial and social analyses. However, these assumptions, and this philosophy, can, and must be questioned. At very least the logic based on the normative mass manufacture and its innovation processes. In the modern cultural economy, these assumptions are now variables.

## 4. Translation

In the previous section I have criticised the exclusive focus on transfer mechanisms; the other side of the innovation coin is the 'what is transferred': knowledge and 'newness'/innovation. As I have also noted in the first section of the chapter the science model codifies the production of knowledge as a logical, codified and technical process. It is created in the laboratory; the challenge is to migrate it to a user. Normative models have a particular conception of knowledge. In the process of reconstructing the understanding of innovation a potential line of critique emerges from studies of craft processes, and subtler innovation that they produce. The scientific method, and the laboratory, produce a singular output. The attention to craft skill highlights the tension between learning, and doing; or between tacit and codified knowledge.

Normative concepts of innovation solely concern codified knowledge, in words and numbers, legal terms, or physical objects. The notion of tacit knowledge opens up a realm of non-codified, practical knowledge, and the varied process of learning and doing (Polanyi 1957). Tacit knowledge is always and already embodied and embedded in place and organisations;

whereas codified knowledge can be transferred (more like the 'ideal' knowledge discussed above). Codified knowledge is often seen as 'soft' knowledge, both in the boundary less indefinability, but also in value judgements (and accordingly not judged as valuable as real science). A common interpretation is that this two forms of knowledge exist in parallel realms, another that tacit knowledge - which applies to a limited class of knowledge - can be quantified and hence reduced to a common score. This produces an additive notion of knowledge, and it obscures the 'valuation' and its reductivism via quantification.

A similar problem underpins network analyses, even those that stress the 'relational' dimension. Although more informative, embedded and nuanced, they still fall foul of the basic assumption of network analysis that is to measure flows, not their (co-)creation. The relative value of knowledge is dictated by the network structure, one that is more or less efficient at diffusion (Bathelt and Gluckler 2011). They do not fully question the additive notion of knowledge(s), nor the implicit accumulation and rational assumptions of normative network analyses.

By contrast, translation theories of innovation use a different notion of knowledge, a generative one. In such an approach two knowledge inputs do not simply add or subtract from one another, they produce contestation which may lead to the revaluation of both inputs, and/or, a completely novel resolution. Thus challenging the binary between the knowledge and the transfer which is the research object of traditional analyses (and which 'locks up' value questions). Translation analyses begin with a different ontology, they view the whole process as actors, things and networks all co-defining one another. As the name suggests, the literature that underpins this approach is Actor Network Theory (ANT). It is especially relevant that ANT has its roots in the Sociology of Scientific Knowledge (SSK), that is the sociology of experimentation and 'knowledge making'. A seminal example is based on the re-interpretation of laboratory practice ( Latour and Woolgar 1986), although recent work has extended the process of 'valuation' and 'justification' practices into what are cognate areas for those interested in the economy, on financial dealing and markets (Callon 1998, Knorr-Cetina and Preda 2006).

Generative notions of knowledge explore how knowledge is created via interaction and justificatory disputation, not by simple addition. A good example is the way that a play or music performance is developed in front of an audience via the feedback and the live experience of the performance. The technical practice is modified via not just the interpretive actions of director and performer, but by their assessment of audience reaction, and their own aspirations and values. This is but one, or a multiple example, of interactive and heuristic feedback. Then comes the process of problem solving, how and which issues to resolve (Pratt 2015). We can immediately see the weakness of a transfer model of the practice in the example of how the composer's idea of the music (based on their education, training, and interaction with previous musicians and audiences) is transcribed as notes on a page (which is an interpretation of the 'music' in her head). Moreover, the performers must interpret these notes, we know that there are many ways to perform the same eight notes (even guided by musical notation); moreover, this still may not accord with what the composed 'heard' in their head. Clearly, the crucial moments are in the translation of ideas from the composer to manuscript, and by the ensemble of musicians and conductors. This actor-network, not the laboratory, or composition studio, is a vital part of 'making' music.

The importance of this social element of knowledge making, and the rejection of a dualistic ontologies (or making and transfer, and between codified and tacit) opens up a new realm for our studies. Critically, the role of embedding is also different from normative analyses, the context is now seen as co-constitutional. Commonly, 'communities of practice' (Wenger 1998) writing is embedded in a binary of text and context, and tacit and codified knowledge, however the notion of the social creation of value - if founded in a relational ontology of knowledge -

can offer a more sympathetic framework for the analysis of cultural practice (Amin and Cohendet 2003, Ibert 2007).

Interestingly, this social making of knowledge is precisely the opposite of the 'laboratory' model which seeks to isolate the innovation. Traditionally, science and arts are considered as different modalities of knowledge creation (or more usually, ranked in a hierarchy of knowledge creation: science above the arts). If the laboratory is the norm; then inevitably the arts process is seen as inferior. But reverse the situation and there are a variety of cultural practices, which may or may not be controlled (or curated), or managed, or constrained. I simply want to argue in favour of an admission of the potential value of multiple sources and varieties of knowledge. Again, useful examples can be drawn out from the literature on music scenes as communities of practice (Straw 2001, Webb 2008). Such cases explore and exemplify the multiple flows and various justifications of (embedded) musical value, and social and cultural value.

What I have discussed in this section is how a fixed version of knowledge (although it may be multiple) can be considered to be embedded in our innovation discourse. By contrast number of authors have stressed the relational nature of knowledge, although this is a restatement of a traditional network analysis. Value is achieved by organisation spatial position, and the assets accessed, in a network. It is the 'build a better network' (not just a mousetrap) to redirect the flow of knowledge across it. This seems like progress. However, I introduced a different notion of relational knowledge here, one that is commonly and obviously found in cultural economy (although it has increasingly been discussed as part of financial transactions): translation. A socially constructed notion of knowledge(s) that is/are situated and embedded in communities of practice, but more generally communities of 'learning'/'knowledge'/'critique'. Such a notion is radical in the sense that not only does it erode the boundaries and stability of knowledges, but crucially, it transcends the dualism of transport and knowledge. The normative 'lost in translation', a combination of diffusion and loss (using a mechanical analogy), has to be reconfigured as 'gained in translation'. In fact, translation, disputation, instability rather than being interference and loss are the very essence of innovation. Translation can, and does, occur at all points on a network.

## 5. Conclusion

The aim of this chapter has been to open up the problem of 'innovation' with particular respect to the cultural economy. Much of the chapter has been taken up with showing how existing analyses obscure rather than clarify the analytical lens trained on innovation. Analyses of the cultural economy point to a number of problems with normative or standardised assumptions of economic analyses. Fundamentally normative approaches to economics and management (and their derivative discipline) present innovation as linear, atomistic, a-social and technically and economically reductive. Moreover, and more difficult to discuss, they make heroic assumptions about the nature of knowledge itself. Consequentially, I have sought 'un-pick' our understanding of knowledge, particularly that borrowed from scientific discourse. Many of the chapters in this collection point to dimensions of these approaches to innovation and their limiting factors. The analytical point that I want to make is that the underlying principles of these models need to be fundamentally challenged, simply recalibrating them is not sufficient. I have sought to take a bolder approach in this chapter, one that challenges normatively and incrementalism: one that is properly innovative. Central to my analysis has been the question of what knowledge is, and what we mean by knowledge transfer. I pointed out that this construction of the problem, and the dualism it is founded upon, is the fundamental challenge. I have argued here that these limiting factors may not be troubling in the analysis of manufacturing innovation and High-Fordism. However, the lens becomes a distorting one when focused on other sectors, time and places.

The cultural economy, I argued, is an instructive exemplar of these issues. In many respects, viewed through the normative lens, the creative economy is ‘exceptional’. I pointed out that more fundamentally the assumptions of normative studies were - in the case of the cultural economy - what needs to be explained. Hence, normative approaches are relatively ‘blind’ to innovation in the cultural economy. The chapter argued that in the cultural economy ‘value’ is ‘live’, that is it is in a state of becoming. It’s translation to ‘being’ is a relational achievement, a complex interaction of various actors, institutions and networks, and objects. By contrast, normative theories are primarily concerned with knowledge and its movement, more or less effectively or efficiently, from one ‘stage’ to another. Critical approaches have stressed the situated and embedded nature of networks; however, this chapter has argued the need to take a thoroughgoing relational approach, one that not only looks at connections, but also at the relational co-construction of meaning and values. This is the potential of translation approaches: knowledge is remade in contexts; its value changing between situations. This is the core idea of ‘making in translation’, a creative and generative event. We can contrast this to the normative notion of ‘lost in translation', or ‘lost in transit’ where additive, or subtractive, notions of knowledge are deployed. To be sure, analyses of the cultural economy benefit from this perspective; but, they also suggest that the rest of the economy may also benefit from the application of a similar revolutionary science.

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