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Living on Thin Abstractions: More Power/Economic Knowledge

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Introduction

One of Georg Simmel's more contentious claims at the turn of the nineteenth century was that the abstract workings of a mature money economy were mirrored in the very ways that people interacted and made sense of their world. Drained of colour, the abstract character of money was thought by Simmel to bring with it a culture of calculation and a levelling of all things to matters of quantity, not quality.⁽¹⁾ If we extend this image to economic knowledge today, then for some we are in the midst of a similar economic experience whereby the increasingly abstract nature of economic activity rests upon the intangible assets of knowledge and competence, and the broadly insubstantial nature of wealth production. In short, the immateriality of ideas and patented know-how provide a somewhat elusive cultural guide to our economic futures and only lately have we begun to wonder why we were so preoccupied with the bulky side to all things economic and their worn-out physical descriptions.

Of course, we might also add is that whilst science, technology and innovation have beaten this path to high value-added abstraction, there has been recognition of the 'softer', more expressive forms of economic knowledge which chart progress in the cultural, arts and entertainments industries for example, and their more informal, performative nature.⁽²⁾ After all, not all kinds of knowledge and expertise take the congealed form of software or a set of digital signals on line. So even though the kinds of cultural crossover that Simmel envisaged from an abstract economy to a shapeless culture are perhaps a little far fetched, there is nonetheless something about knowledge and its immateriality which chimes with popular cultural experience. In a service-based economy it seems almost churlish to deny the largely insubstantial and abstract nature of economic growth, even to the extent that such descriptive metaphors as the 'weightless economy' or the 'thin air business' beloved by politicians and business journalists alike on both sides of the Atlantic are loosely entertained.

But churlish we should be, not because it would be wrong to deny the more ambiguous, replete forms that economic knowledge has taken, but rather, I would argue,

because many insightful accounts of the contemporary economy remain locked within a formal, abstract script of knowledge that favours know-how which can be reproduced and replicated in codifiable form. This is certainly the case with the more popular tracts on the 'knowledge economy' such as Diana Coyle's *The Weightless World* (1999) or Charles Leadbeater's *Living on Thin Air: The New Economy* (1999), but it is also true of Robert Reich's work on symbolic analysts in the new economy, as it is of the work of more culturally economic writers such as John Urry and Scott Lash. Geographers, too, who work the contrast between local embedded forms of tacit knowledge and its global, ubiquitous counterpart, also lock themselves into a codified script of economic knowledge which prioritizes the abstract at the expense of the looser, ambiguous, more expressive forms of know-how that somehow appear to defy encoding. In what follows, I hope to be able to show how this discursive state of affairs has taken shape and how it has made it difficult to appraise the significance of more affective forms of know-how that influence not just the more obvious cultural or embodied areas of activity such as advertizing, fashion and retail, but also such areas as finance, law, consultancy, as well as 'bulky' activities like engineering.

In the next section, a discourse of economic knowledge is outlined which, following Michel Foucault (1972, 1981) suggests that what is thinkable and what it is possible to say about economic know-how lays down the lines by which we are able to make sense of it. In particular, it is argued that in order to be able to speak on the question of economic knowledge it is necessary to take up a position in relation to the opposition between tacit and explicit knowledges, and more broadly between those knowledges which are seen to be local, ambiguous and poorly shared and those which are easily tied down and eminently reproducible on a global scale. Whilst it is possible to draw sharply differing conclusions as to the nature of the relationship, I wish to show by way of the work of the above mentioned authors that the very opposition itself restricts what is sayable about economic knowledge and constrains our ability to foreground the 'softer', more expressive strands of innovation and economic know-how and their entangled geographies.

Following that, I draw upon the work of Ernst Cassirer, a German philosopher writing in the first half of the twentieth century on the diverse register of symbolic knowledge. Although his work on symbolic knowledges did not concern itself specifically with the economic, his identification of different cultural modes of knowing arguably has much to offer in an economic moment when a high value added economy appears synonymous with creative assets that do not seem susceptible to touch or open to travel.

Power/Economic Knowledge

In emulation of Simmel's view of the rise of money as abstraction, one would welcome all new forms of abstraction because of their potential contribution towards understanding the processes they address, even including economics ... All new forms of abstraction are to be welcomed if they can be recognized as human constructions and can be re-appropriated as part of the enhancement of human self-understanding and cultural development. The narrative only suggests that, at this particular moment, we should be fearful that these forces will continue to increase their power to mould the world to make it conform to the abstract shapes dictated by their internal logic.

(Miller 1998 : 212)

The forces that Daniel Miller has in mind are the abstract machinations of market populism, where government institutions, the World Bank, the IMF, and other global regulators seek to make the world conform to their 'virtual' vision. The logic is a neo-classical one, an abstract world view which effectively removes the practical activities of work and labour from their context and measures them against an abstract prejudice of what should be. Regardless of how far one wishes to sign up to Miller's belief that our lives are increasingly made to conform to the virtual reality of economic thought, there is a sense (echoed in Thomas Frank's (2000) popular work, *One Market Under God*) in

which the 'performance' of the economy has become detached from economic practice, anthropomorphized, and ascribed an abstract, rather dematerialized existence. In the same vein, or rather by way of Simmel's weakness for congruence and analogy, it is possible to see a likeness between the rise of the neo-liberal market as abstraction and what is said to drive this new economic moment: the light and abstract form of knowledge and know-how.

One finds this likeness most plainly at the unthinking end of those who uncritically embrace the so called 'new economy'. Diana Coyle's enthusiasm for 'weightless output' in her book *The Weightless World: Thriving in the Digital Age*, for example, moves swiftly from a concern to understand the intangible source of value embodied within the creative content of a film, piece of music or software package to a position which reduces everything to its costless reproduction and widespread dissemination through the latest in telecommunications technologies. Anything of substance, or any practical activity, associated with the new media is abstracted to reveal the lightness of economic output and its potential ubiquitous use as the forces of digital technology overcome global distance. The language of innovation and technology remain central, but divest of any physical mass or indeed any specific locational characteristics. Only the systematic formalization of knowledge and know-how is celebrated, insofar as it delivers a recognizable stream of largely placeless codifiable returns.

What concerns me here, however, is less the fact that Coyle exaggerates the extent to which the workings of the economy have become dematerialized or the rather naïve geographical assumptions that underpin her scenario of the new, digital economy, but rather more that she supposes and renews a division of economic knowledge between, on the one hand, that which is hard to specify and difficult to tell and, on the other, that which can be explicitly stated and simply replicated, in this instance, as she says, 'at almost no transmission cost, in almost no time' (1999: 3). Whilst she comes down firmly on the side of knowledge and creativity as intangibles that can be abstractly codified and thus replicated, she is able to do so because such a statement only makes sense in a context where knowledge may be other than systematic or formal. In order to engage in a

discussion about creativity, innovation and economic know-how she has to position herself initially within this discourse of economic knowledge. Far from erasing the distinction between tacit, unstated knowledges and their more formal counterpart, following Foucault (1981), we can say that she works it differently, along new geographical lines, with effects that are not the same as previously.

And this is precisely the point. Different institutions, different voices, academic or otherwise work the opposition between ambiguous and formalized economic knowledges in different ways, often drawing different conclusions about the relationship, yet arguably they share a certain way of representing creativity and economic know-how which makes it almost meaningless to talk about it outside of the explicit–implicit framework of meaning. In *The Archaeology of Knowledge* (1972) Foucault refers to the unity of a discourse as something which, far from being coherent or readily obvious, is held together by a 'system of dispersion' (1972: 38). By this, he meant that despite the fact that a unified discourse may contain statements which differ in form or even contradict one another, it is nonetheless possible to discern a *regularity* in the *relations between statements* which provide a constant and unproblematic way of representing something which shifts in terms of appearance and description. It is as if there are certain ground rules which enable us to make all kinds of descriptions and opposing characterizations about the nature of economic knowledge, yet those same rules limit what it is actually possible to say without appearing odd or beyond comprehension.

It is the restriction in the number of things that it is possible to say about something which points up the power/knowledge relation implicit within a discursive formation. Power and economic knowledge exist in a relation of immanence that lays down the lines by which we are able to articulate and make sense of something. There is an everyday sense to the way in which the 'obviousness' of a discourse works its way through the workplace so that tacit knowledge production based upon habit and convention become the stuff of people's lives, or the way that it fixes the norms of discussion and debate in management circles, or helps to shape the abundance of formal knowledges communicated through business and economic journals. The stress placed by Foucault

upon the power/knowledge relation as positive – the ability to do something once we have made sense of it (pouvoir–savoir) – is not so much about 'trammel lines' of knowing as it is about enabling a multiplicity of things to be said about creativity and economic know-how, yet for such utterances to remain systematically governed in style and understanding.

This is a fairly nebulous claim given the breadth of the field, but it is possible to illustrate something of the *style* of the discourse of economic knowledge by looking at three rather different analyses of the role of knowledge and know-how in the contemporary economy. None of the analyses exhaust the field of enquiry, nor are they intended to be representative of any particular approach. Rather each one in its own way takes up a position in relation to creativity and know-how which presupposes a similar understanding of economic knowledge as potentially detachable, open to manipulation and capable of widespread global reproduction. While the status of knowledge within the economy has shifted considerably since the 1970s, especially with the advent of post-industrialism and its many critics, the same division between abstract and unstated, contextual knowledges remains, as does the same way of looking at knowledges which appear less easy to tie down: those based upon sensation, expression or affect. It is not, and I stress this point again, that the latter forms of know-how are judged the same by one and all, but rather that, by default in some cases, it is hard to think of them outside of their relation to more abstract, more globally detachable forms of economic knowledge.

Knowledge Recipes

The first account, at the more considered end of economic journalism and political commentary, is Charles Leadbeater's *Living on Thin Air: The New Economy*, which sets out a case for accepting knowledge as *the* critical driving force of a modern economy. It is a more considered text because, firstly, it acknowledges that knowledge within the economy is not something that is easily spread or transferred between corporate actors, rather 'it can only be enacted through a process of understanding, through which people interpret information and make judgements on the basis of it' (1999, 29). Thus it is

recognized that creativity is not merely about the formalization of previously unstated ways of doing things, but involves an interplay between tacit and explicit knowledges. And secondly, it is noteworthy for its recognition that all things innovative in the ‘new economy’ do not revolve solely around science and technology.

The knowledge – driven economy is not made up by a set of knowledge – intensive industries fed by science. This new economy is driven by new factors of production and sources of competitive advantage – innovation, design, branding, know-how – which are at work in all industries from retailing and agriculture to banking and software.

(1999, 10)

Yet for all this sensitivity to contextual, unstated and aesthetic forms of economic knowledge across a range of industries, when pressed to make a general case for knowledge capitalism all too quickly he falls back upon the language of explicit codification: licensing, intellectual property rights and patented reason. In a wittingly entitled chapter, ‘Delia Smith not Adam Smith’, which likens the process of knowledge creation and exploitation to that of licensed recipe distribution, where knowledge is spread by purchasing the right to use rather than own something, we are left with a formal model of know-how based on replication. Any fuzziness associated with the process of tacit interpretation or interest in the non-graspable side to intangible production disappears once the need for *explicit* codification moves centre stage. The need to communicate ideas and practices in a replicable fashion, to tie down knowledge in peoples’ heads or in the way that they do things, simply overshadows any concern that the main source of added value may actually *elude* a formal process of encoding.

It is not difficult to follow where this pressure for codification may lead in respect of which kinds of economic activity are represented as value-laden and which are not. Among the most valued occupations are likely to be those that produce ‘knowledges’ which are detachable and replicable, and lend themselves to analysis and judgement. Today’s software engineers as well as latter day civil engineers, financial ‘rocket’

scientists as well as laboratory-based scientists, would all fit within the frame, as would many of the new media activities. Certainly, the technologically driven sectors of telecommunication and computing or the information-based services, from law, consulting and finance on, would figure prominently among the knowledge-intensive industries, whereas those whose symbolic schemes are poorly shared by comparison would not. The more replete, ambiguous nature of expressive knowledges, those more open to negotiation than manipulation, which are to be found across and within economic sectors, arguably would fail to show.

In that sense, the ‘thin-air business’, the prioritization of ideas, ingenuity and know-how, is essentially one of manipulation. It is an abstract story which, often unwittingly, loses the expressive or affective side to economic action principally because the quest for creativity and knowledge favours intangibilities that can be codified and reproduced. Thus where the aesthetic enters into the economy through branding or design, or the expressive becomes evident through an image-driven product, it is an instrumental logic which quickly prevails not the affective dimension in all its replete and ambiguous moments. To do otherwise, it would seem, is to invite misunderstanding and incomprehension about what knowledge generation – as a process – is deemed to be all about. After all, Delia Smith, the cookery writer, advocates mixing already available ingredients to a precise formulae, but that does not mean to say that there is nothing sensuous about food production. It is merely that this dimension defies codification and falls out of Leadbeater’s work.

The point, however, is that once a position is taken up in relation to the opposition between tacit and explicit knowledges, it becomes very difficult to perceive the sensual and the expressive as anything other than a form of implicit, and therefore *ungraspable*, knowledge. Yet it is possible, for example, to appreciate certain musical compositions without being able to articulate their reasoning, or to recognize and react to works of art and design without being able to articulate their reasoning, or to judge the mood of a visual composition with being entirely aware of the cues involved. It is not so much that these examples of affective know-how are ungraspable, therefore, as it is that their

replete and ambiguous nature does not lend itself to *abstract* codification.⁽³⁾ And it is the latter, through the language of analysis and abstraction, the vocabulary of technical and practical mastery, and the parlance of science and innovation, which comes to the fore when it is time to make sense of economic knowledge and put it to work or, indeed, to transmit it globally.

In common with Coyle, Leadbeater equates the costless reproduction of knowledge recipes with the global scale of economic activities. Unlike Coyle, however, he is attentive to the local embeddedness of knowledge-creating networks. The importance of proximity and face-to-face interaction to the establishment and transmission of hard-to-communicate knowledges is not lost on Leadbeater, in much the same way that some geographers have been quick to seize upon the significance of place for the exchange of unarticulated, tacit knowledges prized for their innovative know-how.⁽⁴⁾ Clearly, there is something of value in this insight, but that does not mean that we have to *generalize* the divide between local, tacit knowledges and their global, codified counterpart, as if that were the only spatial template which makes economic sense. And yet, that is how it does appear, as a somewhat 'obvious' piece of static geography reflected in the tacit/explicit knowledge divide. That is, as an intuitive *style* of reasoning which lays down the lines by which we are able to make sense of the generation and diffusion of economic knowledge in the contemporary economy.

Knowledge Brokers

The immanent nature of the power/economic knowledge relation is also evident in the limits of what Robert Reich is able to say and voice about symbolic knowledges at work in the present day economy. Different in both tone and substance from Leadbeater's assessment, Reich's account nonetheless falls within a similar discursive style by presupposing that the only knowledges which really matter in an economy are those which are open to manipulation in a systematic way: as part of a process of abstraction and explication. It matters less that Reich's account glosses the ambiguous

side to imaginative know-how, however, as this dimension is apparent in his thinking and governs what he has to say about the repleteness of economic symbols.

In the insubstantial world of service work that he outlines in *The Work of Nations* (1993), Reich identifies the manipulation of symbolic knowledges as one of three broad categories of work in the new service-based economy (alongside routine services and personal services). He argues that the analysis of data, words, oral and visual representations, forms a critical part of what most professions do to add value to goods and services. The manipulation of symbols is the process by which new knowledge comes into play, leading, for example, to the introduction of new software technologies, inventive legal arguments, innovative financial instruments, new advertising techniques or a breakthrough in architectural design. Whilst the output of such activities is by no means always radical in departure, the work with numbers, sounds, words and images presupposes an appreciation of the various symbolic codes which make meaning and innovation possible.

Reich refers to those who perform this kind of work as symbolic analysts.

‘Symbolic analysts solve, identify, and broker problems by manipulating symbols. They simplify reality into abstract images that can be rearranged, juggled, experimented with, communicated to other specialists, and then, eventually, transformed back into reality. The manipulations are done with analytic tools, sharpened by experience. The tools may be mathematical algorithms, legal arguments, financial gimmicks, scientific principles, psychological insights about how to persuade or to amuse, systems of induction or deduction, or any other set of techniques for doing conceptual puzzles.’

(1993, 178)

What is refreshing about this line of debate is that the creative play of symbolic work is not limited to a particular sector of the economy; symbolic analysis is a practice which cuts across industries involving engineers as much as financiers, production designers as

well as marketing strategists. Having said that, the process of manipulation seems to be remarkably similar regardless of the symbolic brokerage in question. Abstraction and analysis, reason and conceptualization, remain the mainstay of the cerebral activities involved, with little or no attention paid to what it might mean to work with symbols that are not overtly cognitive or ambiguous in style.

As such, Reich's understanding of symbolic function bears all the hallmarks of Leadbeater's recipes. The stress placed upon the systematic manipulation of abstract symbols involving the exercise of judgement on the basis of reason rather than representation or expression amounts to a form of knowledge that would not be out of place in an R and D centre where the abstract coupling of knowledge and innovation is feted. Equally, Reich's assumption that the barriers to cross-border flows of knowledge have fallen sufficiently to enable symbolic analysts, in this instance North American professional, to extract global profits from their recipes runs parallel to Leadbeater's thinking.

In fairness to Reich, however, his is one of the few attempts within the economic domain to seriously entertain the slippery relationship between symbolic activity and creative play. Yet his seeming unawareness of the different symbolic registers upon which knowledge may rest leads him to impose a broadly cognitive yardstick upon the sensuous, the meaningful and the expressive regardless of their phenomenological specificity. In many ways it is akin to thinking that because there is such a phenomenon as 'creative' accountants whose task it is to manipulate numbers, then any kind of symbolic juggling and creative inventiveness in the economy naturally follows the same pattern. This will certainly come as something of a surprise to fashion designers, composers and the like who focus on the affective side to economic activity and whose task is often to work without the aid of any explicit codification. Indeed, their very creativity may be dependent upon their ability to work *through the ambiguity* of their symbolic materials to reach an altogether different point from that conceived by Reich.

Yet this seeming unawareness of the different symbolic registers may simply reflect the stress that Reich places upon manipulation and hence upon explicit knowledges over

anything too unarticulated, too playful that it cannot be broken down into meaningful, abstract pieces of know-how and put together again. In a sense, what allows or permits Reich to hold this view is the all too 'obvious' division between economic knowledges that are 'graspable' and those which are not, with only the former really counting for Reich.

Knowledge Overload

In contrast to the two previous accounts, the cultural interventions into economic matters by Scott Lash and John Urry have been distinguished by their willingness to embrace aesthetic as well as abstract forms of economic knowledge, the seemingly less graspable as well as the graspable aspects of what they take to be a shift towards an information-saturated, service-rich, communications-laden economy. Despite this welcome breadth of coverage, however, their style of reasoning reproduces the opposition between ambiguous and codifiable knowledges which, by default, hands back economic knowledge to the practices of patented abstraction.

In *Economies of Signs and Space* (1994), Lash and Urry stress the contemporary importance of the sign or symbolic content of commodities over their material content, and thereby draw explicit attention to what appears to be the broadly insubstantial nature of contemporary wealth production. On their understanding, the production of signs has predominantly taken two forms: a cognitive form, which is exemplified through the flow of information, digital codes and other abstract symbols, and an aesthetic form, which in the broadest of genres engages the expressive side to economic life. The latter is directed at the world of affects, although widely interpreted to include much of what conventionally falls under the play of representation – the mix of images in advertising, the sign-value of material objects, the semiotic work of branding, and so forth. Overall, this symbolic activity is said to add up to an aestheticization of the economic, which takes place within the sphere of production as well as in the circuits of exchange and consumption.

Significantly, Lash and Urry do not restrict symbolic work to a particular sector of the economy. They recognize, for example, that the design process is as much an integral part of manufacturing as it is of fashion or any number of consumer services. Yet they do make a strong case for considering cognitive signs separately from aesthetic signs, in so far as the process of manipulation and negotiation involves two distinct forms of reflexivity and knowledge. Knowledge on the basis of cognitive reflexivity operates on the understanding that the analytic principles – be they concerned with legal principles, financial calculations or forms of insurance risk assessment – are themselves open to question and subject to re-negotiation. Knowledge via aesthetic reflexivity meanwhile operates on a hermeneutic basis whereby subjects – say in the sphere of consumption, retail and fashion – are actively involved in the construction of their own identities through their engagement with lifestyle and consumer choices. The symbolic interplay that constructs consumer codes is thus not something that is handed down through a marketing tradition but is itself open to manipulation by active consumers.

It is not necessary to agree with these examples of reflexivity, however, to admit that the cognitive and the aesthetic are two different ways of apprehending and knowing the world. Even though the aesthetic is defined by Lash and Urry in an excessively broad fashion to cover much more than the expressive side to economic meaning, the difference in symbolic function performed by the cognitive and the aesthetic are deemed sufficient to warrant separate epistemological treatment. Whilst the cognitive and the aesthetic are conceived as separate domains of symbolic activity, each with its own specific mode of operation, that does not mean that Lash and Urry consider them to be on an equivalent epistemological footing, however.

Only the former, it seems, the cognitive stream of codes and abstract symbols which make up what is taken to be the 'new economy', are subject to protocols of judgement designed to sift out knowledge from bits of data and information that form the background hum to a digital economy. Cognitive reflexivity, they argue, presupposes judgement, whereas aesthetic reflexivity is grounded in conventions of taste and the everyday.

Aesthetic reflexivity is instantiated in an increasing number of spheres of everyday life ... If knowledge – intensive production of goods and services is embodied in the utility of the latter, design – intensity is embodied in the 'expressive' component of goods and services, a component having significance from the goods of the culture industries to the 'managed heart' of flight attendants ... Aesthetic or hermeneutic reflexivity is embodied in the background assumptions, in the unarticulated practices in which meaning is routinely created in 'new' communities – in subcultures, in imagined communities and in the 'invented communities' of, for example, ecological and other late twentieth century movements.

(1994, 6)

Habit and convention, what we routinely agree as members of taste communities thus becomes the means by which 'knowledge' is accessed in the aesthetic realm. There is no specific operation of judgment involved whereby some appeal to a kind of universality is made which draws a line, however vague, between knowledge and cultural convention (or a 'universal subjectivity' as Kant would have it).⁽⁵⁾ The predispositions of a taste community, those who on a day-to-day basis 'know' the codes and conventions which inform cultural economic activities and use them to shape collective practices, thus become the arbiters of the aesthetic domain. Aesthetic knowledge shades into culture generally and any specificity that may have arisen from the exercise of judgement is lost. Almost by default, therefore, cognitive knowledge of the analytical and abstract sort comes to stand in for economic knowledge proper.

This disavowal of judgement from the aesthetic realm, however, is not without consequences; the most significant of which is that it effectively hands back economic knowledge to codification. Scott Lash in *Another Modernity: A Different Rationality* (1999) and elsewhere compounds this division when he counterposes two modernities, one based upon the 'hard' knowledge and cognition of the Enlightenment tradition and

the other based upon the 'soft' expressiveness of modernism as cultural experience. In what he heralds as the fusion of these qualities in a new order of technological culture (the techno-scientists and techno-artists of the digital cultural economy), the outcome reads less like the hybrid economy that he envisages and more like the evacuation of epistemology from the domain of the economic. The celebration of the fusion of commodities and capital, on the one hand, with signs and symbols, on the other, so that a global information culture is produced which simply *is*, which stands in for nothing in particular, merely abandons the ground of economic knowledge to those who feel less uncomfortable with tying down meaning or embracing the certainty offered by patented reason.

In many ways this is unfortunate, because both Lash and Urry do hold a clear sense of the importance of the aesthetic to the economy. In counterposing the aesthetic and the cognitive, the 'soft' with the 'hard' knowledges, however, they reproduce a dichotomy that overstates the differences between economic activities in terms of their knowledge content. The issue is, indeed, about the fusion of economy and culture as Lash would have it, but this is not captured by positing the rise of a new technological culture or, as in *Economies of Signs and Space*, by talking about a global, abstract network of flows and relations *and* a local, hermeneutic reflexive culture, where meaning is achieved through shared conventions. Rather, the task is somewhat more mundane, involving a consideration of the distinctive combination of various kinds of symbolic dexterities and knowledges within and across the activities which make up the present-day economy.

Different industries, or rather the economic activities which constitute them, play across a variety of symbolic registers – abstract, expressive, affective and aesthetic – and combine them in ways which stress certain kinds of symbolic usage at the expense of others. So we should not be led into thinking, for example, that fashion and film occupy the symbolic realm of the expressive and the aesthetic, whereas finance and engineering are confined to the abstract and the cognitive realms of industry and output.⁽⁶⁾ On the contrary, in the case of film, for instance, an assessment of the industry's output would include an appreciation of its aesthetic qualities, in respect of both its visual impact and

narrative construction, *and* a technical assessment of its sound, lighting and editing quality, *as well as* judgement on how well the products are marketed and promoted imaginatively. Various forms of symbolic production are thus combined *within* a particular industry, although each would blend and weight the different symbolic functions according to their overall nature and specificity. Even something as hard-nosed and rational as the business of credit, and the use of money more generally, has an expressive meaning, the knowledge of which cannot be deciphered solely through a series of abstract manipulations.

Yet the binary understandings of economic knowledge between the cognitive and the aesthetic, between the explicit and the ambiguous, which seem to slip into our thinking make it that much harder to acknowledge this mix of symbolic know-how. In fact, in all three accounts, despite the different things that they have to say about creativity and knowledge, they each presuppose a version of the above binary which makes it altogether difficult to talk about economic knowledge *outside* of its relationship to abstract codification of one sort or another.

Thus the idea that sensuous and expressive knowledges are graspable, but not through explicit cues, or that the playful creativity of the different symbolic registers may actually rest upon their very ambiguity, or that unformed know-how may be picked up through distanced contacts and translated in new and novel ways, are all hard to entertain. Yet if we are to take seriously the broadly insubstantial nature of wealth production, and the intangible assets of knowledge and competence upon which it is supposed to rest, then it is perhaps timely to consider what might be involved other than patented abstraction.

One way to shed light on the different kinds of symbolic knowledges in play within the contemporary economy is to work through the different registers in a more systematic fashion before contemplating their mix. To do this, I wish to draw upon the work of the German philosopher of culture, Ernst Cassirer, who in the first half of the twentieth century became convinced early on that there was more to 'knowledge' than simply abstraction, 'thick' or 'thin' for that matter.

Cultural Modes of Knowing

As someone interested in the cultural sciences of the time as much as the natural sciences, Cassirer's work reflected to some extent the heady intellectual and cultural atmosphere of Berlin at the beginning of the twentieth century filtered through his more formal grounding in matters of logic, metaphysics and the 'exact' sciences (Verene, 1979). In particular, his interrogation of the mathematically minded, 'exact' sciences like physics led him to question the privileged position that such thinking occupied at that time as the benchmark of knowledge (Krois, 1987). Above all, it led him to consider the various ways – conceptual, perceptual, affective – in which it is possible to 'know' the world and how it is rendered *meaningful*.⁽⁷⁾

The nub of the issue for Cassirer was that the formal reasoning of natural scientific knowledge, and the abstract judgements of mathematics in particular, whilst valid as a form of theoretical meaning, did not amount to a prototype for all knowledge. It was only *one* form of meaning amongst others; *one* conceptual system of meaning embedded within a shared cultural framework of signs and symbols. Other ways of symbolically apprehending the world which do not coincide with abstract conceptual signs, such as the expressive qualities of art or the referential qualities of language, also invoke meaning, although within quite different frameworks of knowledge and knowing. On this view, it is simply misleading to reserve the accolade, 'knowledge', for one kind of symbolic formation when others of a different nature open up a quite different type of understanding and access to the world.⁽⁸⁾

We should be clear about what is meant by 'access' here, as the term gives us a clue as to the nature of Cassirer's symbolic knowledges. Symbolic knowledges, for Cassirer, do not simply reflect a world 'out there'; rather they provide a means of apprehending and comprehending it (Krois, 1987). The validity of a symbolic formation does not rest upon its ability to provide a copy of the material world. On the contrary, it derives its validity from within; that is, from within an organized system of relations between signs which produce meaning that are fixed by convention. The numerical symbols of mathematics are one such system, the aesthetic symbols of light and shade and harmony

are another, and so on. The relationship between symbolic knowledges and the material world is a mediated one, therefore, in which meaning is dependent not upon particular numbers, musical sounds, specific images or the marks we place on a piece of paper, but upon their *symbolic function*: what they express, represent, or signify.

Much of this argument is conducted in Cassirer's three volume, *The Philosophy of Symbolic Forms*, although it is the final volume, published in 1929 and subtitled 'The Phenomenology of Knowledge', which develops the broad standpoint that sensation alongside imagination and understanding may all be placed on an equivalent epistemological footing. With a nod in the direction of Hegel's first major philosophical work, the reference to a 'phenomenology' of knowledge was intended to convey the point that 'knowledge must convey the totality of cultural forms' (1957, xiv), not just those of abstract cognition. Whilst, today, the rigorous systematic thinking of Cassirer and his allusion to totalities would draw breath in some quarters as well as looks of disdain, the reference to *cultural* modes of knowing and experience would not be out-of-place in most social science circles.

Knowing through affect

The third volume of Cassirer's cultural philosophy is given over to the exposition of three symbolic functions: those of expression, representation and signification.⁽⁹⁾ Broadly speaking, the first of these functions, symbolic expression, has close affinities to contemporary concerns with embodied or experiential forms of knowledge which stress their non-representational nature (see Shusterman, 1997; Thrift, 1999). As a kind of practical theory, the mode of understanding sought has less to do with abstract notions of discovery and more to do with, what Nigel Thrift refers to as, 'different possible ways in which we might relate ourselves to our surroundings' (1999, 304). The stress here is upon an immediate, non-discursive mode of experience which, according to Shusterman, has bodily feeling as its locus. The intense, often visceral, nature of immediate experience recalled by Shusterman and its significance for somatic aesthetics runs in parallel to Cassirer's observation that expressive meaning is related directly to sense

perception and bodily awareness.⁽¹⁰⁾ As John Krois summarizes, ‘insofar as perceived phenomena appear to us as agitating, soothing, gloomy, joyful, pacifying or otherwise exhibiting a mood, they exemplify what Cassirer calls expressive symbolism’ (1987, 86).

Expressive symbolism is perhaps best understood as a structure of feeling where, for example, a stylish piece of fashion or the lyrics of a new musical composition ‘move’ us in some way that is unrelated to, say, the latest ‘language’ of fashion or the technical competence by which the music is reproduced. For Cassirer, what stimulates us in relation to design or lyrical composition is not only their respective popular or linguistic appeal; it is, in the case of the former, the harmony of the design, its colour and form, or in relation to music, the unison of sounds, the specific rhythm, tone and pitch which brings a certain satisfaction to the ear. In common with all forms of aesthetic knowledge, an appreciation of film, art, design, music, display and others rests upon their sensuous form – the feelings they express – not simply upon their technical or analytical excellence. In short, there is a creative content to such affects that cannot readily be measured by any abstract yardstick.

The novel point here, as developed by Cassirer, is that whilst such aesthetic appreciation may be viewed as the result of a series of unformed feelings, the process of understanding involved is far from passive. On the contrary, the very production of expressive meaning is itself dependent upon the symbolic codes which make the experience an objective cultural moment. As Cassirer argues in relation to aesthetic experience:

Art is expression, but it is an active, not a passive mode of expression. It is imagination, but it is, productive, not merely reproductive imagination. Artistic emotion is creative emotion; it is that emotion which we feel when we live the life of a form. Every form has not only a static being; it has a dynamic force and a dynamic life of its own. Light, colour, mass, weight are not experienced in the same way in a work of art as in our common experience... (For the cultural producer) the words, the colours, the lines, the spatial forms and designs, the musical sounds are not only technical

means of reproduction; they are the very conditions, they are the essential moments of the productive artistic process itself.

(1979, 160-161)

In other words, when attempting to articulate the affective moments involved, these cannot be grasped outside of the constitutive symbolic domain of which they are a part. It is this domain, where words, sounds, and images function as an expressive system of signs, which makes possible cultural understanding, *regardless* of whether such features can be fully articulated by those involved in the appreciation of a particular art form like film or music. More to the point, it makes it possible to consider the expressive as a form of symbolization which is not subjective or reducible to so-called universal instincts, but as integral to the cultural meaning of objects and practices.⁽¹¹⁾

Thus in relation to the range of activities associated with, say, the law, entertainment or engineering design, practices which ‘move’ people or are evocative in style may be viewed as part of an objective cultural schema, the symbolism of which may be replete and full-bodied but nonetheless communicable. In relation to an artful piece of legal reasoning or a demonstrative concert performance, for example, or a novel piece of service R and D, where meaning may come through affect rather than signification, the cues may form part of a more ambiguous symbolic order, yet still approximate to something that we can call expressive knowledge.

Knowing through codes

In contrast, the second of Cassirer’s symbolic functions, representation, is perhaps the most familiar means by which shared cultural meanings become established. Once a word or image stands in for or depicts something else, the expressive or sensual side diminishes and the referential dimension takes centre stage. Language is the most obvious system of representation, although in the broad semiological approach of Roland Barthes any object or activity can function ‘like a language’ in the production of cultural meanings.⁽¹²⁾ In his classic text, *Mythologies* (1973), Barthes opened up a rich symbolic seam which, for example, made it possible to talk of a ‘language’ of fashion where

clothes function as identity codes for particular social and cultural groupings. Provided that dress codes are understood and that the difference between items of fashion are marked symbolically, a wider realm of signs is communicated that is open to manipulation through advertizing, styling, branding and marketing.

This takes us closer to what it is about representational systems such as language that enables Cassirer to speak about their 'mythical' or imaginative properties. At the core of this understanding is the now widely accepted view that language is fundamentally ambiguous in its relation to the material world. In fact, it is this very ambiguity which reveals the extent to which representation, as a form of knowledge, may stand for little that is actually deemed the 'real' world. Or as Cassirer succinctly expressed it, language '*begins* only where our immediate relation to sensory impression and sensory affectivity *ceases*' (1957, 189). In this sense, anything that functions like a language, as a system or representation, may involve an imaginative play of signs which nonetheless provide 'access' to a particular 'world', be it cultural, political or economic. This is perhaps where most of Lash and Urry's stress on the symbolically saturated nature of economic goods is in evidence. As the site of playful representation, the semiotic work of advertizing, branding and the like involves the skilful deployment of symbols, regardless of whether or not the signs themselves represent anything in particular. While they place such playful work of representation under the term aesthetic, it is perhaps more useful to treat their fascination with 'post-modern goods' as the result of a contrived exercise in the formation of judgements around taste and distinction.

Finally, the third of Cassirer's symbolic functions, signification, amounts to what was for him the most developed knowledge accomplishment: the systematic manipulation of abstract symbols. This takes us back firmly to the ground of formal reasoning, cognition and abstract judgement. If symbolic expression is at one end of the knowledge spectrum then symbolic abstraction is to be found at the other. This, for Cassirer, was principally the world of mathematics, geometry and physics, where reason has progressed far beyond representation with the introduction of numerical concepts and notations that corresponded to earlier, non-numerical forms. According to Krois,

A purely symbolic conception of number regards it neither in terms of psychological activity nor in reference to things, but as a specific form of symbolic interpretation with a validity of its own. In the philosophy of mathematics the series of natural numbers is regarded as a relational 'order in progression' without reference to the counting subject. The validity of mathematics is thereby enclosed in the medium of mathematics itself. The full development of mathematics disregards the question of how well it copies the world; rather, mathematics is perceived as a way of having or understanding a world. The same holds for all symbolic forms. The symbolic interpretation does not copy a given world; it makes a world accessible.

(1987, 84-85)

Having access to such an abstract world, for Cassirer, having the ability to simplify reality in this way, to analyse and extend reasoning, so that for example the world may be grasped by fewer axioms and principles, held out the prospect of being able to think about new possibilities which have yet to be encountered. The more that one is able to articulate a set of possibilities, say, in biotechnology or software development, in abstract terms, the greater the ability to manipulate them symbolically and thus conceive of alternatives and variations which give rise to fresh understandings. This, unmistakably, is the landscape of 'scientific' innovation, where cognitive frontiers are pushed back and knowledge extended through experimentation and 'pure' thought.

If this sounds familiar then that is because Leadbeater's, and relatedly Reich's, account of a knowledge-based economy, where physical assets represent something of an encumbrance in the new economy, is not so far removed from this frontier land.⁽¹³⁾ The raw materials of know-how and ingenuity which take a 'pure' knowledge (not information) form in this landscape feed on a sense of intangible innovation and thus promote a sense of worth that is less material, more abstractly honed. And of course, this kind of manipulation is also the most amenable to replication and reproduction in simple

form. Whilst Cassirer's account of formal knowledge undoubtedly over-emphasizes the significance of numerical symbols within a small range of sciences, for example, by neglecting the role of other notational devices in conceptual advancement (most notably models, diagrams, graphs and maps of whatever kind), the stress overall remains one of reason's advancement through abstract judgement.

Entangled Knowledges, Entangled Geographies

One of the potential pitfalls of juxtaposing Cassirer's systematic account of the different symbolic registers with a set of binary understandings of economic knowledge is that it misses what is interesting about economic know-how: the inseparability of different forms of symbolic knowledge in each and every area of the economy. As implied in the example of the film industry earlier, the technical and the aesthetic co-exist and combine in ways which give the sector its distinctive blend of symbolic knowledges. It is neither possible nor desirable to draw a clear line between 'hard' and 'soft' knowledge options, in so far as they combine to produce the kinds of aesthetic innovation which have long characterized the industry's practices. The same may be said of finance and the new forms of money and their associated risk instruments which make it possible to combine rational, calculative practices with more imaginative representations of what money can do in a fast fleeting world that are far removed from conventional monetary routines.⁽¹⁴⁾ Symbolic innovation in this context works across the symbolic registers in a particular way, echoing Cassirer's argument that meaning, or rather economic meaning, is dependent not upon any specific notation or image, but upon what they express, represent or signify. In short, economic knowledge and meaning is dependent upon symbolic function and it is their entangled natures which differentiates one set of economic activities, one industry, from another.⁽¹⁵⁾

On a day-to-day business level, this is perhaps well known, yet the visceral messiness that makes up much economic practice somehow does not seem to register as part of the knowledge dynamic of so-called 'weightless' or 'thin air' economies. Despite an obvious willingness to embrace the cultural and the expressive as part of what goes on

in economic life, writers as different as Scott Lash and Charles Leadbeater both seem unable to translate aural, visual or expressive works without recourse to some form of explicit abstraction. For Lash, in his hybrid domain of techno-culture, the tactile and the ambiguous become the 'ground' for the new information age, refigured by the digital networks to become something recognizably formal in cultural terms. And for Leadbeater, for all his concern with intangible assets and implicit knowledges, the excess that is creativity still somehow becomes subject to the business of replication and reproduction in codifiable forms.

The stress upon abstracting ideas and practices so that they may be communicated in a replicable fashion also presents a particular problem for understanding the entangled geographies of economic knowledge. As noted previously, the frequency with which unarticulated, tacit knowledges have been associated with the local or regional context and the more explicit, codified knowledges with the global arena has made it difficult to perceive the translation of *all* kinds of intertwined knowledges as both a proximate *and* a distanced affair.⁽¹⁶⁾ It is not as if tacit, innovative know-how does not travel well, whereas abstract, codifiable knowledges, in contrast, spread themselves like a thin film across the globe.

Of course, there is ample evidence to support the view that ways of doing things which can be shown, yet not explicitly stated, favour close relations of proximity and contact,⁽¹⁷⁾ but that does not imply that such knowledges are solely the creation of spatially confined sets of social relations. Tacit knowledges, as well as those generated through affect (for they are not always the same thing, the latter may be graspable in forms other than codified abstraction), may be polysemic, but that does not rule out the possibility of their translation through dispersed relationships 'at a distance' or through mobile sets of transactions. Nigel Thrift's (1994) consideration of financial centres as arenas of activity, where knowledge is tightly bound within networks not places, is an example of such forms of tangled association.⁽¹⁸⁾ Alongside the importance of face to face contact in the City of London for instance, Thrift argues that:

... the increase in mobility actually seems to have helped the City to continue to cohere. The City is now an important transcient space for international financiers, a place to do business. It has become a global node for circulating stories, sizing up people and doing deals. At any one time, much of the City's population will consist of visitors, but they are not incidental. They are part of why the City continues to exist. They are part of the communicative commotion that places the City.

(1994, 351)

Similarly, Nick Henry and Steven Pinch's (2000 a and b) work on the spatialization of knowledge in the UK motor sport industry highlights the mobile, relational character of economic knowledges in this part of the economy.

What matters geographically is not the fact of local embeddedness, but that through relations of co-presence people are able to internalize shared understandings. Some such understandings and their symbolic system of meaning are likely to be place specific, but others may be grasped through distanced networks.⁽¹⁹⁾ The translation of ideas and practices, as opposed to their simple transmission, are likely to involve people moving to and through 'local' contexts, to which they bring their own stock of symbolic knowledges and dexterities.

There is, as said before, no one spatial template through which economic knowledge generation and translation takes place, nor any simple progression from one geographical scale to the next which mirrors some kind of continuum from the less explicit to the fully codified, global version. There are more or less entangled geographies of economic know-how, replete with more or less ambiguous symbolic schemas, also to consider.

Conclusion

In a paper which began by reflecting upon the light and insubstantial nature of much contemporary economic activity, I have tried to show how the intangible economic assets of knowledge and competence do not have to be approached as either abstract or

codifiable. The economic pressure to detach know-how of whatever kind, be it in manufacturing or something less bulky, to tie it down and reproduce it in a recipe format, does not mean that we have to forever live on 'thin abstractions'. That it is possible to *know* in ways other than through analysis and abstraction is perhaps the point of Cassirer's ruminations. In drawing attention to what affects us, often in more ambiguous, seemingly less straightforward ways, it may be possible to take stock of a different set of economic knowledges: those based upon the senses, emotions and feelings, that would otherwise fade into the backdrop of everyday business innovation.

I should perhaps stress the point that this is not a plea to pay closer attention to forms of knowledge which circulate within those industries which wear the label 'culture' on their sector sleeve. Whether in design engineering or multi media, the trading of financial futures or the business of fine arts, economic knowledge rests upon a combination of symbolic functions and uses, with the *particular* combination distinguishing one set of economic activities from another. The embodied nature of cognition, the cognitive role of feeling, the expressive side to abstraction are permutations which play across different economic activities. That this may sound a little strange in economic terms is perhaps because it is rather odd. For it is hard, at the risk of what might seem endless repetition, to make sense of economic know-how outside of its relationship to something which is potentially detachable, open to manipulation and capable of widespread reproduction.

Of course, tacit and ambiguous knowledges are valued, but less for what they are and more for their potential explication and thus exploitation. This is not simply because of some slavish market-driven logic, but also because it appears necessary to take up a position in relation to the opposition between tacit and explicit knowledges to be able to say anything meaningful on the subject. To do otherwise, it would seem, is to invite misunderstanding and possible incomprehension about the role of economic knowledge today. Therein lies the power of discursive closure.

It would also seem that this power lends itself to geographical closure too, with the language of tacit, embedded forms of knowledge mapping onto spatial notions of

proximity and contact to suggest that the former are essentially territorially specific assets, confined to a region or place. Why this understanding should have taken hold in the manner that it has is perhaps evident from the supporting case studies available. What is less clear is whether the more ambiguous, but not necessarily ungraspable, forms of economic know-how discussed here lend themselves to such an easy geography. If abstract codification is besides the point for such knowledges, then so too may be any simple local/global divide as the basis for their production and circulation, as indeed it may be for other economic knowledges.

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Notes

1. It is now commonplace to retreat from the idea of universal cultural experiences, but if Simmel's preoccupation with money is understood in terms of the cultural associations that the *idea* of money generates, then it is possible to read his work as largely concerned with the *objectification* of cultural forms and what that meant for the ways in which people interrelate. See Simmel (1950), (1990).
- 2.
3. Whilst Michael Polanyi (1966, 1967, 1969) tended to elide aesthetic knowing and matters of art with tacit understanding, he was quite at ease with the idea that it is possible to grasp their fullness by attending from particular 'clues', other than those of an abstract, formal nature. Such clues, nonetheless, involve a form of encoding which is simply more ambiguous, more open to negotiation, than is generally understood in the economic knowledge literature.
4. Among the more insightful accounts are Gertler (1995), Gertler *et al* (2000) and Storper's (1997) work, as well as with Salais (1997).
5. In the *Critique of Judgement* (1987), Kant wrestles with the fact that aesthetic judgements, if they are to be considered as something more than subjective preference, must claim some kind of universal status. Yet, clearly, judgements of taste in relation to art or music or design rely largely on a subject's 'feeling' for what is in harmony. To avoid an unmediated subjectivism, Kant moves closer to the idea of a universal convention and the possibility of individuals transcending their own particular needs and desires. As Terry Eagleton (1990) outlines it, for Kant,

“Aesthetic judgements are thus, as it were, impersonally personal, a kind of subjectivity without a subject or, as Kant has it, a ‘universal subjectivity’. To judge aesthetically is implicitly to declare that a wholly subjective response is of the kind that every

individual must necessarily experience, one that must elicit spontaneous agreement from all”.

(1990, 93)

This view runs into difficulty, however, once the possibility of radically different artistic appropriations are entertained.

6. It is misleading for example to equate the symbolic with the cultural as some writers do and then proceed to speak about a range of industries as if they exercised a monopoly over the creative deployment of symbolic forms. This radically overstates the differences between economic activities in terms of their knowledge content. Thus, if we were to follow Sharon Zukin's line of thought (1995, 1996, 1998), we could be forgiven for thinking that the finance, information, and arts and entertainment's industries, loosely described, are the only areas of the economy engaged in symbolic activity. Thus in all mature urban centres she argues that it is possible to discern

... a symbolic economy based on such abstract products as financial instruments, information and ‘culture’ i.e. art, food, fashion, music and tourism. The symbolic economy is based on the interrelated production of such cultural symbols as these and the spaces in which they are created and consumed – including offices, housing, restaurants, museums and even the streets.

(1998, 826)

Symbolism here, then, encompasses both visual representation and cultural meaning, and takes in the branding of cityspaces, the sale of images, as well as the aestheticization of economic production and consumption more broadly. Whilst the range of symbolic manipulation described by Zukin is extensive, taking us beyond simplistic aesthetic or image-driven versions, the overarching impression gained from her work, however, is that of an economy where the symbolic is

restricted to certain sectors and does not include, for instance, the work of design engineers within manufacturing, or less obviously the work of biotechnology consultants or agro-chemical specialists!

7. The stress placed upon *cultural meaning* by Cassirer in his work on symbolic forms is intended to convey the objective rather than the subjective or psychological nature of cultural forms. Each of the three symbolic functions – expression, representation and signification – outlined below convey different ‘dimensions of meaning’ (Cassirer, 1957, 448-9). See also Krois, 1987.
8. This position is outlined fully by Cassirer in his introduction to Volume III of *The Philosophy of Symbolic Forms*.
9. Krois (1987) prefers to use the term significance, probably to avoid misunderstanding over the general use of signifying practices, following Saussure (1974). For Cassirer, the use of the term, signification, is restricted largely to abstract symbolism and the ‘world’ beyond reference.
10. Although Shusterman in his book, *Practising Philosophy* (1997) distances himself from Cassirer's Kantian world and takes us towards a different sense of 'world making', one based on affective learning that displaces the 'knowing subject' at the centre of meaning production. Being moved by simply engaging with the world in all its qualities has an affect which does not register as a 'knowing mind' apprehending a world external to it, but rather as a body *in* the world. Thanks to Steve Hinchliffe for this point.
11. Revill (2000) develops this point in relation to musical immediacy as a culturally performative practice which is only accessible through a symbolic order.

Following Simon Frith, he argues that to turn:

... 'bio-acoustic' facts into musical principles requires rhythmic, metric, timbric, tonal, medlodic, instrumental or harmonic *organization*. Such *musical* organization requires some kind of *social* organization and cultural context before it can be created, understood or otherwise invested with meaning.

(2000, 605)

12. It should be noted, however, that Barthes was somewhat ambiguous about representing art or music ‘as a text’, as if meaning in these activities could simply be articulated ‘like a language’. For example, in Barthes (1985) he asks:

Then what is music? Panzéra’s art answers: a *quality of language*. But this quality of language in no way derives from the sciences of language (poetics, rhetoric, semiology), for in becoming a quality, what is promoted in language is what it does not say, does not articulate. In the unspoken appears pleasure, tenderness, delicacy, fulfillment, all the values of the most delicate image-repertoire. Music is both what is expressed and what is implicit in the text: what is pronounced (submitted to inflections) but is not articulated: what is at once outside meaning and non-meaning, fulfilled in that *signifying [signifiance]*, which the theory of the text today seeks to postulate and to situate. Music, like signifying, derives from no metalanguage but only from a discourse of value, of praise: from a lover’s discourse: every “successful” relation – successful in that it manages to say the implicit without articulating it, to pass over articulation without falling into the censorship of desire or the sublimation of the unspeakable – such a relation can rightly be called *musical*.

(1985, 284-5)

13. Interestingly, Daniel Bell (1973), that other pioneer of a knowledge-driven economy, based his understanding of a post-industrial economy on an ‘abstract system of symbols’ which shape the practices of innovation in science, technology and related fields. More to the point, he actually drew upon Cassirer’s work in *The Cultural Contradictions of Capitalism* (1976) to justify a clear separation

between the 'economic' and the 'cultural', pointing to the fact that only abstract symbolism and not expressive symbolism produced *economic* knowledge.

“I mean by culture – and here I follow Ernst Cassirer – the realm of symbolic forms and, in the context of the argument of this book, more narrowly the arena of *expressive symbolism*: those efforts, in painting, poetry, and fiction, or within the religious forms of litany, liturgy, and ritual, which seek to explore and express the meanings of human existence in some imaginative form.”

(1976, 12)

14. See Pryke and Allen (2000) for an account of representation and calculation in new forms of money such as derivatives.
15. We could go further than this, however, by taking a lead from Nelson Goodman by arguing for the absolute inseparability of symbolic forms, acknowledging the embodied nature of cognition and the cognitive role of feeling, especially in relation to something like art and design. See his *Of Mind and Other Matters* (1984) and the section entitled *Art in Action* which address the cognitive and the aesthetic interrelation.
16. The tendency to map the tacit-explicit distinction onto the local-global scale manifests itself in a variety of ways in the economic geography literature. The 'learning economy' and 'learning regions' literature has probably done most to consolidate this impression, in particular Lundvall and Johnson (1994), Maskell (1999), Maskell and Malmberg (1999), Malmberg, Sölvell, and Zander (1996), Morgan (1995, 1997, and relatedly Malecki (2000). In other respects, this impression has been reinforced by much of the literature on socio-economic networks, in particular those studies inspired by Granovetter (1992), and aspects of the debate over the significance of Marshallian industrial districts.
17. See 4 above.
18. See also Thrift (1998) on the circulation of business knowledges.

19. Certainly Michael Polyani made no explicit connection between the embedded nature of economic action and tacit learning. He did, of course, frequently demonstrate the phenomenon of tacit knowledge by stressing the interiorization of understanding through learning-by-doing, but it is one thing to refer to the manner in which someone may skilfully adopt the performance and ideas of an artisan 'by seeking to dwell in them from outside' (1967, 30) and quite another to state that face-to-face presence and proximity are paramount.

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