

RESPONSE

Tacit knowledge, embedded agency and learning: local nodes and global networks

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Introduction

In developing an individual perspective to explain learning in socio-spatial context, Rutten (2014) proposes that we should drop the notion of tacit knowledge, which has been central to the literature on learning and innovation, notably the debate about spatiality. Rutten argues that the contemporary literature on knowledge and organizational learning has stretched Polanyi's notion of tacit knowledge too far from its original focus on the individual/cognitive realm by giving excessive emphasis to the collective/social aspect to the extent that tacit knowledge becomes indistinguishable from social context. Additionally, he raises two further objections to the tacit knowledge literature: its ambiguity on what constitutes social context and its lack of clarity about the agent of learning. While the 'individual-first' perspective proposed by Rutten sheds light on the fluidity and multiplicity of social contexts in which individual learning takes place, his proposed omission of the tacit knowledge concept undermines the individual agency argument, which is at the heart of his Proposition. In this response, I shall make three key points to complement Rutten's insightful analysis. Firstly, I argue that the notion of tacit knowledge highlights personal agency with regard to learning and therefore an individual perspective on learning and innovation must consider the tacitness of knowledge as its conceptual starting point. Secondly, I challenge Rutten's ambiguous definition of the concept of 'social context' and seek to clarify his 'embedded agency' argument. And thirdly, I highlight the critical role of individual mobility in creating and sustaining overlapping social contexts and driving the socio-spatial dynamics of learning in a global knowledge economy. In what follows, I shall briefly elaborate these points.

Tacit knowledge and individuals as principal agents of learning

Tacit knowledge is the necessary component of all knowledge (Tsoukas, 1996). Rutten's attempt to formulate a theory of individual learning in its socio-spatial

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context by dropping this concept is in danger of throwing out the baby with the bath water. In contrast to Rutten's view that the tacit knowledge literature is ambiguous about the agent of learning and the meaning of social context, I argue that the concept of tacit knowledge itself denotes with great clarity the dynamic relationship between the individual as knowing agent and the relational context in which such knowing arises. Tacit knowledge has two dimensions: the cognitive and the social. The cognitive dimension arises from its experiential nature as depicted in Michael Polanyi's (1966) observation: 'We know more than we can tell'. Here, Polanyi draws our attention to the deeply personal and action-based nature of knowledge that defies easy articulation and communication. Tacit knowledge, in this sense, is a form of 'knowing' that is inseparable from action because it is constituted through action (Orlikowski, 2002). As such, tacit knowledge cannot be communicated, understood or used without the knowing subject – the 'individual knower' is the principal agent of knowledge creation and application.

However, one cannot fully understand the nature of tacit knowledge without considering the social context which enables the process of knowing. Social cognitive theorists (e.g. Vygotsky, 1978; Reber, 1993) argue that individuals acquire their cognitive abilities and inner experiences by internalizing the meanings and patterns of thoughts current in their culture and society. Much of an individual's tacit knowledge can be associated with their social and collective identity. Durkheim's (1964) notion of 'collective consciousness' suggests that social entities cognize and learn only to the extent that the individuals, who make up the social entity, are socially defined beings. The notion of 'community of practice' (CoP) stresses the importance of the social locus and shared practices within which learning and knowledge creation take place (Brown and Duguid, 1991; Wenger, 1998). Transferring knowledge to newcomers, according to the CoP perspective, involves transferring not only the body of codified knowledge, but also the tacitly shared ground rules and cognitive schemes for interpreting and decoding the meaning of that knowledge (Duguid, 2005). Tacitness, in this sense, is not simply a feature of the knowledge itself associated with non-codifiability and cognitive ambiguity. It is also a relational feature inherent in the process of knowing because 'common sense thinking' and shared assumptions that enable joint action are taken for granted by the social actors and remain unspoken (Schutz, 1953).

Learning is therefore rooted in what Giddens (1984) calls the 'knowledgeability' of actors who know tacitly about how to 'go on' in the context of social life (Duguid, 2005). Taking the tacitness of knowledge as a starting point leads to the logical conclusion that individuals are the principal agents of learning and it is their knowledgeability that drives the dynamic interplay between individual and collective learning.

Social context and learning: embedded agency

Individuals are the principal agents of learning, but learning is socially embedded. Rutten's attempt to direct our analytical focus towards the individual and shed light on the individual's agentic motivation and behaviour is laudable, given the collective bias of the literature on learning and innovation. He draws on Granovetter's (1985) notion of 'embeddedness' to explain the relationship between social context and individual agency with regard to learning. However, his reading of Granovetter's (1985) concept of embeddedness is 'undersocialized': he gives inadequate attention

to the structural properties of social context and does not account for how the properties of a social system of relationships influence individual relations and learning. By implicitly restricting 'social context' to a single type of network that builds on individuals' professional relations, Rutten appears to have abstracted his discussion of social networks out of their wider social context (socio-economic structures and institutional environments). By doing so, he prejudges the relationship between context and individual agency and therefore the explanatory framework developed in the paper is partial and ambiguous. One major problem with Rutten's Proposition lies in the lack of clarity in his conceptualization of 'professional' and 'social' networks. The argument that 'social context pertains to both professional and social networks' is ambiguous. Does the term 'professional networks' refer to individuals' networks of relations formed around work-related contacts or is it used as a collective term to denote loosely-coupled professional networks cutting across organizations as opposed to more tightly-knitted organizational-based networks? In either case, the definition of social context is too restrictive. Or is the term 'social and professional networks' meant to be all encompassing, including both 'professional' and 'all other kinds' of social networks (e.g. organizational, ethnic and regional)? In this case, the definition is far too general and therefore is of limited value in explaining the relationship between social context and individual agency in learning.

It might be useful to conceive the networks of relations governing learning as 'social containers' which vary in their 'boundaries' (range) and 'relational embeddedness' (cohesion) and hence in the variety of knowledge resources and cognitive autonomy accorded to individuals. An agentic (individual-first) perspective calls for a clear explanation of how these two dimensions affect individuals' agentic capacity (ability to learn) and motivation (willingness to learn). For example, one can make a distinction between social containers based on firm-centred organizational communities and those based on occupational/professional networks. Organizational communities are best exemplified by the knowledge creating companies described in the work of Nonaka and Takeuchi (1995) and the J-form organization in the taxonomy of Lam (2000). They relate to a socially cohesive and highly bounded community characterized by strong relational embeddedness which maximizes social control over individuality. This type of social container is also immensely 'local' in both relational and spatial terms. Individuals within organizational communities are strongly motivated to share and diffuse tacit knowledge through socialization but may have limited capacity to create radically new (tacit) knowledge because of the strong convergence of competence and experience inside the community. The deep penetration of communal background knowledge and shared cognitive schemas into individuals' patterns of thought and action constrains the scope for personal agency. By contrast, occupational/professional networks are more loosely coupled knowledge collectivities built on a common professional practice which transcends organizational and geographical boundaries. Adhocracies (Mintzberg, 1979) and project networks prevalent in creative cultural industries are heavily reliant on this type of professional network. The knowledge base of professional networks is dispersed and fluid, and individuals are coordinated through common training and professional goals. The boundary of this type of social container is permeable in part because of individual mobility across organizational and geographical boundaries. Professional networks therefore may have a global reach but encompass many local communities of practice. Individuals are able to acquire a diversity of knowledge resources through their connectivity with distant professional peers and re-embed them in their

local communities. Rutten's analysis seems to be heavily biased towards this type of fluid social container in which individual experts enjoy a much higher degree of autonomy than their counterparts in organizational communities.

The above stylized comparison shows that the social context in which individual learning takes place can be analysed at various levels (e.g. organizational, occupational, regional, national and transnational) and its properties vary between industries with different knowledge bases and institutional environments (Lam, 2002; Ashiem *et al.*, 2007). It also suggests that an agentic perspective for understanding learning in social context will need to explain how the structural and relational properties of the social context affect individuals' agentic capacity and their motivation. Here, Rutten is surely right to direct our attention to the concepts of 'ability' and 'willingness' (Reagans and McEvily, 2003), and to stress the critical role of individuals in driving knowledge creation and sharing in multiple and overlapping social contexts. His proposed focus on individuals' network connectivity and behavioural orientations with regard to learning opens up the possibility of explaining the dynamic interplay between context and individual learning. However, I have reservations about his interpretation of the role played by networks. His view that open professional networks will more generously equip individuals with the ability and willingness to learn than closed social contexts does not take into account the distinct effects of network range and cohesion. Reagans and McEvily (2003) and other authors (e.g. Uzzi, 1997; Minbaeva and Michailova, 2004) have shown that network range (openness) enhances individuals' ability to learn and transfer knowledge whereas network cohesion (closure) facilitates their willingness and motivation to share knowledge. This is because increased network range exposes individuals to diverse perspectives and knowledge sources which broaden their cognitive frameworks and strengthen their capacity to learn and teach, whereas increased cohesion engenders trust and emotional engagement which enhances willingness/motivation to share knowledge. Intrinsic motivation is notably important for the sharing of tacit knowledge (Osterloh, 2005), which also explains why strong ties facilitate the motivation to transfer tacit knowledge (Hansen, 1999). There is often a trade-off between range and cohesion. Overlapping social space may help to resolve this tension by enabling knowledge brokers to flourish (Wenger, 1998; Hargadon, 2002). These individuals are capable of embedding themselves in multiple social contexts while also being motivated to engage locally. By recognizing the factors behind this trade-off, one could inject a stronger agentic component into the individual-first perspective proposed by Rutten.

The spatial dimension: local knowledge nodes and global networks

The individual-first perspective proposed by Rutten has gone some way towards reconciling the theoretical extremes of the Territorial Innovation Model (TIM), which focuses on local spatial stickiness, and the Communities of Practice (CoP) view, which stresses global relational stretch. In particular, Rutten argues that it is the 'overlapping' of spatially sticky social contexts with global social contexts and the 'shifting' of individuals between them that connects local places with global spaces. However, it remains unclear how the overlapping and shifting occur in the first place and what sustains them. Rutten points out that 'knowledge workers are often professionally part of trans-regional (global) networks' and use temporary proximity and long-distance learning to maintain these networks. These global professional

networks no doubt play a crucial role in stretching individuals' relational space and extending the spatial reach of their learning. But spatial reach (range) that enables access to new knowledge should not be conflated with the social depth (cohesion) needed for its effective transfer and exploitation. Novel knowledge acquired by 'range' needs 'cohesion' in order to be exploited (Reagans and McEvily, 2003). The integration of global spatial reach with local social depth is what is needed for learning and innovation in a globalizing knowledge economy. Human mobility plays a critical role in this process: it enables individuals to remain knowledgeable over distance.

While individuals are spatially sticky to their 'homes', they are also increasingly mobile within boundaryless regional and global labour markets. The managed global mobility of people has always been important for generating the cognitive and relational proximity needed for the circulation of tacit knowledge within distributed corporate networks (Faulconbridge, 2006). More recently, the phenomenon of 'brain circulation' and transnational high-skilled migration (and re-migration) (Saxenian, 2005; Klaerding, 2009) signifies the growth of free agent transnational mobility beyond the confines of firms' organizational networks. The 'astronauts' shuttling back and forth between Taiwan's Hsinchu region and Silicon Valley, and the returnee entrepreneurs in China and India (Saxenian and Hsu, 2001; Saxenian, 2005) are prominent examples of individuals who act as knowledge brokers by connecting learning in local places with knowledge resources drawn from global spaces. By virtue of their position at the intersection of multiple social contexts, these individuals possess a distinctive reflexive capacity and are able to dis-embed knowledge from one familiar location and re-embed it in another familiar one (Williams, 2007). Furthermore, their cultural and social affinities to specific locations enable and motivate the effective transfer and exploitation of knowledge. The relational embeddedness at home gives the returnees the competitive edge to serve as knowledge brokers and innovators, linking local tacit knowledge with novel ideas drawn from their diverse global networks.

The example of transnational migrants serves to illustrate how people on the move and their cultural affinities to local nodes drive the socio-spatial dynamics of learning in a global knowledge economy. It also reaffirms my earlier point that it is the tacitness of knowledge that privileges the individual as the principal agent of learning.

Conclusion

Parallel with the rise of a knowledge-based economy is the increased attention paid to individual learning and creativity among academic researchers, and their greater concerted effort to make the individual more visible in theories of learning and innovation, which have hitherto been dominated by a collectivist orientation (e.g. Felin and Hesterly, 2007; Gupta *et al.*, 2007). Rutten's Proposition is in line with this emerging stream of literature, which seeks to reconcile the individual versus collective, and agency versus structure dilemma in innovation studies. His explication of the interaction between the individual, spatial stickiness and relational space adds an interesting dimension to the debate. However, the theoretical contribution of his Proposition could be strengthened by more explicitly adopting the embedded agency argument in the Giddensian tradition (Giddens, 1984; Sewell, 1992). At present, his individual-first perspective is undersocialized and yet the agency element is only

weakly developed. A more fine-grained explanation of how the properties of a social system of relationships enable and constrain individual learning, and how the overlapping and shifting of socio-spatial contexts create free cognitive space for learning and (new) knowledge creation will help to sharpen the theoretical stance proposed.

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