

Rethinking innovation: context and gender

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Abstract. Geographers have a keen interest in innovation because of its connection to regional economic advantage. We argue that, to date, understandings of innovation are predominantly technological and product driven and defined in universal terms such that the nature of innovation is stripped of its contextual influence and is overly masculinist. Through combined analysis of interview material from two complementary studies on the gendering of entrepreneurship based in the United States, this paper challenges current conceptualisations of innovation within geography. We show how the context, both social and geographical, of an innovation is elementary to its identification as innovative. Moreover, we reveal some of the many instances of innovation that occur in economic sectors and by agents that are typically ignored or undervalued by current research and by policy. Our analysis challenges researchers and policymakers to expand their concepts of regional and urban development beyond those processes associated with technologically defined and growth-oriented originality, such that notions of local development may enhance the social well-being of places and be more gender inclusive.

Rethinking innovation

Innovation is widely seen as the key to regional and local economic advantage (for example, Barkham, 1992; Chandra and MacPherson, 1994; MacPherson, 1992; Simmie, 1998; Suarez-Villa, 1991). The innovative capacity of a place dictates its economic fate: places that can tap into, attract, and support innovative capacity will prosper; those that cannot will languish (Amin and Wilkinson, 1999; Helmsing, 2001; Keeble et al, 1999). Geographers' fascination with innovation grows out of this presumed link to economic advantage. Empirical studies document how innovative activities cluster in space and seek to explain why some places are more innovative than others and how, in turn, economic growth is related to innovative milieux (Feldman, 2000).

Probably the most inclusive definition of innovation is that it is "the creation and exploitation of new ideas" (Kanter, 2000, page 168). More economically specific is Feldman's definition that emphasizes the links between capitalism and the competitive edge that innovation confers: "Innovation... is the novel application of economically valuable knowledge" (2000, page 373).⁽¹⁾ Although these definitions of innovation are couched in fairly broad terms (they make no explicit mention of technology, for example), geographers and economists concerned with local or regional economic development in Western economies almost invariably use the term 'innovation' to mean 'technological innovation,' and in their empirical work are usually concerned with manufacturing activities [although Nijkamp et al (1997) and a few others include the business services sector].

⁽¹⁾ Similarly, Porter (1990, page 45, from Simmie et al, 2002) sees innovation as an attempt "to create competitive advantage by perceiving or discovering new and better ways of competing in an industry and bringing them to market."

Clearly, the contemporary concept of innovation has been constructed to refer to certain kinds of economic activity (largely those associated with certain kinds of technology) and to exclude other sorts of economic activity. Importantly, those economic sectors that are predominantly peopled by men in terms of ownership and employment are the ones that fall comfortably within these dominant definitions of innovation. Current understandings of innovation reflect, moreover, the concept's origins in and linkages to a particular historical context, namely that of the 20th-century industrial complex that characterises OECD countries.⁽²⁾ For at least the past seventy years, technological innovations in the manufacturing sector have been central to the ways in which those countries have sought to achieve economic advantage.

Our own empirical studies of entrepreneurship have led us to question and rethink innovation and its conceptualisation in relation to place and people. Many of the entrepreneurs we interviewed, particularly but not exclusively women, saw their businesses as innovative in the sense that they brought economically viable, new ideas to a place and created significant positive change in that place. In other words, they were able to fill an unmet need. Yet in many if not most instances, current thinking in economic geography and among those who shape local economic development (LED) policies would definitively exclude these businesses from the category 'innovative' because the businesses serve primarily a local market or because they do not employ a new technology.

We recognise that broad definitions of innovation like those of Kanter and Feldman can introduce ambiguity such that it becomes difficult to know what is and what is not innovative. We do not believe, however, that confining 'innovative' to economic and technological understandings is the only—or the best—way to think about this important concept. In this paper we seek to theorise innovation in relation to its geographical and social context. Specifically we want to rethink innovation in a way that requires explicitly engaging with how place and the social identity of the innovator shape what can count as innovation and therefore what commands the attention of policymakers.⁽³⁾ We do this so that the contributions and potentially transformative roles of a greater range of businesses and business owners can be recognised. Such recognition should yield impacts that go beyond simple acknowledgement to prompt shifts in approaches to local and regional economic development.

We begin by making a case for contextualising what counts as innovation. Through geography and gender, we identify the potential of context for revealing innovation and innovative opportunity. Examples from our US-based studies illustrate how contextualising innovation geographically and socially makes visible previously unrecognised opportunities for innovation and ways of innovating. We conclude with thoughts about the implications of rethinking innovation for geographical research and offer some questions for those interested in incorporating a more inclusive and contextualised understanding of innovation in local and regional economic development policy. Rethinking innovation seems particularly important now, in light of recent changes in gender and economic regimes.

⁽²⁾ We thank David Angel for suggesting that we emphasise this point.

⁽³⁾ Bunnell and Coe (2001) make a different point about the need to make innovation studies more geographic. They argue that the spatialisation of innovation has been neglected and there is a need for work that looks across different spatial scales. Similarly, Amin and Thrift (1997) make the point that transactions are placed, but their emphasis is on the institutions that shape the processes of transactions and not on the ways that individual components within the transaction are given value.

(Re)defining innovation

In her review of geographical research on innovation, Feldman (2000) notes two dimensions along which researchers distinguish among innovations—product versus process innovations and incremental versus radical.⁽⁴⁾ Product innovation is the creation of new products, which she argues can be measured empirically through patents or new product announcements. Process innovations concern the ways that firms understand, organise, or motivate change that will lead, according to Pavitt (2003, page 5), “to competitive success”. Not surprisingly, by their very nature process innovations are more difficult to measure. Incremental innovations concern small improvements or changes, whereas radical innovations create entirely new products or categories of products and require new competencies. These competencies are usually defined in terms of the labour inputs, and the literature points to the importance of information exchange in facilitating this aspect of innovation (for example, Lawson and Lorenz, 1999; Massey et al, 1992). Product and process innovations may be either incremental or radical. If we use the category of product innovation as an example, a radical innovation may replace an existing product or category (for example, the automobile replacing the horse as a dominant mode of transportation) or it may introduce something entirely new into the marketplace. Process innovations may similarly be radical or incremental, but difficulties in identifying process innovations are magnified when one is trying to determine degree of innovation.

Although the link between innovation and technology is not a necessary one, in practice current conceptions concerning both process and product innovations in the empirical literature are most often taken to mean some form of technological change—either in a product or in the production of a good or service (for example, Kanter, 2000; Keeble, 1997; Simmie, 2002). Indeed, although Bunnell and Coe (2001) and Amin and Thrift (1997) each strive to present a broad theoretical conception of innovation, one that encompasses more than just technological innovation, their reviews of empirical work starkly highlight the dominant focus on technological change in recent research. Innovations outside of sectors associated with technology, although recognised as possible in the definitions of innovation that they use, are not illustrated or discussed. Government and quasi-government officials concerned with innovation-focused economic development⁽⁵⁾ likewise focus on technological innovations—to the neglect of other forms of innovative activity—in their efforts to increase local wealth.

The focus on technological innovation⁽⁶⁾ in economic geography is closely linked, we believe, to the prevailing view that to count as innovative a change must help improve the position of a firm or a place in the export market (for example, Keeble, 1997). The significance of an innovation is determined by its ability to provide a firm or place with an absolute comparative advantage in the global marketplace

⁽⁴⁾ Notably Feldman (2000, page 374) limits her definition of process innovations to those that “incorporate new technology into the methods of production”.

⁽⁵⁾ Not all economic development initiatives aim to increase the innovative capacity of places specifically in their efforts; however, they do encourage home-grown firms. Place-based programmes, such as the Social Enterprise, Community Economic Development, and New Deal for Communities initiatives, in the United Kingdom are examples of this kind of LED strategy.

⁽⁶⁾ According to the OECD website (<http://www.oecd.org>), “technological innovations are those innovations that comprise new products and processes and significant technological changes of products and processes. An innovation has been implemented if it has been introduced on the market.” A nontechnological innovation is defined in the following way. “Expressed in its simplest form, non-technological innovation covers all innovation activities which are excluded from technological innovation. This means it includes all the innovation activities of firms which do not relate to the introduction of a technologically new or substantially changed good or service or the use of a technologically new or substantially changed process.”

[see Krugman (1991) for a discussion of comparative advantage]. The more radical (as opposed to incremental) an innovation, the more likely it will enable the penetration of large and distant markets and the realisation of profits (Casson, 1990; Malecki, 1994). In this dominant view, the most significant innovations are those that are commercially successful in the global arena (Simmie, 2002). Therefore, although an innovation may be born 'here', the potential market for a radical innovation—a 'real' innovation—is understood as being everywhere and at the same time nowhere in particular.

The everywhere and nowhere of the potential market are tied to the assumption that the relevance of innovation, indeed the essence of innovation, hinges upon its ability to contribute to the export base of a local or regional economy. In the export-base model, cities are conceived of not as centres of distribution or as centres of consumption, but as centres of production. According to the model, cities develop by expanding their ability to sell goods to markets located outside the urban boundary [Hanink (1997); see Malecki (1991, page 60) for a discussion of the export-base model]. What counts as innovative, then, are the changes in product or in production that lead ultimately to the creation or exploitation of large, extralocal geographic markets (see, for example, Keeble, 1997; Ofarrell et al, 1992; Simmie, 2002; but for a critique see Gibson-Graham, 1996). In other words, innovation is defined by economic supply and demand conditions, not by the actual creative process that fostered a change in the first place. Furthermore, when policymakers try to increase the innovative capacity of a place, they target as innovative those activities that have the highest potential for market penetration; it is these so-called basic activities that receive the majority of public sector attention in innovation-oriented LED schemes (Aslanbeigui and Summerfield, 2001). In this way the concept of innovation has been silently (because to our knowledge others have not signalled this link) entwined with export-base theory.

We would like to see innovative activity decoupled from export-base theory so that the contributions of nontechnological innovations and innovations with primarily local impacts can be appreciated. In this we join others (Blumenfeld, 1955; Krikelas, 1992; Tiebout, 1956) who have criticised export-base theory on the grounds, *inter alia*, that it inappropriately assumes a duality between basic and nonbasic activity, that as a result it is nearly impossible to test empirically, and that it minimises the important contribution that nonbasic activity makes to economic growth and development. In addition, we would note that the whole debate over basic versus nonbasic economic activity has been overly economistic, overlooking as it does the linkages between economic and social processes in place. Clearly any business, regardless of market extent, that contributes to local amenities and to quality of life also enhances the ability of a place to attract outside capital, further highlighting the deep interdependence between nonbasic and basic activity and between economic and social/cultural/political processes. Disconnecting what counts as innovation from the export-base theory of economic development opens the door for recognising as innovative those activities whose innovativeness is defined contextually, rather than universally.

Contextualising innovation: local geography and gender

Local context has not been entirely ignored by geographers interested in innovation. Most innovation-focused studies in geography have examined how place-to-place variations in resources as they are set within institutional contexts contribute to spatial variations in rates of innovation. The presence of incubator industries, technical resources, a skilled labour force, suppliers, business networks are all attributes of 'successfully' innovating regions (Bruno and Tybee, 1982; MacPherson, 1992; Malecki, 1994). Researchers have adopted the notion of 'institutional thickness' as a way of understanding how these attributes come together to form innovative milieus.

Particular emphasis is placed on the ways local knowledge and social networks expedite access to resources within a specific location for those who are perceived to be innovators (for example, Amin, 1999; Amin and Thrift, 1997; Harrison, 1994; MacLeod, 1998; Maillat and Lecoq, 1992; Pamuk, 2000). Places that are 'institutionally thick' have an abundance of resources, with a distribution system characterised by coordinated and well-defined institutional structures (Amin and Thrift, 1994). Thus, local conventions and norms, as well as the degree of co-operation among actors within a particular business community, shape the distribution of capital and information to innovators and from innovators to the market. Although this theoretical framework acknowledges that there are likely to be elements of identity that contribute to the legitimacy of individual innovators within a particular institutional context, this aspect of institutional thickness has been relatively neglected. While the concern is with how geographic flows and context ensure the continuation of innovation, there is no real attempt to understand how innovation happens in the first instance or how the demand for and supply of innovations is contextualised.

Instead, prevailing belief holds that there is no need to theorise the actual products of innovation, and therefore their innovators, because products tend to be ephemeral owing to business cycles and technological change. What this means, however, is that innovative products and those who create them are without a theoretical identity. Instead, reflecting the specific regime of accumulation within which this concept of innovation emerged, the focus has been on the *process* of innovating as the key to a region's capacity for economic growth (Ettlinger and Patton, 1996; MacLeod, 2000; Simmie, 1997). So, for instance, analysts have asked whether institutional thickness contributes to increases in innovative behaviour or to regional 'lock-in' whereby firms are propped up by institutional structures and the need for innovation is diminished (see, for example, Glasmeier, 1994). By emphasising process without considering the ways that the object or product of an innovation is defined within and by an institutionalised geographic setting, researchers are likely to underestimate the full capacities of regions and places to innovate because they fail to acknowledge the relational positions that are embedded within the social identities of individual innovations and their creators.

In a discussion about the relation between commodities and geographic areas Molotch (2002) suggests a way forward by arguing that goods are mirrors of the location in which they are produced. He makes plain through the use of examples (including the configurations of and geographical variations in the design and marketing of toilets, condoms, and garlic presses) that products emerge in particular ways because of the norms, rules, expectations, and facilities that exist in place. Molotch's products, however, seem to pop up like mushrooms when and wherever there is a recognised demand (market), although he does say that some ideas will not emerge if the time and place are wrong (what this means remains largely unspecified). Nowhere does Molotch consider the role of the innovator and his or her positionality within a place in shaping the emergence of innovations. We argue that innovations themselves are not just products of place, but also of the people who are embedded in particular places: innovations emerge from the intersection of place and the social identity and positioning of the innovation and the innovator. Thus, a need may be recognised in a place, but *who* recognises that need (who innovates) affects the ability of that innovation to come into being—and this process is place specific.

Kanter (2000) compares innovations to flowers and argues that like seeds they must be nurtured carefully in order to thrive. In Kanter's metaphor, garden conditions are as important as the gardener for producing abundance. We extend this metaphor by pointing out that the garden and its design (and by implication the gardener) help to

determine the value of individual plants. What is desirable to one gardener or in one garden may be considered a weed by or in another. Thus, innovations do not simply flourish or languish depending on the resources available within particular contexts as Kanter suggests; it is the value that is attached to (nascent) innovations—value that depends on geographic context—that determines whether an economic activity will be seen as innovative and nurtured accordingly or neglected as a useless weed. In this way, innovations are very much embedded within the geographies in which they take place.

Lash and Urry (1994) and more recently Lee (2002) maintain that commodities derive as much significance from their symbolic content as from their material content and that this symbolic content is linked to the workings of everyday life and gives rise to what Lee (2002, page 336) refers to as the “materiality of economies”. Thus the meaningfulness of innovations “make[s] sense in material terms only in the context of circuits of material reproduction” (page 336). The context of these circuits includes the spatially defined supply-and-demand relationship but also spatially defined social relationships (see also Molotch, 2002). The circuits of material reproduction associated with male-dominated industries and more generally with entrepreneurship and business ownership are embedded in gender regimes that historically have excluded women (Mirchandani, 1999). By challenging and undermining the material associations between men and auto repair, construction, or even ‘executive functions’, women who enter male-dominated economic spheres are fundamentally changing the material, social, and political landscapes of material reproduction and thereby creating new economic geographies in very innovative ways (Hanson and Blake, 2005). Our point is that the symbolic and material values accorded to a potential innovation depend on the interplay between place and how the innovator and the innovation fit within that place. Women are socially located within places differently from men (McDowell, 1997), including the place-specific ways that women are positioned in relation to business ownership; gender differences therefore are likely to be important in creating opportunities for innovations and in determining their values.

The contextualising of innovation—making what is considered innovative dependent on context—calls for the theorising of innovations in place, rather than accepting a universal norm and it also calls for a new way of thinking about how innovative activity relates to context. Specifically, it highlights the role of the social and economic environment in valuing and promoting certain kinds of innovative activity while devaluing and even actively discouraging others. A contextualised innovation acknowledges that innovators are embodied and therefore likely to relate to local contexts for innovation in distinctive ways. The social identities of innovators figure into the ways that institutions in particular contexts promote, value, and define innovations. Gender is therefore thoroughly implicated in the question of how and why certain geographic contexts encourage some kinds of innovations to emerge and develop while discouraging or preventing others.

Developing innovation

We have called for a notion of innovation that is decoupled from export-oriented approaches to LED and have advocated a contextualised definition of what counts as an innovation. Adopting a notion of innovation that is contextual and that does not prioritise technology and exports over all else requires an understanding of economic development and related initiatives that differs from those that currently seek to promote innovation. Indeed, we support LED that seeks to develop people and places

more generally, rather than advancing a neoliberal, capitalist development agenda (Gibson-Graham, 1994).⁽⁷⁾

The majority of LED approaches have focused on innovation, traditionally construed, specifically as part of their remit to position the local economy advantageously within a global, neoliberal project (for a related discussion see Sheppard, 2002). Examples include science parks and innovation centres designed to create the conditions that existed in Silicon Valley in the United States and the Cambridge region in the United Kingdom. The success of these initiatives has been evaluated on their ability to create new potentially high-growth firms so as to expand the competitive advantage of and generate prestige for the regions in which they are located; success has not been evaluated in terms of ability to redistribute wealth or to improve local social well-being.

Although not explicitly linked to innovation, other approaches to LED have been suggested and implemented. Katz (2001) has called for strategies to develop difference within places, including elements supporting social reproduction, and Gibson-Graham (1996) see the advantages of local noncapitalist production systems. LED initiatives that pursue one of these alternative approaches aimed at meeting local needs include the work of the Greater London Council's industrial strategy in the 1980s (as cited by Gibson-Graham, 1996) and more recently Community Economic Development schemes. We suggest that the transformative power of these initiatives could be enhanced by the kind of rethinking of innovation we outline here. Specifically, we are suggesting that LED efforts would benefit from a view of innovation that is sensitive to *where* the innovation is taking place and *who* the innovator is.

Alternative approaches to LED (those that focus on local well-being broadly construed) are consonant with recent thinking in the urban planning literature on what makes good cities. Although, as Fainstein (1999) notes, some authors emphasise outcomes (the substance of the good city) whereas others emphasise process (the planning and political processes that constitute the good city), all stress the importance of the inclusion of marginalised groups. We believe our argument about innovation contributes to this literature by specifying how the positionality of certain citizens affects their ability to enhance local economic development and hence to contribute to creating 'the good city.' The broader definition of innovation we support is embedded within a concept of LED that embraces the needs and contributions of all citizens.

Placing innovation

Before discussing in the next section a few examples of contextualised innovations, we briefly describe the empirical projects from which these examples are drawn. Blake's research focused on women business owners in Worcester, Massachusetts, with particular attention to how gender and geographical location within the metro area influenced a woman's ability to access resources for her business. The research involved interviews with thirty-one COR⁽⁸⁾ agents and sixteen women business owners [for a full account

⁽⁷⁾ We are not alone in calling for a different understanding of development that does not prioritise a neoliberal agenda. For example, regarding the inevitability, or even dominance, of capitalism see Gibson-Graham (1996). Sheppard (2002) likewise provides a good discussion of the relationship between place and the neoliberal model of globalisation as well as a critique of this view of development. Indeed, Sheppard calls for "a recovery of local understandings, norms, and narratives of social change" (page 312) as a way to resist neoliberal conceptions of globalisation.

⁽⁸⁾ COR stands for community of resources. A lawyer used this name to describe the group of service providers (including a lawyer, accountant, banker, and business counsellor) that he felt a prospective business owner should bring together when starting a business. For a more detailed discussion see Blake (2001).

of this research and the methods used see Blake (2001)]. Hanson's project focuses on the intersection of gender and geography in entrepreneurship, with particular attention to how gender shapes the start-up process, location decisions, and the relationship of the business to place. The research reported in this paper draws upon in-depth interviews with 200 randomly selected business owners in Worcester, Massachusetts; roughly equal numbers of male and female entrepreneurs were interviewed, and about 15% of the cases turned out to be male–female partnerships [for a description of the methods used see Hanson (2003)]. In both authors' projects interviews lasted between one and two hours each. In addition to the in-depth interviews, each project included a postal survey of several hundred business owners, but the following discussion draws primarily from the interview data. Common to both authors' empirical projects was an examination of entrepreneurship in the context of everyday life and the spatial interactions of daily activity patterns (Hanson and Hanson, 1993; Hanson and Pratt, 1995).

Aldrich and Waldinger (1990, page 112) provide a definition of entrepreneurship as “the combining of resources in novel ways so as to create something of value.”⁽⁹⁾ New firms and small firms are often considered more innovative than older and larger existing firms (Acs et al, 1999; Aoyama and Teitz, 1996; Barkham et al, 1996; Brown et al, 1990; Siegel, 1990) and the number of new firm start-ups in a place has been used as an indicator of innovative activity (for example, Audretsch and Vivarelli, 1994). Moreover, the use of numbers of start-ups to measure regional or local innovative activity is just one instance of the frequently made link between innovation and entrepreneurship. The link between small/new firms and innovation, however, is neither strong nor exclusive. Although not all small or new firms are innovative in any sense of the term, our studies of nonfranchised business owners of small and medium-sized firms disclose many who combine resources in ‘novel’ ways to meet needs that were, as yet, unrecognised and that are attentive to innovative activity occurring in sectors not typically associated with technology.

Our analysis involved examining the transcripts of our interviews with business owners in all economic sectors, including those that would typically be overlooked by researchers studying innovation (for example, health services, insurance, automotive repair, retail trade, nonfarm agriculture, and construction). The examples of innovative activity described below from Blake's study emerged primarily in response to questions about the nature of the business and the contribution that the business owner felt that their business made, if any, to their community. From Hanson's study innovative activity was identified mainly in response to the question, “What do you see as innovative about your business?” Our goal is to use these interview data to explore and illustrate previously neglected facets of innovation, not to make general statements about the frequency of their occurrence among all businesses everywhere. Qualitative analysis allows us to preserve rather than dismember the complexity of the relationships between context and gender in innovation, an advantage that seems especially apposite in exploring the re-conceptualised understanding of innovation that we outline above.

Identifying innovation

It seems worth noting at the outset that only a small minority of the business owners (13%) in Hanson's representative sample replied that they saw nothing at all innovative about their businesses. In Blake's study, respondents' comments about the nature and contributions of their businesses centred largely on what the owners saw as new or unique in what they were providing to the market (that is, in what ways they were not

⁽⁹⁾ Note that they use the term value, which encompasses the social as well as the economic, contra Feldman (2000) who links innovation only to the “economically valuable”.

simply replicating an existing service or product). The fact that these business owners see themselves as innovative or providing something new or different to the market is important because it illustrates the wide range of innovative activity that can occur in places and in sectors not traditionally recognised as innovation rich.

Rather than providing an exhaustive list of the innovations that were identified in our studies, we focus the remaining discussion on two important and interconnected themes that illustrate the roles of geographical and social context in defining these innovations. The first concerns the importance of place: we found that local context and local scale linked closely to innovation; innovations happen somewhere and are delivered to specific markets, whether few or many buyers and sellers inhabit these markets. Place is, therefore, inextricably linked to the form innovations take as they enter the market as well as the process through which an innovation occurs. The second theme is that a person's social identity and personal experiences are a rich source of innovations that have the capacity to change the landscape of material reproduction fundamentally. Although place and gender are intertwined, we pull them apart somewhat in the following discussion. Our gender examples focus on women and the role that gender plays in fixing their positionality and shaping their experience. This is not to say that innovations cannot also come out of the unique circumstances of male positionality and experience or that other forms of social identity are not also likely to create opportunities for innovation.

Places of innovation

Popular advice to the would-be entrepreneur is to identify a need and fill it. The unspoken part of this aphorism is that most needs are defined spatially; properly revised, the adage should be, 'Find a need *somewhere* and fill it *there*.' Innovations that provide services or products that are new to 'here' meet particular needs that are defined by the circumstances of a place. We start with a business that provides employee assistance plans, a respite care facility, and a Mexican restaurant. In each case the innovator used local knowledge (that is, that a certain service was absent and needed 'here') to exploit a spatial niche.

The first example involves a 47-year-old man whose background in psychiatric nursing had led him more than ten years ago to start a business that provides employee assistance plans (EAPs) to municipalities, school systems, and corporations. The primary service offered by an EAP is confidential mental health and stress management counselling for the employees of enrolled clients. This entrepreneur first encountered EAPs while he was in graduate school in the Midwest, where he had gone to pursue a degree in public health when he decided to leave nursing. Returning to Worcester, his home town, to launch the business, he quickly learned just how new the EAP concept was to Central Massachusetts as local firms and agencies were initially resistant to the idea. Although it was two years before he had his first account, his clients now include most of Worcester's big companies and most of the local schools and colleges.

In our second example, a 55-year-old woman parlayed her experience as a nurse into a successful business venture by converting her large home into a respite care facility.⁽¹⁰⁾ She had been working in a nursing home while caring for her aged mother at home and was well aware that the region lacked any facility like the one she started. She points out that her respite care facility "allows people to keep their loved one at home and yet have a life of their own."

⁽¹⁰⁾ A respite care facility offers brief respite for people caring for others (for example, a handicapped child or an elderly relative) in their homes; without such facilities, caregivers often never have even an evening to themselves, much less a vacation.

The third example concerns a Mexican immigrant who came to Worcester in the late 1980s and launched an ‘authentic Mexican café’; her innovation was to make genuine Mexican cuisine available in Worcester for the first time. This woman explicitly set out to change the way people in Worcester perceive Mexico and Mexican cooking, to offer “not the tacos and chimichangas [Americans] have had before, but something totally different ... what I remember it like.” In addition to changing American perceptions of Mexico, her cooking fills a social/psychological niche for Worcester’s relatively recent Mexican immigrant population, who find that existing ‘Mexican’ restaurants do not satisfy their hunger:

“When Mexican people come here [to my restaurant], ... they think, ‘This is real. It really reminds me of when I was growing up.’ You can see in their faces that they remember something from back home when they taste something. That is what I would like to have for my customers because I do not see it anywhere [in Worcester].”

Indeed, had this owner opened her restaurant in a Southwestern US city, it is likely that her restaurant would not have been particularly innovative. It is because Worcester lacked any public expression of authentically Mexican culture that this woman’s business is innovative. That the owner was able to expand her customer base to the nonimmigrant population of Worcester speaks of her good management skills, the quality of the product that she offers, and her ability to convince New Englanders that they need authentic Mexican food, as opposed to Americanised Mexican food.

Under current conceptions of innovation in economic geography, the Mexican restaurant, like the EAP business and the respite care facility, would be classed not as an innovation but as a business that replicates other businesses (somewhere). Being the first to bring a product or service to a place seems, however, to fit the definitions of innovation we mentioned at the outset: “the creation and exploitation of new ideas” (Kanter, 2000, page 168) and “the novel application of (not just) economically valuable knowledge” (Feldman, 2000, page 373). In each of our three examples, the economically valuable knowledge was the entrepreneur’s familiarity with place, which fed the realisation that there was a particular need to be filled ‘here’. All three of these businesses contribute in important ways to the quality of life in Worcester. Other such innovations in our samples include an art shop that sells quality handcrafted goods and has helped to improve the tenor of a declining neighbourhood, a religious bookstore that ‘lends’ its books to be sold in churches after services and then shares the profits with the church, and a supermarket in a low-income neighbourhood where many residents lack cars and where no store selling fresh foods had been located for decades. These businesses all fill some place-specific local need where local may refer to the scale of a city, a neighbourhood, or a church catchment area. Moreover, these examples are not merely innovation diffusion, as their innovation involves recognising the place-specific need in the first instance and then developing a solution to that need.

In the above examples the business owners are co-local to their customer base. The next example involves a 47-year-old woman owner who similarly incorporates the local into her business but does so in a nonlocal way. This entrepreneur runs an executive recruiting firm that specialises in the life insurance industry. Her business is located in one of Worcester’s eastern suburbs, but most of her clientele is located throughout the USA and some are located outside the country. In 1995 this business reported a profit in excess of \$1 million and had twelve employees including the owner.

This entrepreneur understands the insurance industry as one that relies directly upon local conditions, because the type of insurance one may need is context dependent and therefore spatially variable—“life insurance has very different market places, and different companies’ products work better for different market places...”

Because of this understanding, she has incorporated the need for spatial specificity into the method that she developed to match executive recruits to her clients' (insurance brokerage firms) needs. Her firm meets her customers' needs by doing extensive market research in the cities where her clients are located and then taps into the firm's extensive networks

“to find the best people that fit the profile of the company we are working with... We match people with particular selling methods and licenses with the [client] company's market place. In our particular industry we are concerned with place because in the life insurance industry product distribution is geared by place.”

This entrepreneur's innovation is her incorporation of an understanding of the place-bound nature of her customers into the way that she delivers her product and the willingness of her firm to acknowledge variations in local context. She attributes her company's excellent retention rate—a key marker of success in executive recruiting—to her sensitivity to place-based differences and believes that her attention to place-to-place variation has enabled her firm to match potential executives to the needs of her client life insurance firms so successfully that she is “probably one of the major, if not the major, headhunting companies across the country.” So whereas the market of this woman's business is international, her clients remain in a sense very local, in terms of their needs as well as their positioning within her firm's networks, although the client is often not local to her location in the Worcester region.

These entrepreneurs all use knowledge about a particular place (or places) to identify an innovative business opportunity within a spatial niche, which may be local to the business owner or not. The success of these ventures often hinges on using (sometimes personal) knowledge about the attributes of customers in a place to tailor a product or process to that particular (place-based) market. Many of the business owners we talked with said that what was innovative about their business was that they were responsive to the *local* market, not to some generic market. Often this comment was followed by snide remarks about the large, chain, ‘big box’ stores, which are seen as catering only to a generic market. Unlike the chain store manager, these business owners recognise that business interactions are context dependent and in order to increase the value of their product or service and thereby offer something that is unique they must think geographically.⁽¹¹⁾

Whereas the above discussion illustrates the importance of place to the creation of innovation, our next examples are innovations that could be considered new anywhere. We use them to illustrate how capturing an extralocal market need not be part of innovation. Although the executive recruiter for the life insurance industry successfully captured a large-scale market while still offering a local service, her expansion is largely a result of the intersection between the geographically dispersed yet relatively small market the owner serves and her ambitions for the business. Our studies point to the key role of the business owner's goals, rather than the degree of innovation or the nature of the product, in delimiting the geographical extent of a business's market penetration. As examples we describe two woman-owned businesses that because of their temporal and social contexts offer products to just a local market. The first is a ten-year-old business that creates and maintains interior plantscapes for offices, restaurants, and the like. The owner had started growing vegetables for her own use, upside down in hanging pots many years ago in an effort to conserve table space in

⁽¹¹⁾ The two most frequent responses to the open-ended question “What do you see as innovative about your business?” posed in Hanson's Worcester interview sample ($N = 198$), were “high-quality service” (23%) and “personalised service” (21%); note that these categories may overlap.

her greenhouse. What began as a way to produce more fresh vegetables for home consumption in a limited space has become the calling card of her business:

“My one really big specialty is upside down hanging vegetables.... So we’ve been doing tomatoes and cucumbers and eggplant and peppers.... It’s kind of a unique thing and it’s become our specialty.”

The second business, six years old at the time of our interview, is described by the owner as “geriatric case management”; her customers are most often the adult children—now living far from Worcester—of elderly parents who remain in Worcester. This business, which now employs more than 300, offers the range of services to older people that many an adult child provides when he or she lives close enough to a parent in need: arranging for the sale of a house and the disposition of its contents, finding the appropriate nursing home, providing home health care and daily household maintenance, paying bills, doing tax returns, and the like. The owner, a single mother, got the idea for launching a business like this when she worked in the estate and trust department of a large Worcester law firm, where she had started as a \$3-per-hour file clerk. The novelty of her innovation is underscored in the reactions of her friends and colleagues to her proposed business idea:

“When I told them what I was thinking about doing, they all thought I was out of my mind. They did not understand.... Why would anybody pay somebody to take care of their mother?”

Although in each case the owner sees her business as being decidedly successful and each could vastly increase profitability through market expansion, neither one aspires to extend her market beyond the local. Their reasons for wanting to remain local differ. The inventor of the hanging vegetables wants to maintain control of her business and to combine family and entrepreneurship. The head of the geriatric case management firm sees the success of her enterprise as being inextricably linked to her local knowledge and her position in the local community. She feels that, without her networks and contextual positioning, the quality of the service that she offers would suffer even though she would make more money. In other words, the local nature of this woman’s networks limits the extent of the innovation, not the innovation itself.

These two entrepreneurs have introduced innovations that could easily be exported to other markets by these business owners or others, yet by virtue of their economic sectors, the choices of the business owners who had the initial idea, and the stage of the idea’s evolution, these innovations would not appear in standard research on innovation nor would they be recognised by policymakers as valuable to the development needs of a local economy. We believe that the lack of recognition of the innovative potential of businesses such as these is largely a result of the way innovation is currently defined and therefore valued, not because they are not innovative.

These examples illustrate that the value of an innovation needs to be viewed contextually in both time and space and in a way that decouples innovation from an export expectation. Furthermore, innovations occur within social contexts because they involve people. Business owners underscore the social nature of business transactions and highlight the entrepreneur’s need for knowledge about customers in place. The process of bringing an innovation to fruition and extracting value from it involves gaining access to resources and to information held by other people, finding a market, as well as gaining recognition of its usefulness. Because of these social relationships, the process of innovating is also likely to be gendered. We examine this aspect of innovation more closely in the next section.

Gendered innovation

The associations between embodiment and definitions of skilled work and between embodiment and the allocation of jobs result in striking gender differences in women's and men's labour-market profiles (Hanson and Pratt, 1995; Jensen, 1989; McDowell, 1997). Certain economic activities emerge as innovative specifically from an entrepreneur's embodiment—as young white woman, middle-aged Hispanic man, elderly African-American woman—because with embodiment comes positionality and experience that is tempered by the individual's social identity. Positionality means that some individuals, because of their identities, are seen as legitimate members of a group whereas others are not (McDowell, 1997). Furthermore, individuals experience the world through these positions of identity: The experiences of men are different from those of women. Here we focus on two gendered aspects of innovation: in the first, the entrepreneur launches a gender atypical business, and in the second the entrepreneur's experiences as a woman led her to promulgate innovative organisation strategies. Individually, innovations like the ones we describe may not lead to a sea change in the social order. Yet cumulatively within a place over time these innovations transform the ways that institutions classify people based on their identity and can lead to shifts in gender ideologies that would result in greater access to resources for nascent women entrepreneurs.

Women in gender-atypical businesses

Through the act of owning a business in a male-dominated industry, such as trucking, construction, or auto repair, women entrepreneurs can become innovators. Owning a gender-atypical business is innovative because the owner does not conform to an assigned gendered position. Although our discussion centres on examples of women, the point holds true both for women and for men.

Women business owners who seek to act as role models and to act out their atypical role successfully must overcome their illegitimate status. The women in our studies that did this most successfully exploited traditional understandings of gender to advance their enterprises.⁽¹²⁾ To illustrate this point we draw from two examples—a woman-owned construction firm and a woman-owned auto repair shop—among the many from which we could have drawn.

A 32-year-old general contractor specialising in property rehabilitations told us that perhaps the main barrier women face in gaining access to the construction trades is the difficulty of obtaining the appropriate training. She said that training typically starts when the tradesperson is still in his teens, and access to this training is largely closed to teenage girls. Although the institutionalised way that skills for the trades are constructed seems to limit women's involvement in this economic sector, the widespread perception of tradesmen as 'cowboys' who are unreliable, dishonest, and sometimes unskilled and the fact that these perceptions do not apply to women provides an opening for women in the field. This entrepreneur saw that she was able to build on feminine associations of trust, cleanliness, reliability, and an interest in making the customer understand what she was doing to overcome the barriers she faced as a woman working in a male-dominated field in which firms are typically perceived as not being concerned with such issues. By building on customers' perceptions of femininity, which in many ways are more positive than are prevailing perceptions of men in the trades, and by performing her task in a way traditionally associated with the feminine, she uses those identity-based resources to which she has access to offer a novel service.

Two women who own and operate an auto repair business offer another example of women innovating by venturing into male terrain. There is no mistaking the fact that

⁽¹²⁾ In like manner we found a couple of cases of men who were building on masculine attributes and associations to create gender-atypical firms, in one case a nail salon and in the other a beauty parlour.

this auto shop is owned and operated by women. A large sign proclaiming “With a Woman’s Touch” hangs above the outside door, which is painted bright pink. Like the contractor, these women are capitalising on associations of trustworthiness and honesty with femininity to create a successful business in a male-dominated arena.

“What we found in our market research was that when people heard ‘women and auto repair’ they instantaneously thought, ‘I can trust them.’ That is the biggest thing in auto repair, is being able to trust the person you are bringing your car to.”

Another innovative aspect of this auto repair business is that when they started their business in 1995 they specifically targeted women as their customers. Although targeting women is something that has been done by retail firms for ages, it is a new concept in auto repair. The reason this firm targeted women was because they felt that women were more likely to be taken advantage of or feel they were being taken advantage of by the auto repair industry. Furthermore, as more women enter the labour market, more women are taking responsibility for the care of their cars. They said, “We found that 10% to 20% of men picked out their auto mechanic [based on being able to trust the person who fixes their car], but 95% of the women thought that way.” These women are offering a service that specifically addresses what they see as the needs of their customer base and are trying to put that message across as loudly as possible (for example, with the pink sign and by teaching car maintenance seminars for women at the local community college).

These entrepreneurs also recognized that geography is gendered and this has important implications for the way that they chose to locate their business. Their strategy was to locate in an area where women are more likely to be employed and to be responsible for their auto maintenance. Their site was chosen over a location that would have been more convenient to their own residences, as each must commute more than twenty miles to their shop. This geographical understanding of their market has enabled these auto shop owners to reach a level of success sooner than would have been the case had they located closer to their homes, where they found much greater local resistance to the idea of women doing auto repair. Although they initially targeted women, they have found that their business has general appeal in this particular part of the Worcester metro area, which is culturally more familiar with women in non-traditional roles.

Innovations like these (women offering home renovations or auto repair, or like others examples we encountered—woman-owned trucking firms, computer consultancies, engineering firms, or manufacturing firms) undermine traditional gender ideologies and help to create legitimate opportunities for women in industries and places where women have been excluded. The existence of these successful businesses with women obviously performing gender atypical roles should enable future ventures by women in non-traditional industries to acquire the start-up bank loans that these women were denied. In fact, contra the bankers’ worries that women-owned businesses in these fields would not attract customers because customers would not see them as legitimate, the embodied nature of these innovations has proven to be a competitive advantage, enabling these business owners to capture market share in industries that are typically considered highly competitive. Moreover, by introducing trust and cleanliness into their economic sectors, these women entrepreneurs have fundamentally altered the way business is done in these sectors⁽¹³⁾.

When, however, the market does not know that such a firm is woman owned the innovative potential is muted. In one such case the woman owner of an appliance repair shop told us that she was running the business for her husband and made it

⁽¹³⁾ As such, these innovations correspond to the industrial evolution called for by Feldman (2000).

clear that her ownership status was nominal. She portrayed the business as a male-run firm in a male-dominated economic sector, with little to distinguish it from other appliance repair shops in Worcester. Because of this, there was nothing obvious in her day-to-day business actions or in her representation of the business that constructed her as the legitimate owner of a male-dominated firm and thereby doing something that would change expectations about women in her field. Her strategy may have been safe, but it was not particularly innovative.

Gendered experience

Whereas the previous examples describe how gender helps to define certain *products* as innovative, in this section we illustrate the ways that a business owner's gendered experiences, such as being a mother or a woman in the wage and salary labour force, can alter the *process* of offering a good or service along lines that are gendered. Because business ownership is culturally coded as male, the traditional model of management that is most widely used and taught in business schools is a masculine model (for a discussion see Boot, 1994; Swan, 1994). By incorporating ways of managing people that are learned in arenas that are often associated with women's work, such as the home, or are not typically considered management oriented, such as mothering, women are introducing process innovations into management. Importantly, these innovations are not necessarily rooted in technology, as was the introduction of Ford's assembly line for example.

A lawyer who also owns an antique shop spoke specifically about what she described as the "mommy model" of running a business and offered some insights into the ways she has innovated in the treatment of her staff. This business owner sees the "mommy model" as a network of relationships rather than a hierarchy:

"The mommy model works with the strengths and weaknesses of individuals rather than making individuals conform to a single ideal. This model is goal oriented rather than power oriented, meaning that the manager talks through problems rather than issuing information and is willing to shift hats rather than putting people in dedicated tasks. This type of manager will also take a back seat when necessary and does not always need to be the central figure. This type of manager tries to find out the strengths and weaknesses of everyone and bring all the staff along with them."

This woman gave examples of how she practises this form of management, one of which was how she was able to work with the existing strengths of an older employee with a good understanding of a sewing machine to overcome her fear of the computerised till.

A second example of organisation innovation comes from the owner of a firm that provides in-home health care; this woman, who had raised ten children, had worked for the previous owner of the firm for twenty years before purchasing it when it failed. She bought the business because "I was sure that it could be a profitable business if it were run properly." For this manager, it was a small leap from organising a family with ten children to running a business that employs 220 people, fourteen of whom are administrative staff, located in three offices in eastern Massachusetts. For her, correct management involves "running the business like a family... You find people to do certain things and you juggle the money situation." One aspect of her family management style involves valuing the contributions of her staff and recognising the staff's responsibility for those contributions. In real terms this translates into paying them a higher-than-average wage for what they do. She said, "I give them as much as I possibly can. I believe that the field people are the business, not me."

This woman's innovation, clearly based on her own identity, involves an unorthodox management style modelled on her experiences as a mother and her related conviction that her staff deserve to be well paid. Consequently, she is able to keep costs down by

retaining employees even in a competitive labour market. Perhaps more important in terms of community impact, she is also setting a precedent by paying people a higher-than-average wage in what are typically low-wage, female-dominated occupations, thereby acknowledging and increasing the value of these caretaking skills in the local labour market.

Management strategy is not the only place in which innovations stemming from gendered experience may occur. Because of the barriers she faced in getting formal training in the trades, the woman contractor now provides employment for teenage girls and a diverse group of other individuals, many of whom would not normally have the chance to work in construction:

“Right now I have a man I think until a year ago could not read. He is a carpenter. I have a student that is in college [studying] mechanical engineering. I have a kid who did not graduate from high school. I have a woman who just got out of jail. I am employing a workforce that nobody [in the construction industry] wants to employ ... Lots of construction companies only hire people with a lot of [construction] experience or who have gone through trade school.”

As part of her efforts to improve opportunities in the community, this woman has plans to offer more formal training through a local community organisation that aims to help low-income youth in an economically disadvantaged part of the Worcester region.

These examples of innovation—each of which is the direct outcome of the entrepreneur’s gendered experiences—link to a theme that pervades our interviews, namely that an important and oft-mentioned motivation for launching a business is the desire to create a better workplace, a workplace where there is opportunity for personal growth, where employees are treated humanely, and where workers (including the business owner) want to be. A signature characteristic of such a workplace is that it allows workers more flexibility in their work schedules. In the interviews the business owners themselves trace this desire to create a better workplace to their previous low status and mistreatment as (in this case) women workers when they were in the wage and salary labour market. Their experiences as women workers have led them to create innovative ways of running their businesses.⁽¹⁴⁾

In concluding this section on identifying innovation, we highlight two points. The first is that the local scale has an intimate relationship with innovation. For some entrepreneurs, capturing the place-specific nature of a market enables them to create a successful business whereas for others the social conditions within a place enable the initial introduction of the innovation. These place-inspired and place-based innovations yield a new service or product that enhances the economic well-being and quality of life in that place. Our second point is that, although the innovations we have described do not directly add to regional exports in the traditional sense, they are all associated with profitable businesses and they all exemplify outcomes that would not be considered innovative under prevailing definitions of the term. Moreover, the contributions of these business owners could be accepted as innovative if researchers and policymakers concerned with innovation were to pay more attention to the geographical and social location or context of economic activities.

⁽¹⁴⁾ A study by the National Foundation for Women Business Owners (NFWBO) provides broad support for the idea that woman business owners treat their employees differently from other business owners: “The most intriguing finding... is that women business owners appear to have a much stronger involvement in the professional development of their workforce and seem more accommodating to the special needs of their employees” (NFWBO, 1994, page 2). The NFWBO study finds, for example, that woman-owned businesses are more likely than are other small businesses to offer tuition reimbursement and flextime to their employees.

Discussion: implications for research, practice, and policy

Rethinking innovation so as to recognise the key role of geographic context, to include innovations that are not technological in nature, and to acknowledge how gender operates to enable or constrain certain innovative activities holds important implications for research and policy. In this final section we outline some of these implications. In particular, we describe how embracing a different conception of innovation could form the basis for a different understanding of regional and local economic well-being and thereby reorient local economic development practices. We consider first the implications for research and then offer some questions for those concerned with economic development policy.

Implications for research

In order to understand better how innovation contributes to the welfare of places, researchers need to broaden the scope of contexts, economic sectors, and actors that they consider as potential sites and creators of innovation. Research that aims to comprehend the full spectrum of innovation should include geographic contexts that are not necessarily characterised by an orientation toward technology. Through a few empirical examples, we have emphasised that context locates opportunities for innovation. By capitalising on their geographical and social contexts, some entrepreneurs are able to contribute to their communities in various ways currently unacknowledged and unappreciated by the export orientation of current innovation research. These contributions include meeting legitimate needs in the community (for example, for elder care), offering improved working conditions for employees, creating new employment opportunities for marginal groups, developing skills, and generating social cohesion (for example, via providing a community social space). Entrepreneurs are making these contributions in economic sectors such as construction, personal services, retail, and health care sectors that are usually not considered as likely sites of innovation. Because these contributions are nevertheless extremely important to the economic and social well-being of places, we suggest that, in order to understand the relationship between innovation and context, research should seek explicitly to study the full array of economic sectors.

Recognising that innovations can occur in any place and in any economic sector should mean recognising that innovators come in various forms of embodiment. Because of gender-based, age-based, and race-based divisions in the labour market, there is a strong relationship between social context and certain economic sectors of innovation. Women, for example, are more likely to start businesses—and therefore more likely to innovate—in retail and service industries than in other sectors. Research needs to explore the processes that link social identity, geographic context, and innovation in order to appreciate fully how innovation affects places.

Questions for policymakers

Because research and policy are so closely linked, rethinking innovation has important implications not only for research but also for local and regional economic development policy. As we have noted, prevailing understandings associate economic well-being with export-oriented, innovative activity. As a result, current LED practice gives considerable attention to attracting employers from elsewhere rather than to enhancing the innovative potential of resident entrepreneurs, especially those whose innovations would ostensibly serve only the local market (Raco, 2000). In view of recent shifts in economic regimes (for example, the decline in manufacturing and rise in services), we ask if this export-oriented focus is really the way forward.

Prioritising growth-oriented profits through technology rather than valuing, for example, equity or community well-being means that LED policy aimed at attracting

and fostering innovation also reinforces divisions within the labour market. These divisions are reinforced through the ways that resources are allocated (Clarke and Newman, 1997; Edwards, 2002). The current perceived association between innovation and export sales leads to resources being funnelled to a few firms in economic sectors where there are high rates of social division in the labour market. The majority of organisations that create jobs for workers in a place (for example, nonprofit organisations, government, locally oriented firms) are not participating in the pursuit of export profits. Yet dominant LED policy approaches overlook these employment-rich economic activities and end up channelling resources away from certain social groups, among them women. Given the increasing importance of 'secondary' wage earners to household economic security and the increased risk associated with employment (for a discussion see Irwin and Bottero, 2000), we ask if it is wise, let alone just, for economic development policy to exclude these groups from accessing resources aimed at promoting innovation.

The widespread emphasis on technologically intensive sectors and the insensitivity to the role of local context in innovation by economic development agents has resulted in a geographical fabric of economic development that is characterised by cookie cutter policy implementation. In this paper we have pointed to the richness of innovation that becomes apparent when innovation is seen as embedded within and defined by local context; indeed, what may not be innovative 'there' may well be innovative 'here'. Competition to attract a few key firms not only leads to winners and losers in the development game and to the potential for 'lock-in', which has proved to be disadvantageous, but also does not draw upon or foster place-linked innovative capacity. By overlooking the full scope of innovative capacity in a place, we believe economic development agents fail to take advantage of a potentially significant opportunity for promoting innovation. We ask how a geographical imagination might be integrated into economic development policies aimed at generating innovation. We believe that rethinking innovation by inserting geographical and social context could, therefore, underwrite a new approach to LED, which may, in turn, lead to alternative conceptions of development.

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