

12 Entrepreneurship, Projects and Actor-Networks. Reconceptualizing Small Firms

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Right from the start – fifty years ago – Rural Development Sociology in Wageningen has been distinguished by its inclination to mix practical and theoretical concerns in the study of rural transformation processes. For more than half a century now, Rural Development Sociology has taken its mandate – the study of agrarian development – broadly, and has focused on the wider technical, economic, political and social issues involved.

One of these issues concerns the role of rural, small-scale enterprise in the development of so-called Third World countries. Indeed, during the past five decades the study of small firms and of entrepreneurial behaviour have come to form one of the foundations of a 'Wageningen sociology.' All the way from van Lier's *Frontier society* (originally published in 1949), through Long's *Miners, peasants and entrepreneurs* (1984; together with Roberts), van der Ploeg's *Labour, markets and agricultural production* (1990), to my own, recent work (1992, 1997), small firms have played a fundamental role in giving shape to a unique agenda.

Perhaps one of the main reasons that small-scale enterprise figures so prominently in Rural Development Sociology at Wageningen is that their study permits one to address head-on the challenge of bringing together theory and practice. Indeed, for many years now, Wageningen sociologists maintain that any practice devoid of theoretical assumptions is simply unthinkable and that, by the same token, the *practice* of theorizing is as practical as any other activity. This position is splendidly exemplified in the case of the role that is attributed by policy makers and scholars alike to small firms in development. Thus, on the 'practical' side, policy makers invariably break their heads as to the appropriate measures to be taken in order to enhance (or diminish) small firms' share in the development process. But these measures (whatever their form) inevitably reflect moral, ethical, and ideological presuppositions that are hard to imagine in the absence of theoretical judgements. Likewise, on the 'theoretical' side, the academic community is often busy devising new explanations as to the way small firms should be understood, and prescriptions as to how they should be helped or hindered (a very practical activity indeed!). In turn, the explanations and prescriptions become stepping stones for policy formulation, and so on – *ad infinitum*.

Small Firms: A Slippery Category

As suggested in the introduction, small firms and their role in development have been – and, presumably, will continue to be for the next millennium – a central issue in the discourse of policy makers. More recently, this interest has been spurred by data on the remarkable importance of small firms' employment share in Third World countries, as well as by success stories about the ability of small firms to adapt to crisis situations in advanced economies.¹ Indeed, national and international agencies now dedicate a growing part of their resources to catapulting the new key units of economic development: 'small firms' and 'the region'. Thus new policy initiatives and programs promoting small enterprises in a regional setting now saturate government agendas almost everywhere.

The interest in small firms and their role in development has been paralleled in the disciplines of development economics and the sociology of rural development. Within these disciplines, studies of small-scale enterprises can be broadly assigned to one of two camps: those that are theoretically driven, and those that are more policy oriented. Common to both is the problem of 'the small': what counts as small-scale enterprise and what does not? And how should they be classified? Thus, for example, concepts such as 'small firms,' the 'informal sector,' or 'sub-sectors' abound. Although it is true, as Douglas (1992, p. 2) comments, that a field of enquiry can only advance by deciding what is relevant and what is extraneous to it, I argue that there are several reasons for objecting to ethnic types of classification. The main reason is that such definitions and classificatory schemes often hide more than that they actually clarify. And, worse, these classificatory schemata often go hand in hand with epistemological absolutism – an absolutism, I argue, which characterizes both policy oriented as well as theoretically driven research on small-scale enterprise.

In the case of policy-oriented research, this absolutism entails that there is only *one* way of knowing, namely the instrumental one that is geared to act upon the known. It is an epistemology that produces a discourse *on* the economic which, in Foucault's (1979) terms, attempts to construct and domesticate the identities of economic subjects. It is a discourse that is normally identified with the state, corporate agencies, NGO's and a range of other participants in (rural) development. A second, and arguably more important, effect is that categories and identities of economic subjects are thereby constructed. These are later used to intervene – to control the economy 'at a distance' (Latour 1987) – through tax legislation, specific accounting techniques, or structural adjustment programmes that impinge upon micro- and small-scale firms. But this absolutist epistemology is not only a way of knowing that shapes its object in order to be able to act on it. As Law (1991, p. 3) suggests in the context of studies of science and technology, it is also an epistemology that tells us – sometimes descriptive-

ly, more often prescriptively – how to go about gathering knowledge. This, in effect, implies taking on board normative . . . 'tool boxes' consisting of frameworks for classifying data, procedures for conducting oneself in the field, and methodological instruments for data analysis that are not linked to crucial research questions and theoretical concerns' (Long 1992, footnote page 15). The danger of some kind of methodological empiricism looms large, then, in policy-oriented studies of small-scale enterprise.

In the same fashion, most theoretically informed research on small-scale economic activity takes the side of the knower – though for different reasons. Here, methodological canons flow from the epistemological need to accord primacy to the 'external' forces that are seen to constitute the context within which small-scale enterprise develops. Generally, this takes the form of conceptualizing 'capitalism', 'industrialization', 'globalization' and the like as the driving forces, whilst small-scale enterprises are portrayed as being the driven and only able to 'fine-tune' to local intricacies. Clearly, within this view, small-scale economic activities only matter in so far they are connected, related, and translated in terms of their importance for supporting or refuting the 'laws' of grand narratives. And, like the epistemology of the policy-oriented camp, it tells us what the rules of method should be: the question of how, empirically, small-scale entrepreneurs shape, and are shaped by their socio-technical environment is abandoned or, at best, relegated to a secondary level of analysis.

What is needed, then, is another mode of understanding small firms, a vocabulary that brings forward that which remains hidden by slippery ethic concepts and absolutist epistemological precepts. An idiom that does justice to the *heterogeneity* of firms. A language that gives priority to the way in which this heterogeneity is constructed, and which involves manifold struggles, negotiations and accommodations over a broad range of issues that are crucial for the operation of firms. In short, a vocabulary of problem-solving that is willing to tackle head-on the challenge of understanding the *organizing practices* that arise from actors' wills to bring about desired changes in the running of their enterprises (Long and van der Ploeg 1994).

Small Firms and Development: Old Ways of Talking

Reconceptualizing the dynamics of small firms entails contesting a number of received notions about the role accorded to small firms in development. Historically speaking, explanations for this role diverge, depending on the specific model of the actor that is espoused. Basically, sociologists and anthropologists saw the role of small firms from the vantage point of *homo sociologicus* – the actor whose behaviour is norm – or rule-guided and thus, in principle, embedded in the daily flow of social relations (Granovetter

1985). This position entailed that economy and society evolved from local, existing relations of reciprocity and redistribution. These relations were seen to form the basis for the operation of small firms, and provided them with decisive advantages in situations of structural instability and erratic market conditions – a characteristic of Third World economies. Thus by the mid-1950s, strong arguments in favour of small enterprises had already been confirmed; these included labour intensiveness, adaptability, advantageous utilization of local production factors, reduced dependence on imports, and their role in providing a seed-bed for indigenous entrepreneurial development (Schumpeter 1934).

Economists, for their part, explained the role of small firms in development by adhering to the assumption from classical economics of the existence of *homo economicus* – the rational, atomized, self-interested individual who is minimally affected by social relations in his/her market competitive behaviour. This assumption led to the view that the market was separate and autonomous from social conditioning. This position – which has been labelled as the 'market paradigm' – entailed that the market was the dominant form of social behaviour, and that in fact social life was itself a subproduct of market interaction (Mingione 1991, p. 5). This in turn meant that any form of economic activity which was defined by social obligations was sub-optimal, and thus only a temporary stage on the way to a 'natural' state of affairs in which economic transactions were governed by the rational calculations of individual actors pursuing their own gain.

In the context of theories of economic development, especially in Third World regions, the force of this analytic model based on the market paradigm proved formidable, paving the way for the discursive construction of so-called 'underdeveloped economies.'² Indeed, the model was pivotal for the division of a country's economy and social life into two sectors: one *modern*, the other *traditional*. From this point of view, development consisted of the progressive encroachment of the modern upon the traditional. According to this understanding, rapid modernization and a 'take-off' (Rostow 1963) into self-sustained growth could only be achieved by a strategy of accelerated industrialization based on large, capital-intensive, enterprises that utilized modern technology. This image soon found its way into national governments, the United Nations, the ILO, the World Bank and the IMF.

The effects of this conception were immense since tradition was equated with economic backwardness. As a consequence, the 'traditional' sector was at best seen as playing a transitory role leading towards a higher stage of development – and thus only needed in countries that were passing through an early phase of industrialization. It was expected, or hoped, that in the course of economic maturation, small firms would gradually decline in favour of large-scale businesses. At worst (Lewis 1954, quoted in Escobar 1995), the so-called 'traditional' sector was thought to

make no contribution whatsoever to the process of development and should, therefore, be obliterated as soon as possible if economic growth was to occur.

By the early 1970s it became evident, however, that something was wrong with the prediction that development based upon the modernization model would bring about equity and progress for all. Vast and growing discrepancies in real-term incomes both within but also between countries became more apparent. Together with this trend, a large increase in the number of small-scale economic activities co-existing alongside large enterprises could be observed. This of course posed an insurmountable problem to proponents of the market paradigm (Mingione 1991). Indeed, for a large and growing part of Third World populations it was only the fact that market relations were deeply embedded in relations of reciprocity and redistribution that made life minimally bearable. This evidence brought about the collapse of the model of atomized, individual competitive behaviour as independent from the moral, ethical, and religious principles inherent in local social institutions. As it turned out, the very idea (and idealist position) that an analytic concept such as *homo economicus* could control or grasp an object situated 'out there' in 'The Economy' was doomed to failure. Consequently, new theories were designed, tested, overhauled, provided with fashionable *neo-* or *post-* prefixes, or simply abandoned to their fate on the 'garbage heap of history.'

Today, when opening the file on theories of small firms, one can characterize three different positions. A first line of (policy-oriented) research stresses the dynamic and sheltered potential for economic expansion and employment inherent in small firms. Indeed, at the beginning of the 1970s, there was an increasing awareness that most developing economies could not incorporate the growing urban labour force into the labour market – despite the fact that some countries were achieving prolonged periods of high growth rates. This realization was accompanied by a reemergence of the issue of the role of small firms in the development process. The increased attention to small-scale economic activities reached a climax with the concept of the 'informal sector,' promoted by the ILO's Kenya report (1972),³ and referring to those small-scale economic activities characterized by 'family ownership, small scale of operations, use of labour-intensive production methods and adapted technology, reliance on indigenous resources, unprotected labour, ease of entry and unregulated and competitive markets' (ILO 1972, p. 6).

Alternatively, a second line of (theoretical) research emphasizes the explanation and/or understanding of small-scale economic activities in relation to capitalist and traditional modes of production; as well as the structural position of small firms in regimes of accumulation and regulation – both in the First and the Third World. This approach replaces the formal/informal dichotomy with a model conforming to the variable

articulation of capitalist and non-capitalist forms and modes of production within the context of concrete social formations (Prattis 1987, p. 31).⁴ The main argument here is that petty or small-scale enterprises cannot reproduce themselves without some involvement in commodity circuits, and that the general 'logic' governing economic life and livelihood strategies is that of capitalism (Long 1986, pp. 12–13). This insight appeared to be corroborated by a wide body of evidence stemming from the patterns of uneven growth that characterized the Third World in the 1960s and early 1970s, and which had produced an expansion and diversification of different forms of small-scale enterprise which could not be interpreted as transitional or residual (MacEwen-Scott 1986, p. 3). The major achievement of this approach is that it contradicted the prediction that small-scale, non-capitalist enterprises would in the long run wither away in the face of capitalist expansion.

A third, and more recent line of research on small firms is that advocated by proponents of the flexible specialization paradigm who take a middle-of-the-road position between practical and theoretical concerns. The model of flexible specialization was originally advanced by Piore and Sabel (1984), who contrasted it with the model of industrialization based on a Fordist type of production organization. These authors argue that deteriorating industrial performance in a number of Western countries results from the limits of rigid, mass production systems, in which mass goods are produced using standardized machinery and unskilled workers. As an alternative, Piore and Sabel propose the flexible specialization model. In particular, they emphasize the decentralization of big factory chains and redeployment of productive forces into small units that can take advantage of flexible technologies. This, they argue, would enable crisis-ridden economies to react to ceaseless changes by introducing manufacturing systems capable of making specialized goods using multi-purpose, flexible machinery and skilled labour (Hirst and Zeitlin 1991, p. 2). Despite its Western genealogy, the application of the flexible specialization model for the Third World has been explicitly discussed by Schmitz (1990) and a number of colleagues (Pedersen 1989, Späth 1993; Sverrisson 1993).⁵

Some Shortcomings in the Theoretical Discourse on Small Firms and Development: Essentialism, Dualism, Reductionism

In spite of the advances booked in the theoretical understanding of the role of small firms in development, a number of epistemological assumptions made by the different positions have been too easily overlooked and consequently escaped systematic scrutiny. In fact, the three new theories dealing with small firms discussed above are, to a greater or lesser extent, based on the same triad of assumptions that were made by the moderniz-

ation model they criticize. The first assumption is often referred to as *essentialism*. As Woolgar (1988, p. 55) contends, essentialism underlies the metaphor of scientific discovery,

'... the idea of dis-covering, [which is] precisely that of uncovering and revealing something which had been there all along. One removes the covers and thereby exposes the thing for what it is; one pulls back the curtains on the facts. The image derives in part from the notion of geographical discovery. One travels to a distant place and finds (comes upon or otherwise stumbles over) what was already there. The crucial part is the prior existence of the discovered object.'

A case in point is the discourse that has constructed the notion of 'under-developed areas'. For example – and following classical economics – development economists assumed that 'Progress' was an attribute of 'Nature.' In other words, progress was seen as a natural state of affairs.⁶ This essentialist idea in turn prescribed the task of science as that of 'discovering' the pattern in which 'progress' unfolded, and recommending policies that would hasten its inevitable attainment (Greenfield *et al.* 1979, p. 6). Note, however, what this entails. Linearity is built into the analysis by equating economic progress with Nature; this linearity has the effect of bringing about a lack of fit between economic discourse *on* the economic subjects, and the practices *of* these subjects themselves. Indeed, flesh-and-blood social actors always present essentialist discourses with a significant surplus of meaning which cannot be explained away by elegant theoretical models.

Crude essentialism, however, is not the exclusive right of theories of economic modernization. The articulationist school could just as well be taken to task. Authors such as Meillassoux (1981) – who tries to explain the survival of pre- and non-capitalist relations of production as a structured feature of capitalism – make the essentialist assumption that something like 'capitalist' and 'precapitalist' relations of production actually exist, independent of the scientific gaze. In more or less the same fashion, studies of the informal sector and flexibly specialized firms make the essentialist assumption that formal and informal sectors, Fordist and post-Fordist production regimes exist, and that it is their task to discover and document their changes and transformations. Yet what does not dawn on proponents of such models is the possibility that 'essences' such as 'capitalism,' 'formal sectors' or 'post-Fordism' only reflect their classificatory practices, rather than the 'actual' or 'objective' character of the phenomena they wish to explain. After all, before one can meaningfully start talking about such essences as 'the economy,' one needs to make visible the invisible world of exchanges. As Latour (1990, p. 38) argues, 'the economy' is plainly invisible as long as cohorts of inquirers and inspectors have not filled in long questionnaires, as long as answers have not been punched onto cards, treated by computers, and analyzed by

economists. It is only at the end of all this that an aggregate hybrid called 'the economy' emerges from the piles of charts and lists. Existence, then, is prior the essence: before 'capitalism,' 'Fordism' or 'informal sectors' become essences, they need to be constructed.

A second – and related – assumption often made in theories about the role of small firms in economic development is that two different types of economies exist within one single spatial configuration. This is usually called *dualism*. Clear-cut examples include explanations that locate small-scale economic activities within the realm of 'the traditional' (Boeke 1953), the 'bazaar economy' (Geertz 1963) or the 'informal sector' (ILO 1972), while large firms are seen to be located in the so-called 'modern' or 'formal' sectors. Common in these dualist theories is the idea that each segment of the economy is homogeneous and possesses its own principles for the organization of production, distribution and exchange. The case of the articulationist school⁷ goes somewhat in sidestepping the pitfalls of crude dualism by treating capitalist and non-capitalist relations of production as *relational* categories. Nevertheless, the perspective remains dualist by taking capitalist and non-capitalist relations as a point of departure – no matter how relational its treatment thereof. Likewise, the flexible specialization model is essentially dualist in its aim to demonstrate the displacement of mass production by flexible specialization as the dominant technological paradigm. This, as Sayer and Walker (1992, p. 199, quoted in Murdoch 1995, p. 741) argue, hinders recognition of the fact that '... industry has always combined flexibilities and inflexibilities' and that such combinations 'cannot be grasped by inflexible dualistic frameworks which counterpose the old as the inflexible to the new as flexible.' Here, indeed, we find one more instance in which economic subjects (industry; firms) confront theoretical models with a surplus of meaning.

It would certainly be fruitless to negate the impact that dualistic conceptualizations have had on social relations at a global level. Indeed, the divides are painstakingly enforced by international organizations, economists, bureaucrats and even the police. But the point is this: the divides created by dualist theories do not represent any natural boundaries. They may be useful for teaching or intervening in one form or another, but they certainly do not provide any explanation. On the contrary: these divides are themselves the very things to be explained (Latour 1990, p. 20).

Next to essentialism and dualism, another common assumption in need of demystification is that of *reductionism*. Reductionism is closely related to the modern-traditional dichotomy in the sense that, by splitting one pole from the other, one of them (often the traditional) is made remote or reduced.⁸ However, as Law (1994, p. 12) stresses, one should note what is entailed in reductionism:

'First, you need to draw a line between two classes of phenomena by distinguishing those that drive from those that are driven. And second

you claim that the behaviour of the latter is explained – often you say caused – by the actions of the former. So the danger is this: that you . . . [drive] a wedge between those that are doing the driving and the rest. And (this is the real problem) the former get described differently, or not at all. So reductionism often, perhaps usually, makes distinctions that may come to look strangely like dualisms.'

Reductionism becomes apparent in the flexible specialization model and in most studies of the informal sector. In the case of the former, the 'driver' takes the specific form of the political, economic and institutional environment which has been constructed by large private or public enterprises, and which is rarely supportive and often discriminatory (e.g., Späth 1994). Here the institutional environment is already identified as the driver, and the internal organization of the firm thus automatically becomes the driven. Similarly, most informal sector studies see informality as dependent and subordinate – or indeed a response to – the formal sector. Here, again, a wedge is placed between the driver (conditions in the formal sector) and the driven (economic behaviour in the so-called informal sector). In the same vein, within the articulationist school it is argued that market forces – in the form of commoditized relations – increasingly shape individual economic decisions (e.g., Bernstein 1986; Hart 1982). Once again, a lever is forced between the driver (market forces) and the driven (decision making). This is not inconsequential since such an assumption deals inadequately with the non-commoditized side of the equation, introducing an asymmetry into the analysis which, in the end, leads to an unwarrantably linear view of change. A related consequence of conceiving of commoditization as the motor of change and decision making is that the sphere of production is prioritized over and above the work and the networks needed to sustain and reproduce household and/or enterprise labour, the social organization of consumption, or the importance of gender relations in the actual structuring of the labour process (MacEwen-Scott 1986; Pahl 1985; Whatmore 1988, p. 248). Another effect entailed in reducing individual decision making to 'market forces' is that much of the cultural and ideological dimension of petty commodity production, distribution and exchange is made invisible. Moreover, if commoditization is seen as the driving force, and actors are assumed to be no more than passive mediators in the process of commoditization itself, one can never bring into the picture what the commoditization of the different moments of production, exchange and consumption might mean for the enterprising practices of the actors concerned (Long 1986). Blindness to these issues leads to the unqualified conclusion that market integration opens the road to the individualization and atomization of the social environment of small-scale entrepreneurs who, consequently, only maintain commoditized extra-household relations. In this case, reductionism prevents one from taking into account inter-household

cooperative strategies, or the way in which actors help one another in organizing their respective enterprises, often through non-commoditized relationships.

Towards a Reconceptualization of Small Firms: *Collectifs* and the Fluidity of Context and Content

To summarize the previous sections: in order to reconceptualize small firms, it is necessary to sidestep two crucial problems inherent in both economic and sociological approaches. The first problem concerns the debate between formalists, who maintain a preeminence for *homo oeconomicus*, and substantivists, who persist in championing the salience of *homo sociologicus*. This dualistic debate, which runs like a thread through the discussion of the role of small firms in development, needs to be replaced by a perspective that favours the continuity between the economic, social, political *and*, in addition, the technical domains. These domains or spheres need to be analytically brought together in order to open up new theoretical gateways. What this means is that it is not enough to look at the *social* (economic, political, religious) features that tie people together, but that we must also look at the *technical* aspects that hold together the social.

To go beyond this first problem – the separation between the 'social' and the 'non-social' – one needs to acknowledge that this division is first of all in the minds of analysts – analysts who, instead of following entrepreneurs as they weave their way through a disorderly horde of human and non-human allies, prefer to make up a double register where, on one side, humans are paired with humans and, on the other, all the non-human elements of the strategies they have to explain are lumped together. To get rid of this fixed ontology which is spanned, on the one hand, by people and, on the other, by things, I advocate a body of work developed in the context of the sociology of science: actor-network theory. Following Bijker and Law (1992, pp. 12–13), this theory represents an attempt to find a neutral vocabulary to describe and explain the actions of what Law (1987) dubs 'heterogeneous engineers.' The main idea is that these 'heterogeneous engineers,' such as small-scale entrepreneurs, build disorderly networks composed of social, economic, political and technical elements,⁹ and that it makes little sense to separate *a priori* the human from the non-human elements of these networks.

Actor-network theory, then, helps to avoid making the commonsense assumption that people (entrepreneurs) and things are naturally occurring categories – the first endowed with agency, the second devoid of it. Thus, as Latour (1994, p. 46) proposes, purposeful action and intentionality are not properties of objects, but neither are they properties of human actors. Rather, they are the properties of institutions, of *collectifs*.¹⁰

To argue for the incorporation of non-humans into the analysis of *collectifs*, however, poses its own obstacles. Witness, for example, the debate between sociologists and economists on issues that have to do with the relationship between technology and society. This debate, driven by proponents of 'technological determinism'¹¹ and 'social determinism',¹² can go on forever as long as the common assumption is made that both society and technology exist independently of each other. Similarly, there is a fierce battle underway between British and French sociologists in the sociology of science¹³ over the issue of where to place the exact divide between humans and non-humans.¹⁴ If one assumes – with the French – that no two different ontological categories (people and things) exist but that, rather, humans and non-humans are fused in *collectifs*, then surely 'traditional' definitions of collectives or of institutions (such as small firms) are of little help for the simple reason that they cannot accommodate the constitutive role of non-humans.

The second problem one should address when reconceptualizing small firms is that of the triad of assumptions usually made: essentialism, dualism, and reductionism. Here, too, actor-network theory may offer useful insights. For example, it avoids making essentialist assumptions about a backdrop of social, economic or technical factors: it says that the backdrop is something that is itself built in the course of building a network. Likewise, it suggests that it is misconceived to think that entrepreneurs operate in a world given by naturally occurring (dual) categories or essences such as 'content' or 'context.' Also, it says that it is too simple to argue that context is shaped by, or influences, content (and vice versa).¹⁵

As I argued above, the danger of essentialism (the existence of a context and a content that set the stage for entrepreneurial activities and which can be known *a priori*) is that it easily develops into reductionism of one form or another. Thus context 'drives' content (agents can only make local adjustments in a context established long ago), or content 'steers' context (interacting agents continuously create unplanned events which cannot be explained by virtue of what happened before or what occurs elsewhere). To counter the danger of reductionism, I suggest that one treats small firms as 'balancing acts' in which social and technical elements both from 'within' and from 'without' the firm are placed side by side.

Bridging the Gap: Global Networks, Local Networks, and Obligatory Points of Passage

As stated above, the idea that one can follow small firms or entrepreneurial projects as they unfold in a given context that is separate from the content of the projects themselves is problematic. The strategies of firms

often, if not always, turn first around the creation of a distinction between inside and outside, and second upon ensuring that whatever is inside becomes indispensable for those on the outside in a way that is analogous to one of the main findings of the history and sociology of science (Bijker and Law 1992, p. 304). What is needed is thus an analytical tool that allows for a description of the interrelatedness of the trajectories of firms and the co-evolution of their socio-technical context and content. Below, I develop a network metaphor to understand these processes.

According to Law and Callon (1992, p. 46), the trajectories of projects can be seen as a function of three interrelated factors. The first function is the ability of a project to construct and preserve a *global network* that is intended to contribute resources to the project. These resources may be of various kinds: money, permits, political support, machinery and so on. The global network provides these resources because it expects a return. When a global network is successfully put together, the entrepreneur obtains room for manoeuvre (a negotiation space) in which he or she can experiment at will – as long as the possibility of a return remains present.

The *second* function is the capacity of the project to assemble a *local network* by mobilizing the means contributed by the global network.¹⁶ Again, the purpose of using these resources is to be able to reciprocate to actors from the global network (this may generally take the form of some sort of material or economic return, but need not necessarily be so: cultural objects of symbolic value may also flow from the local to the global network). If successfully constructed, a local network thus allows its originator(s) to experiment with and control the means provided by the global network, with the ultimate goal of offering a return of some kind to the different actors composing the global network.

The *third* factor is the degree to which an entrepreneurial project succeeds in imposing itself as an *obligatory point of passage* between the global and the local network. This means that, if successful, the project should first have the ability to shape and mobilize the local network and that, second, the project is able to exercise control over all exchanges between the local and the global network. In other words, if actors from the global network count on or have an interest in a promised final return, then the producers of this return (and the material, economic, or cultural return itself) become an obligatory point of passage. If unsuccessful, that is, if unable to impose itself as an obligatory point of passage, an entrepreneurial project cannot profit from the local network, and nor does it have command over the use and mobilization of resources from the global network (which may ultimately be withdrawn).

Apart of their theoretical relevance, the notions of global and local networks and obligatory points of passage are also of practical importance for they permit an evaluation of the viability of specific firms or networks of firms. More precisely, these terms offer the advantage of avoiding observer-defined accounts of viability. Thus one can sidestep economists'

definitions of viability which refer to a break-even point, or sociologists' cherished notions – difficult to operationalize – of 'social security' or the 'potential' of firms to reproduce themselves in time. Nor does one have to deal with tortuous definitions of 'sustainability' – as is usual within 'green' circles. In addition, the notions of obligatory points of passage and global and local networks allow viability to be conceived of as a temporal condition: whenever support by a global or a local network is withdrawn a firm ceases to act as an obligatory point of passage, and loses viability.

Morphology of *Collectifs*: Convergence and Momentum

Global and local networks – *collectifs* – may stand in a specific relationship with one another, that is, they may be differently articulated. Another way of putting this is to say that *collectifs* may have multiple morphologies. Thus the entities making up these *collectifs* may converge or diverge, be more or less standardized, and their relationships may be long- or short-lived to different degrees.

A useful concept for estimating the morphology of a *collectif* is that of *convergence*¹⁷ or the degree of integration of a *collectif*. In a situation of convergence, for example, the activities of all actors from the global and the local networks can easily be linked to each other and each actor can in principle mobilize other actors. In other words, any actor belonging to the *collectif*, whatever her position within it,

'. . . can at any time mobilize all the network's skills without having to get involved with costly adaptations, translations or decoding. The [*collectif*] as a whole is behind any one of the actors who make it up.' (Callon 1992b, p. 223)

Convergence within a *collectif*, of course, does not mean that actors consciously work towards a common objective. Rather, it means that actors have sufficiently fine-tuned their activities so as to make them compatible with those of other actors from the same *collectif*. This, of course, need not always be the case. In such a situation, then, it would be more meaningful to speak of divergence: cooperation between actors is unlikely or limited. This latter situation – divergence – can be illustrated through the example of the street food vendor in Mexico (see Verschoor 1997). After having eaten at a stall, a client develops intestinal disorder and complains to the food stall vendor. Here the vendor has a choice between three modes of action. First, he may take responsibility for the damaged intestines by acknowledging the cause of the complaint. A second mode of action – the one followed most often – is for the vendor to contest the accusation: what makes his client so sure that the vendor's food is responsible for the disorder? Could it not have been something else? Did the client wash her

hands before eating? In this (second) case, the clients' definition of the vendor as the responsible party is contested, and does not converge with the definition of the problem according to the vendor. The translation is thus incomplete. The third alternative is for the vendor to accept the charge – for example because more customers have come to him with the same complaints – but delegate responsibility to others within the *collectif*. For example, the vendor can take the complaint to the abattoir. There, the criticism can only be translated into a solvable problem if there is a management system that allows for tracking down the origin of the meat sold to food stall vendors. Since this is not usually the case, turning the complaint into a solvable problem is ruled out, and the client's accusation simply does not find a target. Here the interdefinitions of the actors involved conflict with one another: the actors participate in a dispersed network. As a consequence, cooperation between them may be unlikely or limited.

Small firms, then, participate to varying degrees in *collectifs*, which may have different degrees of convergence. In order to gauge these degrees of convergence, one can use the related concepts of *translation* and *coordination* (Callon 1991, 1992). By translation is meant the process whereby global and local networks are composed and obligatory points of passage created – in other words, the process that creates a shared space that was absent before the initiation of a project.

The process of translation can, for analytical reasons, be separated into four moments (Callon 1986): *problematization*, *interessement*, *enrolment* and *mobilization*. Problematization is the process by which a project becomes indispensable to global actors by defining the nature and the problems of the latter, and then suggesting that these can be resolved by following the path of action suggested by the project. The next step, *interessement*, are those methods by which the project attempts to impose and stabilize the identity of the global actors defined in the problematization. In other words, *interessement* is the process of translating the images and concerns of a project into that of a global network, and then trying to discipline or control that translation in order to stabilize an actor-network (Star 1991, p. 33). As already stated, these actor-networks include people, the built environment, machines, signs and symbols, inscriptions, and so on. *Interessement*, however, does not necessarily lead to alliances, that is, to actual enrolment. *Interessement* achieves enrolment if it is successful. Describing enrolment is thus to describe the group of multilateral negotiations, trials of strength and tricks that accompany the *interessements* and enable them to succeed. Enrolment, in other words, is the successful distribution of roles as proposed (and most probably changed) by the project in the initial problematization. Finally, if *interessement* is successful, that is, if enrolment has been achieved, then one can speak of the mobilization of the network of entities involved. Put somewhat differently, mobilization means the successful translation of a network of entities: a

global network provides resources for an expected return, a local network is created that allows some room for manoeuvre for the project to supply this expected return, and the project itself becomes an obligatory point of passage, that is, it is able to exercise control over all exchanges between the local and the global networks. Translation, then, involves all those methods by which a specific definition of a problematic situation – its character, cause and probable solution – is construed and made indispensable for others to follow.

Next to translation, a second concept that is useful to measure the degree of convergence of a *collectif* is what Callon (1991, 1992) terms *forms of coordination* or *translation regimes*. This refers to the existing set of rules and regulations that have been produced in past interaction, and which impinge on the character of any *collectif*. So, for example, who or what counts as an actor, or who or what may speak on behalf of others, is normally laid down in a series of rules and conventions that range from formal law to tacit and culturally specific practices. Some of these rules and conventions are of a general character. Examples could be the passing of a Federal Health Law, the requirements to obtain a loan from a bank, or the conditions of payment for merchandise specified in a contract. Yet other rules and norms are of a more 'local' character, that is, they lose their validity outside the *collectif* that produced them. Examples could be agreements between producers of specific commodities about pricing policy; the creation of local organizational forms such as associations or cooperatives; or the technical norms concerning the production of particular goods.

The distinction between general and local rules and conventions is important because it helps one to discern the specific form of coordination of a *collectif*. So, for example, Callon (1992, p. 87) suggests using the term *weak coordination* to 'characterize a network which has not added on any local rules and procedures to conventions generally followed at any given moment.' Inversely, the term *strong coordination* can be used to denote a *collectif* shaped both by local and general rules.

It should be clear from the above that a combination of the concepts of translation and translation regimes can be helpful devices for 'measuring' the degree of convergence of a given network. Indeed, the stronger the translation and the form of coordination of a given *collectif*,

'... the more the actors composing it *work together in a common enterprise*, without their status as actors being under constant challenge. This does not mean that everyone does the same thing. Rather it quite simply means that any one actor's activities fit in easily with those of the other actors, despite their heterogeneity.' (Callon 1992, p. 87; emphasis added).

Next to convergence, a concept that is of central importance to gauge the morphology of a network is that of *momentum*. This concept refers back to

that of translation, and suggests that the latter has been 'locked into place'. According to Callon (1991, pp. 140–50), the momentum (which he terms 'irreversibility') of a translation depends on two factors: (a) the extent to which it is subsequently impossible to go back to a point where the translation was only one amongst others; and (b) the extent to which it shapes and determines subsequent translations.

To exemplify the notion of momentum, let us take the example of a producer of a specific good who opens a credit line at a bank. Once the operation is legally sanctioned by some form or document, it becomes difficult if not outright impossible for the parties to withdraw from the agreement and go back to the beginning of the transaction – when multiple alternatives for obtaining credit may have been open for the producer. At the same time, the credit line may shape future decisions: specific goals that were impossible to achieve without credit can now be pursued.¹⁸

In a sense, then, momentum denotes the way in which the past engages the future.¹⁹ More generally, *momentum* has to do with the evolutionary process in which a project passes from a stage of uncertainty to a stage in which certain trajectories stabilize. Put differently: it is how heterogeneity makes place for homogeneity. This is often the case when a project is successful, that is, able to present a result: when ideas (which are debatable) make way for finished objects (which are less debatable).

Prime Movers, Distributed Action and Black-Boxed Actors

So far, I have argued that the notions of global and local networks and obligatory points of passage can help one to illuminate issues to do with the dynamics of small entrepreneurial projects without having to resort to externalist explanations. One important additional point is that it is not necessarily people, but also *things* that could be the obligatory points of passage between a global and local network. This point can be generalized through the notion of *intermediary*. As the etymology of the word implies, inter-mediaries mediate between two or more parties, thereby constructing a whole, a common space, a network or a *collectif*.

The notion of intermediary is useful because it brings together the poles of Economy and Society (the separation of which, I argued, inhibits rather than illuminates the practices of small firms). How is this possible? Callon (1991) suggests that this can be achieved by juxtaposing the insights of economists and sociologists. 'The Economy,' for example, as defined by economists, is that domain in which people are brought into relationship with one another through the exchange of *things*. Translated into my analytical framework, a project often relates a local and a global network via a product. According to Callon (1991, p. 134), this situation can be generalized by means of the notion of an *intermediary*, which 'is anything

passing between actors which defines the relationship between them. Examples of intermediaries abound: texts, skills, money, and all sorts of technical artifacts. The list is endless.

Contrary to economics, in sociological theory 'Society' (the behaviour of actors) can only be understood when it is set in a context that has been built by the actors themselves. Thus sociologists speak of roles and functional prerequisites, agents and fields. In fact, or so these disparate sociological theories suggest, no actor can be isolated from the relationships in which he or she is implicated. What does this mean in terms of creating a common space between Economy and Society? Here Callon (1991, p. 135) presses the point to its logical conclusion:²⁰

'Economists teach us that interaction involves the circulation of intermediaries. Sociologists teach us that actors can only be defined in terms of their relationships. But these are two parts of the same puzzle, and if we fit them together we find the solution. This is that *actors define one another in interaction – in the intermediaries that they put into circulation.*'²¹

When successfully translated, actors are able to communicate through the intermediaries that circulate between them and which define both of them simultaneously. For example, any product passing hands between a vendor and his client simultaneously defines the identity of both in that encounter: the vendor as the seller of a service, the client as the buyer of it. In this case, the degree of convergence is strong because the translations (both by the vendor and by the client) are relatively similar. Of course, successful translation need not always take place, or may only be weak in character. Taking the same example, this would be the case when the client doubts the quality or the value of the product and refuses to buy it.

To summarize: entrepreneurial projects try to construct and set in motion local and global networks, and they may become obligatory points of passage between the two networks through the circulation of intermediaries. This, however, leaves one with the problem of who or what is the prime mover of the *collectif*. Asking who the prime mover of action is, however, is a matter of convention, and depends on who or what one chooses to follow. Indeed, authorship of action can in principle be attributed to different entities. Action, I suggest, is a polycentric process. Likewise, within our framework the notion of 'actor' does not refer back to some fixed essence (such as, for example, the capacity to 'have' agency). Rather the identity of an actor is relational, and refers back to notions of sociality *and* materiality. Indeed, as Latour (1994, p. 33) suggests, neither subject nor object are fixed entities. Both change their properties when they become a gathering, a *collectif*, a hybrid actor made up of people-and-things.²² Responsibility for action is, in other words, distributed, and not caused by a human (or by a non-human, for that matter). Action is rather a composition of relations between associated entities. As Latour (1994, p. 35) succinctly puts it:

'The attribution to one actor of the role of prime mover in no way weakens the necessity of a *composition* of forces to explain the action. It is by mistake, or unfairness, that our headlines read, 'Man flies,' 'Woman goes into space.' Flying is a property of the whole association of entities that includes airports and planes, launch pads and ticket counters. B-52s do not fly, the U.S. Air Force flies. Action is simply not a property of humans but of an association of actants. . . .'

But how come we do not see these compositions for what they are, that is, impure hybrids of the social, the technical, the political, the economic and all the rest? Why is it so difficult to talk in terms of these *collectifs*? How is it that we prefer to make reference to punctualized actions, to black-boxes, instead of describing the complexities that are part and parcel of *collectifs*? Following Law (1992) this is because, in practice, network patterns may become routines. For example, not all elements involved in an exchange between a producer and a consumer need to be defined all over again in each routinized exchange encounter. The exchange can (and is) simplified, black-boxed. All that matters is that the exchange works. Once simplified, the exchange (the actor-network) can be *assumed* to act as a disengaged block – a punctualization that enables a language of 'prime movers', of 'causes' and 'effects'. Apparently simple elements thus in fact masquerade as the *collectif* of which they are an effect.²³

How can we open up these punctualized compositions, these black-boxed *collectifs*? Our answer is: through *de-description*, through the opening up, the exposition, of the *trajectories* of networks that end up being punctualized. This means that one has to follow entrepreneurs, politicians and so on, in their work of defining the characteristics of their objects (such as products or laws). It means that we have to follow actors' hypotheses about the entities that make up the world into which their objects are to be inserted. Indeed, a large part of the work of entrepreneurs is that of *inscribing* their vision about the world in the intermediaries they bring into circulation. Following Akrich (1992), the end product of this work can be termed a 'script' or 'scenario.' It may, of course, be that in practice actors do not wish to perform the roles set out for them by the entrepreneur, since they may define their roles differently. If this is the case, then the envisaged intermediaries never become real. So the point is to ascertain whether entrepreneurial projects become real or remain unreal. This problem can be approached by following the negotiations between entrepreneurs and potential users, and studying how the results of such negotiations are translated and inscribed or concretized into different materials (laws, products, skills). For practical purposes, this means that one needs to do the opposite of what the actors (inventors, entrepreneurs, manufacturers and so on) do: namely, to *de-cribe* inscriptions. To *de-cribe* is, as the verb suggests, to deconstruct what has formerly been constructed – that is, to follow the work of inscription.

To summarize, I argue for the use of a different analytical language. A language of heterogeneous networks. A language that seeks to find *regularities* in these networks. A language that tries to identify the *practices* that engender relatively strong, durable (or feeble, fleeting) enterprises, and the heterogeneous networks these practices *de-scribe*. A language that avoids asymmetrical and reductionist accounts. Favouring such a vocabulary, I suggest, has the definite advantage of offering a conception of process that takes account of contingency. Consequently, the explanations of small firms that emerge are necessarily of a 'one-off' character, and do not seek 'patterns', 'trends' or 'general laws.'

Conclusion

Small firms are undoubtedly important because in most areas of the so-called Third World they are thriving and provide employment for the largest part of the population. Their potential for sustained economic growth and welfare provision is now realized as never before. Indeed, reevaluations of small firms' contribution to development are presently high on the diverse agendas of development. Never before, then, has the task of understanding small firms – how they are shaped and how they shape development – been so urgent. The argument developed in this chapter represents one more step in addressing this urgent task. In stressing the heterogenous nature of small-scale entrepreneurial projects, this chapter redirects attention to an often forgotten dimension of the debate on the role of small firms in development – namely that the technical or economic questions small firms confront are never narrowly technical or economic, just as the social or political problems they face are never narrowly social or political.

A first general recommendation flowing from this chapter, then, is the not always obvious insight that it is difficult to formulate policies to support small-scale business through social, political, economic or technical incentives alone. Indeed, the more one ventures into actors' behaviour, the more one is confronted with complex relationships, and the less obvious it becomes to index action in specifically social, political, technical or economic terms. Hence, policies towards small firms should address the multidimensional character of action. Related to this, a second general recommendation is that schemes promoting small firms need to go beyond treating small-scale entrepreneurial projects as isolated, self-contained entities. Instead, they should be geared to the *collectif* of actors engaged in the production, dissemination, and consumption of specific goods and services. This is not without its problems, for one cannot generalize about *collectifs*: each one represents a specific and unique configuration of actors.

Considering *collectifs* as loci for policy formulation thus calls for a different way of 'measuring' small firms. In 'measuring' the dynamics

and viability of small firms, I advanced a number of conceptual tools which may have policy implications. So, for example, could the tool kit used in this chapter be used to address such questions as: which small firms should be helped and how? These questions are not, however, neutral and hence the conceptual apparatus of actor-network theory is a double-edged weapon. Actor-network theory can show which enterprise forms are successful and thus worthy of political support, technical assistance, credit programs, and so on. Such an interpretation would however pay lip service to liberal policies and supply-side economics. Symmetrically, the tool kit used in this thesis offers the possibility of detecting those enterprise forms which are unsuccessful, and thus aiding populist policies and demand-side economics in arguing for the protection and promotion of these firms, which are clearly not a part of the micro-entrepreneurial elite that knows how to take care of itself. The policy implications of actor-network theory thus vary because these implications may mean different things to different policy makers, and involve a range of political, ethical and moral choices which cannot be resolved by means of any theoretical framework whatsoever.

Notes

- 1 See especially the flexible specialization literature on the Terza Italia (Becattini 1989; Brusco 1986), Baden Württemberg (Häusler 1992) and Scandinavia (Asheim 1992; Håkansson 1989).
- 2 Much has already been written on the way in which this object was constructed, and I will not repeat the argument here. See Escobar (1995) for an excellent (though to an extent generalizing) study of the depoliticized construction of the duo 'development' and 'underdevelopment'. For more modest, ethnographically based examples, see Ferguson (1990) on Lesotho and de Vries (1997) on Costa Rica.
- 3 The term 'informal sector' was introduced by Hart a year before the publication of the ILO report. See Hart (1973) for a fuller elaboration of the term.
- 4 Subsequent fine-tuning of the model introduced the category of 'simple' or 'petty' commodity production. See MacEwen-Scott (1986, pp. 98–99) for a discussion of the difference between these concepts.
- 5 Methodologically, the flexible specialization approach is very appealing because its general argument is that the strength of small-scale enterprise cannot be comprehended by examining individual firms. Rather, these firms are seen as organizations interacting within highly volatile, sometimes chaotic, but nevertheless identifiable networks. As Pedersen *et al.* argue (1994, p. 15), in these networks entrepreneurs associate with workers, traders and other participants in utilizing available and adaptable techniques, thus forming a collective production unit or 'meta-enterprise'.
- 6 This essentialist idea underlies the writings of such disparate contemporary authors and institutions such as Schumpeter (1934), Rostow (1963), and the World Bank (1991).
- 7 For the sake of brevity, I consider the commoditization thesis under this conceptual model.
- 8 For important exceptions, see the work of Schumpeter (1934) and Polanyi *et al.* (1957). For more contemporary exceptions (of a social reductionist kind), see Granovetter (1985).
- 9 In a sense, actor-network theory has much in common with some versions of systems theory (Hughes 1983). However, unlike systems theory, actor-network theory stresses that

the elements (including the entrepreneurs) bound together in networks are, at the same time, constituted and shaped in those networks.

- 10 The notion of *collectif* as developed by Callon and Law (1995, p. 487) differs from that of *collective* or *collectivity* in that the former is not an assembly of people who have decided to join some form of common organization. Rather, a *collectif* is an emergent effect created by the interaction of the heterogeneous parts that make it up. In other words, it is the *relations* – and their heterogeneity – that are important, and not the things in themselves. The notion of *collectif* also retains the main idea of Callon's concept of *techno economic network*, which he defines as a 'coordinated set of heterogeneous actors . . . who participate collectively in the conception, development, production and distribution or diffusion of goods and services, some of which give rise to market transactions.' (1992, p. 73).
- 11 Technological determinism is 'the theory that technology is indeed an independent factor, and that changes in technology cause social changes. In its strongest version, the theory claims that change in technology is the most important cause of change in society.' (MacKenzie and Wajzman (1985, p. 4).
- 12 The position that technology is socially determined (e.g., Braverman 1974).
- 13 See the articles in the volume edited by Pickering (1991) for a presentation and discussion of these.
- 14 As Star (1991, p. 30) summarizes this battle, the British sociologists argue that there is, and should be, a moral divide between people and things, and that attempts to subvert this divide are dehumanizing. This position, of course, returns one to a primitive realism of the sort we had before science studies. The French, on the other hand, focus against 'great divides', and seek a heuristic flattening of the differences between humans and non-humans in order to understand the way things work together.
- 15 This line of thought, which is currently *en vogue* in much sociological writing, finds expression in Giddens' structuration theory. From an actor-network perspective, this theory is essentialist on two counts. First, the relations that are said to structure action, and which in turn are structured, are of a social character. This contradicts empirical evidence, which shows instead that every lengthening of a network in space and in time not only incorporates more and more humans, but also more and more non-humans. We may all be closely linked with Chilean kiwi producers, Japanese environmentalists or the struggle of Zapatista rebels. But take away the ships, the newspapers or the internet and time-space decompresses immediately. The second point is that Giddens' theory of structuration takes actors and structure to be given. This is basically an essentialist position – and a tautological one at that.
- 16 'Global' does not necessarily mean geographically distant, and 'local' does not necessarily mean geographically close.
- 17 And, in its absence, that of *divergence*.
- 18 The courses of action that emerge from the issuance of a credit line cannot of course be determined *a priori*, but can only be decided by following the producer in his actual practice.
- 19 It is important to note, however, that momentum is a relational characteristic: its outcome depends on the strategies that different actors may bring into play.
- 20 Callon's attempt to bridge the gap between economics and sociology is certainly not the only one. See for example Vanberg (1994), who tries to associate the notion of norm- or rule-guided behaviour (*homo sociologicus*) on the one side, and that of rational, self-interested choice (*homo oeconomicus*) on the other. In this example, the very absence of things or intermediaries in the definition of behaviour takes Vanberg into a completely different direction.
- 21 Callon is quick to state that his solution for bridging economics and sociology is different from the notion of 'embeddedness' reactivated by Granovetter (1985), who sees networks as associations between humans only.
- 22 A parallel of this position can be found in Daly (1991) who refers to the concept of *radical relationalism*. Radical relationalism advances the idea that 'nothing can be defined

independently, or outside a set of differential articulations.' To take the example of the identity of commodities, this would entail starting from the assumption that goods do not have an intrinsic, or essential, value (either in use or exchange terms), but that value is socially created in and through interactions (e.g., situations of exchange) involving different calculative domains (and this includes important *interfaces* between socially, politically and/or economically differentiated actors). The identity of any good will thus fully depend on how it is articulated with a set of categories and practices within a given situation. It is important to note that Daly connects the concept of relationalism with that of *non-closure*. By non-closure she suggests that the *identity* of any thing (or, for that matter, of any practice), 'can never be limited, or closed'; it can always be rearticulated within an alternative system of relational order. Thus for example the category of 'debt' may be constructed differently in a relational sequence involving *compadre*, 'brother', 'friend', and so on than within a loosely aligned network that draws together banks, wholesale markets, anonymous buyers at a supermarket etc.

- 23 Thus a seemingly 'simple' exchange encounter *may* disguise, blur, render invisible complex sets of relations – collective agents – made up of humans and non-humans. Here I emphasize '*may*' because, at any moment, the relationships between the different elements making up the collective may be problematized, questioned – thus opening up all the complexities involved and calling for new rounds of translation.