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Narratives of experience and production of knowledge within farmers' groups

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A B S T R A C T

In this paper, we develop an analysis of the processes by which individual experiments are shared within a group of farmers. Based on observations from a community of practice organized around direct seeding techniques, we question the ways in which these local experiences, situated in contrasting physical and social contexts are made into a discourse available for others. We use the conceptual frameworks of the sociology of science and technology and pragmatic sociology, which can account for the tests and processes that ensure the standardization of experience and increased genericity. We show that the use of the analytical framework of the sociology of translation, originally conceived around the study of laboratory practice, opens interesting and useful avenues of research to study the dynamics of other forms of knowledge than the scientific.

1. Introduction

The production of knowledge within groups of farmers has been an interest for many years amongst sociologists and anthropologists studying the agricultural world.[1] From the 1970s and 1980s, whether in developing or industrialized countries, issues have been raised (Chambers et al., 1989; Darré, 1984) concerning the capability of farmers to produce knowledge amongst themselves. While the processes of modernization or the green revolution were aided by the development of agricultural science and technology, and innovations developed in research stations, it was shown that farmers were not merely receivers of innovations designed upstream, but rather the producers and holders of knowledge in its own right, and distinct from agronomists and extension workers. This affirmation of the status of the peasant as a producer of knowledge, as opposed to a Fordist model of innovation (Kloppenburg,1991), assumed then – and still displays – a strongly political dimension. Thus, in France, Darré (1999) had no hesitation in calling for a struggle "against the racism of intelligence". In the same way, the development from the late 1980s of research conducted in industrialized countries on agricultural systems representing an "alternative" to intensive agriculture, has contributed to the development of an extensive literature around farmers' knowledge and their local characteristics (Mc Corkle, 1989).

The health crises, and environmental or social concerns created by the industrialization of production in these countries have indeed resulted in the emergence and development of a multitude of proposals and alternative technical models (Van der Ploeg, 1994; McMahon, 2005) driven by the agricultural profession alone or in combination with actors in the scientific and industrial worlds (Goulet, 2010). All the work that has paid attention to these processes and transformations that resulted in the production of agricultural knowledge have highlighted two key elements.

A first striking feature emerges initially in the literature about the importance of 'local' knowledge, specific to farmers as individuals, about how to design and manage these production systems when they are no longer based on standardized objects or action formats. Withdrawal of ploughing (Goulet and Vinck, 2012), and the non-use of chemical treatments, induces a freer expression of the specific features of environments and living entities, and accordingly requires a localized knowledge of situations (plots, land, animals) on the part of farmers. Singularity, and idiosyncrasy would thus be required in the modes of knowledge and management at the expense of "recipes" established by an experimental science that criticized the farmers involved in these movements (Hassanein, 1999; Lyon et al., 2011).

The second striking feature is closely related to the first, and refers to the forms of occupational groups that would be required

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around these alternative production models. Dialogue groups and social networks (Murdoch, 2000; Compagnone, 2004; Sligo and Massey, 2007) appear, indeed, to be the central figures of these movements, many authors emphasizing the need for these farmers to exchange, to confront their peers, share their experiences because of the lack of reference information about their existing innovative systems (Hassanein and Kloppenburg, 1995; Rikoon and Raedeke, 1997; Lemery, 2003; Richardson, 2005; Ingram, 2010; Curry et al., 2012).[2] These occupational groups are then described as spaces disconnected from any localized geographical roots and in which exchanges and intense circulation of knowledge are produced amongst their members (Warner, 2007; Hassanein, 1999), outside the formal systems of agricultural research and development.[3] The concept of communities of practice (Lave and Wenger, 1991; Wenger, 1998) is commonly used in the literature (Oreszczyn et al., 2010; Madsen, NOE, 2012; Morgan, 2011),[4] in order to describe these groups and analyse the ways farmers share experiences and build identities.[5]

Thus the knowledge of the farmer – as an individual – and of those farmers – as a category of actors opposed to other categories (agricultural research, agricultural development institutions) and as groups of practitioners – is at the heart of such farming alternatives, or at least as seen through the work of sociologists who have studied them. But despite their convergence around the local and collective dimensions of the knowledge involved in this action, the studies mentioned hardly address something that is essential: the question of how the knowledge of individuals is concretely passed to the group, to the community of which they are a part. Indeed, the situations as they are described and analysed suggest a paradox: the knowledge of farmers ought to be more situated than before, but the need to share it among occupational groups should be more pronounced. Therefore, by what processes or mechanisms is this situated knowledge, and singular experience, being shared within the group? How does individual experience develop from being a located and intimate form of knowledge into forms of knowledge that are more generic and accessible to others? It is to these questions that we will try to provide some answers in this article, by attempting to analyse in detail the processes by which knowledge is constructed between peers around a given innovation, no-tillage, and by using two analytical frameworks sharing many elements in the way they deal with processes of decoupling and creating equivalence between situations: "pragmatic sociology" (Dodier, 1995; Thévenot, 2001; Boltanski and Thévenot, 2006), and a particular theoretical approach to the sociology of science and laboratory practice using actor-network theory (ANT) (Latour and Woolgar, 1979; Callon, 1986; Akrich, 1992). More particularly, by "diverting" the framework of this latter area of research to study the production of non-scientific knowledge, we also try to contribute to debates about the appropriateness of oppositions usually established between the processes by which, respectively, scientific knowledge and lay knowledge are developed.

2. From translations to conventions in the rise of genericity: literature review

Since its foundations in the ethnographic analysis of science (Latour and Woolgar, 1979; Callon, 1986; Akrich, 1992), actor-network theory (ANT) has become an essential reference point for studying the dynamics of knowledge production. From the study of the practices of actors whose business itself is to produce knowledge, this sociology has focused on the translation processes and the importance, as a principle of symmetry, of taking account of non-human entities in these dynamics. This sociotechnical reading of the displacements operating at the heart of laboratory work does indeed place translation with the three stages which characterize it (Callon et al., 2009), at the centre of its analysis of the processes by which the scientist derives findings from the study of phenomena in the laboratory that apply outside the walls of the latter.

The first stage (translation 1) is "a reduction of the great world (the macrocosm), the society around us, the universe, to the small world (the microcosm)", that is the laboratory. The wider world is mobilized, reduced and transported to the laboratory to undergo experimentation, manipulation, and the laboratory manages the feat which "transforms swarming and dispersed excavations into these traces that a glance embraces" (Callon et al., 2009). The second stage (translation 2) is the creation of "collectives"[6] within the laboratory, mixing human actors, researchers and technicians, and instruments. Skills are distributed in these groups between human and non-human actors. Devices incorporate into effect a certain number of knowledges produced outside the laboratory, but their use, their handling requires that the actors have a whole set of tacit knowledge (Collins, 2001) that makes science a technical and social activity similar to others on this point. These groups produce and manufacture registrations (or inscriptions) using different media and it is from these that scientists work and debate. These registrations, once commented upon, compared and cross-linked, reveal the existence of entities, which are the phenomena they represent. The third stage, (translation 3) is finally the "return to the wider world" where the validity of the knowledge produced in the confined environment is tested by the outside world and its complexity. In order that the products of labour in the microcosm are not definitively cut off from the world, a certain number of allies must be interested, enlisted and mobilized who will attest to the validity of discoveries, and their fidelity with what happens outside the walls of the laboratory (Callon, 1986).

Through these three stages, Callon thus provides a way to understand the processes by which an isolated fact, attached to a particular situation, manages to be restored and translated to others in the form of knowledge decoupled from the contingencies of its origin. This model for the production of proof is the evidence for what Licoppe (1996), in his history of scientific practice, called the regime of accuracy. The latter distinguishes, on the basis of an analysis of accounts of the experiments of seventeenth century physicists, three regimes of knowledge production and establishment of scientific truths which have followed successively since that time. The first of these, the regime of curiosity, is that of the amazing, the unusual; scientific facts are associated with spectacular experiments, their results made known to a public whose special status (aristocrats, scholars) constituted the authority and gives credibility to the evidence. These latter are the *experimentum*, "a particular and

[2] On the importance of networks as an important form of occupational group in agriculture, in this case for agricultural advisors, see Klerkx and Proctor (2013).

[3] On developments in the relationships between farmers and agricultural advisors around "best management" practices, see Ingram (2008).

[4] See Coudel et al. (2011) for the relevance of community approaches within learning studies in agriculture.

[5] Wenger (1998) suggests that the commitment of individuals in the community, the development of expressions for individual practices, contribute to the gradual construction of a shared "repertoire" made up of objects, words, routines, and stories with which the practitioners are able not only to build identities, but also to produce frameworks for interpreting and learning from their individual practices.

[6] On this concept of "collective" (group), we also refer to the work of Barbier and Trépos (2007) for a progress report on the sociology of collectives.