Understanding the use of rural space: the need for multi-methods

Lene Møller Madsen\textsuperscript{a,*}, Hanne Kirstine Adriansen\textsuperscript{b}
\textsuperscript{a}Centre for Forest, Landscape and Planning, Rolighedsvej 23, 1958 Frederiksberg C, Denmark
\textsuperscript{b}Danish Institute for International Studies, Strandgade 56, 1401 Copenhagen K, Denmark

Abstract

Although the late 1990s saw increasing use of qualitative data in rural studies and a turn towards issues such as identities and the construction of rurality, many rural researchers still rely on a range of different methods and use both qualitative and quantitative data. However, the challenge of combining quantitative and qualitative data and using different methods is a theme not often dealt with in rural studies, at least not explicitly. This paper (re-)turns the attention to implications of using various methods and combining different types of data for studying a subject matter called ‘the use of rural space’. It concerns both physical land use and the practice and values of individual actors influencing the land use. We emphasise interplay between methodology and philosophy throughout the research process and argue for using multi-methods without compromising the integrity of the different methods. The methodological approach is a combined study of practice and values of individual actors. Two examples—one concerning Senegalese pastoralists’ livelihoods and their use of mobility and one concerning landowners’ location of field afforestation in Denmark—illustrate how the approach facilitates quite different studies of both practice and values and how quantitative and qualitative data can be combined in a non-eclectic way.

1. Introduction

The combination of quantitative and qualitative data is a daily challenge for many researchers, and it is subject to many discussions in the corridors. However, few papers deal explicitly with the philosophical and methodological implications of research based on a combination of different data and methods. In this paper, we want to discuss and elaborate on ways to integrate qualitative and quantitative data in rural research. The point of departure is our respective research in both a developed and a developing country\textsuperscript{1} and we focus on the benefits of using multi-methods.

The field of research is agricultural/rural geography and hence the development of an integrative approach is a result of research questions within this field. Although our empirical work concerns different issues that literally are worlds apart, we find that they concern a common subject. We name it ‘the use of rural space’ and it is understood as both the actual physical land use and the practice and values of individual actors influencing the land use. Despite this somewhat restricted subject matter, it is our hope that the discussion can be of inspiration to other rural researchers due to its general methodological aspects.

In the past two decades, geographers interested in rural issues have been influenced by different theories and discourses, among others by behaviourism, systems analysis, political economy, actor-network, and post-structuralism (e.g. Cloke, 1997; Gibbon, 1994; Krönert et al., 1999; Little, 1999; Marsden, 1988; Marsden et al., 1996; Murdoch, 1997; Pacione, 1986; Philo, 2000; Whatmore, 1999). Especially, the influence from political economy has been substantial: ‘political economy has become the dominant discourse to the extent that, for many, it has come to represent agricultural geography’ (Morris and Evans, 1999, p. 350). This development has brought new and interesting knowledge as well as new research strategies and methods. However, many of these have proved to be unsatisfactory for understanding the use of rural space for while their findings are not contradicted, they leave most of the dynamic world of rural actors’ land use unexplained. As noted by Murdoch, ‘rural areas continue to follow
their own stubborn logics of change and stasis’ (2000, p. 407). We acknowledge the limits and possibilities imposed on rural areas by the structures of economy, ecology, politics, etc., and the purpose of this paper is not to enter the discussions of ‘individual’ versus ‘structural’ approaches. Instead we examine how individuals respond differentially to structure in order to unfold the complex world of the use of rural space by individual actors.

In this paper, we emphasise the relations between practice and values of rural actors. Practice we see as actions related to land use carried out by individual actors. Values, on the other hand, we see as traditions, thoughts, and beliefs; although these often are socially embedded, we focus on the individual actor and include aspects such as preferences and motives. We argue that these aspects should be studied using different methods, which yield both qualitative and quantitative data. In order to resolve some of the methodological difficulties of combining qualitative and quantitative data, we turn to philosophy of science. Based on inspiration from critical realism (e.g. Pratt, 1995; Proctor, 1998; Yeung, 1997), we discuss the philosophical implications of studying both practice and values using multi-methods without compromising the integrity of the used methods.

The paper is organised in four main sections. The first section elaborates on the use of rural space by individual actors as the subject matter. In the second section, difficulties of integrating methods and data based on different philosophical stances are discussed. The methodological approach emphasising practice and values is discussed in the third section. The fourth section consists of two examples from Senegal and Denmark, respectively. The examples illustrate how the methodological challenges of combining qualitative and quantitative data derived from our analysis of practice and values are handled. In this way, it is shown how the methodological approach can be used for understanding the use of rural space in different parts of the world.

2. The use of rural space by individual actors

The conceptualisation of the use of rural space includes more than agricultural activities. In the developed world, many people living in rural areas and even those owning land in the countryside are not directly involved in agricultural production (see examples in Haartsen et al., 2000). Nevertheless, agriculture still takes up a significant proportion of rural land and ‘land is a key marker of rurality’ (Murdoch, 2000, p. 408). In developing countries, most people living in rural areas are involved in agricultural production. However, for these people, agriculture is not a question of mere production either, as the recent research on, for instance, rural livelihoods suggests (Ellis, 1998; Bebbington, 1999). In order to understand rural people and their land use, they are considered in a broader context of the social and cultural embeddedness of their actions. Hence, we want to combine aspects of ‘conventional’ land use studies with aspects of the recent research of rurality emphasising identity, discourse, motives, and agency as well as the cultural construction of rurality (e.g. Haartsen et al., 2000; Liepins, 2000; Little, 1999; Phillips et al., 2001).

The subject matter is named ‘the use of rural space by individual actors’ because we want to emphasise the role of the individual actor in contrast to many land use studies in both developed and developing countries. Many of these—especially concerning developing countries—are based on the ecosystem approach and do not focus on the individual actor (e.g. Brossier, 1989; Duivenboden, 1995; Little et al., 1990; Picardi, 1974). According to Moran (1990), there are four shortcomings of the ecosystem approach: the calorific obsession, the ignoring of historical factors, the neglect of the role of individuals, and the problems of boundary definition. We consider some of these shortcomings a result of the implicit positivist philosophical stance applied within the ecosystem approach. This means that the social embeddedness of actions of rural land users is not accounted for. Röling (1994, 1997) has attempted to overcome the positivist approach in studies of human land use. He suggests a division into human and physical systems, which should be studied within different frameworks. Physical systems or environments should still be studied using an ecosystem approach and hence within the positivist stance. Human systems, on the other hand, should be studied using action research and based on a social constructionist stance. Consequently, Röling believes that these different epistemologies can be integrated. We find that this approach and similar eclectic approaches are used implicitly in many land use studies (e.g. Turner, 1999). However, as will be explained in the following section, we do not agree with Röling’s integration of different epistemologies, but instead argue for the need to combine methods within the same philosophical framework.

In recent years, actor network theories (ANT) have been widely used in rural studies (e.g. Burgess et al., 2000; Clark and Murdoch, 1997). Following ANT, all the linkages between all involved units give the composition and shape of rural networks. By the use of ANT it is possible to analyse network compositions and how these gain strength (Murdoch, 2000). We find this approach beneficial for avoiding the structuralism of (crude) political economy. Farmers are part of complex networks of actors including advisers, planners, suppliers of credit, and so on. Long and Ploeg (1994) and Nyerges (1997) have discussed the benefits of using an actor-oriented approach in agrarian studies. As Long
and Ploeg state: ‘all forms of external intervention necessarily enter the existing life-worlds of the individuals and social groups affected, and in this way are mediated and transformed by these same actors and local structures’ (1994, p. 64). It is this mediation and transformation process we analyse through the focus on practice and values of individual actors living in rural areas. However, the actor-oriented approach is different from actor-network studies in that it does not emphasise networks; instead the focus is on actors’ use of rural space including both practice and values. Because of this focus, we draw upon lessons learned in both rural sociology and natural resource management. The former can provide us with methods for studying motives, values, preferences of the individual actors, i.e. understand the underlying issues for agency and decision-making. The latter can help us describe and map the practice of these individual actors, e.g. through the use of GIS. Practice and values are thus studied using multi-methods, which demand a focus on the philosophical stance within the research process.

3. Philosophy–methodology interplay

A way to be explicit about the philosophical stance is to divide the research process into a philosophical part and a methodological part. Similarly to Yeung (1997), we see philosophy as dealing with the ontological and epistemological aspects of research, while methodology consists of theory and method.

Different ideas about ways of conducting research occur, depending on the philosophical point of departure. This means different data collection methods, evaluation rules, etc. are considered appropriate. For instance, a positivist and a critical realist are likely to consider different research methods appropriate, even though they may be investigating the same subject matter. This can be further explained by Kuhn’s concept of incommensurability (Kuhn, 1962). According to Kuhn, research is conducted within a certain construction of knowledge with its own set of rules. Results gained within one knowledge construction cannot be shared with other constructions of knowledge, because they are incommensurate. Therefore, it is imperative to consider the philosophical stance no matter what type of research is conducted. Without commitment to a particular philosophical stance, it is not possible to decide whether one research method is more relevant than another method. The whole idea of being able to choose between methods is based on implicit or explicit assumptions at the philosophical level. According to Yeung (1997), we cannot judge until we are open about our philosophical stance, which is often implicit within one ‘discipline’.

Critical realism was a source of inspiration for developing an approach for studying the use of rural space. Critical realism as a philosophy and a methodology has been discussed in depth elsewhere (e.g. Archer et al., 1998; Bhaskar, 1978, 1989; Collier, 1994; Sayer 1992, 2000). In this context, it suffices to note that we are inspired by the ontology and epistemology of critical realism in the sense that we believe that a world exists independently of us and of our knowledge of it. However, true or objective knowledge about this world can never be obtained because all our information is derived through filters. Furthermore, the social context of the study influences the construction of our knowledge. This has certain implications for the choice of methodology. We agree with Sayer’s (1992) emphasis on concrete and abstract levels of research in the methodological part of the research process. The creation of abstractions depends on the philosophy under which these are conducted. For example, the difference between abstractions made within a positivist framework and within a critical realist framework is that the former concerns identification of empirical regularities, while the latter concerns identification of causal relations. Likewise, the concept causes are understood differently within different philosophical positions (Sayer, 1992). In our notion, causal relations mean the interpretation of the reasons people express and their observed practice and values. It is not a simple, one-to-one relation, but a complex set of relations. Mikkelsen (1995) divides these into immediate, underlying, and basic causes. For both causal relations and reasons imply that they ‘cannot be measured but must be understood’ (Röling, 1997, p. 250). We study verbalised reasons on the concrete level and causal relations on the abstract level of research. Further, our emphasis on the concrete implies that fieldwork is important for the collection of empirical material. However, there are different ways of doing and perceiving fieldwork depending on the philosophical stance. Positivists and empiricists will be more occupied with representativity and generalisations than with the establishment of context. Hence, they see fieldwork as ‘... based on the assumption that reality is present in appearance... and can therefore be directly apprehended through observation’ and ‘...biased towards the evidence of the eye’ (Smith, 2000, p. 267). We perceive the purpose of fieldwork as in situ data collection of all sorts of information, e.g. social structure of a household, vegetation composition, or religious rituals. Different methods can be used for collecting information in the field; for rural studies it can be participatory observation, interviews, mapping, etc. The purpose of collecting information in the field is to be able to contextualise. We acknowledge the ‘inescapably temporal and constructed nature of experience’ (Jenkins, 1994, p. 434) and believe that ideas are better informed when based upon in situ...
Hence, fieldwork is related to information, which cannot be studied outside the context of the field. Inspiration for applying the information gathered in the field is found in Pratt’s (1995) and Yeung’s (1997) development of critical realism as a methodology and their emphasis on ‘putting critical realism to work’. They show how known methods such as iterative abstraction, method triangulation, and grounded theory can be used in interplay with philosophy to make causal relations. Further, Yeung (2000) motivated the study of practice and values because of his emphasis on the social embeddedness of action, shifting identities, and the role of context in understanding behaviour.

As mentioned, we want to combine aspects of land use studies with research on rurality. These issues are often studied using different methods and a combination of these methods leads the ongoing discussion of what could be called the case study versus the survey method (e.g. Flyvbjerg, 1991; Mitchell, 1983), or what Sayer (2000) calls intensive versus extensive research. We find that in the study of the use of rural space both types of research are valuable for their respective purposes and that the methodological implications of these philosophical discussions are the ability to combine these methods within the same philosophical stance. Further, in order to avoid eclecticism, we believe that there should be a constant interplay between methodology and philosophy—as illustrated in Fig. 1.

Fig. 1 is constructed to focus on the interplay between the different parts of the research process and should not be seen as an attempt to argue for a fixed way of doing research. Research processes have different beginnings, but in order to explain the figure we start with the philosophical stance. By this, we mean the researcher has to be explicit about his ontology and epistemology, which can sometimes be labelled according to a school of thought, e.g. critical realism and social constructivism. Depending on the philosophical stance, there are certain research questions that the researcher finds acceptable or possible to investigate. After formulating the research question, the researcher chooses a research method, the choice depending on the philosophical stance, as the arrow indicates. The research method is the coupling of empirical material and theory, whereas the data handling method refers to empirical material only. Again, certain data handling methods are more acceptable for certain research methods and certain philosophical stances. Finally, the

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data collection method refers to how empirical material is collected. Some of the data collecting methods are acceptable for most research methods. Often it is how the data are used, and not necessarily how they are collected, that differs for the various research methods and philosophical stances.

It should be noted that no claims are made about the novelty of this. Instead we are simply advocating for a (return to) philosophically informed way of doing rural research. Our hope is that this will help us dealing with the problems of combining qualitative and quantitative data, which means that we can study both changing constructions of rurality and the physical outcome of this in the rural space.

4. A methodological approach: practice and values

Our methodological approach to study rurality and land use is focused on understanding practice and values of individual actors. In our notion, practice is understood quite literally as actions carried out by individuals, but most importantly we do not perceive these actions to entail a universal rationality or to be context independent. Hence, we do not believe in the notion of ‘the economic man’ or in the modelling of human behaviour, which was the response of some behavioural approaches to the shortcomings of the economic man (e.g. Walmsley and Lewis, 1984). Like Röling (1997), we find the assumptions used in mathematical models problematic because ‘in making assumptions, the models violate the variability, diversity and the negotiated, contextual, contingent and adaptive nature of human intentionality, and the flux of trade-offs people make among their different goals’ (1997, p. 250). Human behaviour is not rational in the sense that it can be modelled on the basis of a few parameters. However, every individual can be said to be rational within his/her own perception of the world and hence understood in this context (Fay, 1999). Or as explained by Vayda ‘recognising that as more is known of their contexts the better are any activities of concern to us understood’ (1983, p. 272). Consequently, we find that practice and values should be contextualised. Our notion of values includes traditions, preferences, motives, thoughts, and beliefs of individual actors. When we look at values, we are concerned with understanding and analysing meanings in specific contexts, or as Baxter and Eyles state ‘we set out to learn to view the world of individuals or groups as they themselves see it’ (Baxter and Eyles, 1997, p. 506). This is important because the practice of people can only be understood in the context of how they construct and perceive their reality. However, the same practice carried out by different people may not be based on the same values. Likewise, values do not lead directly to a certain action and are often expressed at a more abstract level than practice. Therefore, practice and values should be understood in interplay.

Studies of both practice and values have been undertaken with different methods and embedded within different philosophical stances (see e.g. Beedell and Rehman, 1999; Gasson, 1988; Kazenwadel et al., 1998). However, many of these apply an implicit positivist approach, which means that the data obtained and especially the knowledge about the data are often reduced in order to function as inputs in statistical measures. In this process valuable information about context is usually disregarded. Hence, we find that the implicit positivist approach gives no tools for analysing qualitative data and making them a part of the explanation. This can be seen as an analytical failure because it makes the analysis unable to focus the associations between factors.

It may be noted that our way of establishing understandings and abstractions is similar to grounded theory (Glaser and Strauss, 1967). While we find that grounded theory is a useful methodology, it is only one in a number of possible methodologies, which can be used for understanding the use of rural space. Likewise, our methodology is similar to ‘progressive contextualisation’ (Vayda, 1983). While these methodologies have been of inspiration, we find a need to include the aspect of philosophy of science and emphasise the interplay between methodology and philosophy. This is how we have worked with the examples presented below. In the conceptualisation of practice and values, causal relations are interpreted by analysing both practice and values using multi-methods. This is what Yeung describes as ‘a total method approach in which these different methods are seen as employed as a coherent whole’ (Yeung, 2000, p. 23 emphasis in original).

5. Examples of the use of rural space

The two examples are taken from our respective research and represent parts of larger research projects. Except from the clear geographical and thematical difference, the examples concern the same subject matter—the use of rural space—and they are based on the same methodological approach—a combined study of practice and values of individual actors. We have chosen to use both studies as examples in order to illustrate different ways to address the issues raised in the previous sections. Moreover, as the examples come from different geographical areas, this is also an illustration of how to bridge the gap between rural studies of developed and developing countries. However, in order not to exhaust the reader, the examples
emphasise different parts of the research process outlined in Fig. 1. In the first example, the one from Senegal, emphasis is on data collection and data handling; whereas the second example, the one from Denmark, emphasises data handling and research method. In the Senegalese example, method triangulation and iterative abstraction are used for understanding the mobility practice and values of 10 pastoral households and four ideal types of livelihood strategies are constructed. Here, benefits of studying practice and values using multi-methods are emphasised. In the Danish example, different practice and values among 74 landowners applying for afforestation grants are understood through the establishment of a typology based on relational groups. Focus is on philosophical implications of using the practice-value approach in the Danish example.

5.1. Pastoral mobility and livelihoods in Senegal

This example is based on a study of pastoral mobility and livelihoods in Senegal and is fully discussed in Adriansen (2002). The majority of the inhabitants are Fulani pastoralists, who own cattle, sheep, and goats. The Fulani are semi-sedentary: their rainy-season camp is permanent; during the dry season they may stay in the camp or move around depending on the season, the herd composition, and the preferences of the household.

In the late 1980s and early 1990s, there was a paradigm shift in the studies of rangeland ecology and pastoralism (e.g. Behnke et al., 1993; Ellis and Swift, 1988). After this, most studies have emphasised the ecological rationality of pastoral production, particularly that mobility is perceived as a flexible solution, which enables sound utilisation of variable resources (Scoones, 1995). The fact that pastoralists’ mobility practice is rational from an ecological point of view does not reveal how pastoralists themselves construct and perceive this practice. Without knowledge of the pastoralists’ explanations of their actions, their values and preferences, etc., it is difficult to know if they will continue their ecologically sound practice in the future.

Hence, the intention was to analyse mobility in the wider context of pastoral livelihood strategies. Therefore, both values and practice were studied, and the observed practice was compared with the pastoralists’ own description of their practice.

Fieldwork was carried out among 10 households on several occasions during two-and-a-half years. A number of methods were combined; these range from GPS measurements of cattle mobility to questionnaires and qualitative interviews with family members as well as participatory observations.

By using these different methods it was possible to make method triangulation, which means that different types of information are obtained about the same theme with different methods. Here triangulation should be understood in a broader context than direct data check; different methods yield different types of data, hence method triangulation cannot be used for data checking per se. No method is considered superior; instead, the triangulation is based on understanding, which means that the information is contextualised. Particularly observations have been useful for triangulation, because ‘direct observation... enhances consistency and validity’ (Adler and Adler, 1998, p. 90). Roe (1998) also emphasises that method triangulation increases the validity of a study. When we want to understand causal relations it is imperative that the validity of our information is high. In the study, information about practice and values was used in iterative abstraction. This means that information about values regarding a certain issue served as a context for understanding practice of this issue, and vice versa. In this way, abstractions were generated in an iterative process. Multi-methods are often used in studies of land use in developing countries, but usually the methods are used separately for studying separate issues and not in triangulation (e.g. Turner, 1999b; Zaal, 1999). Instead, validity is attempted by increasing the number of respondents or study objects. However, this means that validity is translated into probability, which is useful for describing the distribution of a phenomenon, but not for understanding the causal relations—cf. our notion of causal relations as the interpretation of the reasons people express and their observed practice and values.

5.1.1. Pastoral practice in relation to mobility

Based on interviews with the pastoralists, it was clear that their mobility practice could be divided into two broad categories: Daily mobility within the pastoral unit (the administrative unit used to denote the area belonging to a certain borehole) and occasional transhumance to other areas. This applies to both cattle and small ruminants. Cattle mobility was studied in more detail using GPS.4 The division into the two types of mobility was further confirmed in the GPS data. During the daily mobility, cattle were not herded, because they could find water and pasture themselves. Nevertheless, the cattle walked quite a distance on daily basis. From a questionnaire, we further learned that the pastoralists distinguished between three types of migration—or rather reasons for going on transhumance: (1) Lack of pasture or water, which could be at any time of the year. (2) That green grass could be found elsewhere when the local pasture was dry, which could be at any time during

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3 The term ‘validity’ is embedded within a positivist discourse; ‘credibility’ could be used instead (Baxter and Eyles, 1997).

4 Please refer to Adriansen and Nielsen (2002) for further discussion of the use of GPS for studying pastoral mobility.
the dry season. And finally (3) ‘meeting the rain’, this was very late in the dry season.

Qualitative, unstructured interviews based on the construction of a line with the pastoralists were used for getting information about livelihoods including the use of transhumance. The three reasons for going on transhumance were confirmed through the interviews and the GPS data. Moreover, the qualitative interviews helped us understand the causal relations behind transhumance, while GPS data helped us visualise the patterns and thus ask informed questions. This shows how triangulation becomes more than mere confirmation of data.

Concerning small ruminants, it turned out that some pastoralists had started rearing ‘Tabaski’ sheep. These are young male sheep, rams, which are raised for a purely commercial purpose. They are sold just before the Muslim feast called Tabaski in Senegal. The rams are kept for months in the herd and fed well so they can earn a good price at the right time. Often this means that the herd is taken on transhumance to make sure they have good pasture. In this case the transhumance is adjusted to the timing of the Tabaski. This type of transhumance can be any time of the year, because the Tabaski changes every year with the change of the Islamic calendar. Unfortunately we have no GPS data to show the extent of the mobility of these herds, but both interviews and observations were used to gain information on these issues.

5.1.2. Pastoralist values in relation to mobility

Values, motives, and preferences affecting the use of mobility were uncovered in different ways. For the Fulani, especially the issue of cattle is complex and strongly related to their culture, traditions, and ethnic identity. The discussion of the importance of cattle for pastoralists goes back to Herskovits’ famous paper on ‘The Cattle Complex in East Africa’ (Herskovits, 1926). However, how this importance manifests itself in the everyday life of pastoralists is still debated. The present study illustrates that cattle have importance not only as a means of capital but also for significant aspects of life such as marriage, pilgrimage, and inheritance. The questionnaires showed that animals are given as bride wealth or used as payment for the pilgrimage: ‘I have cattle to go to Mecca, get married, to be heard among the other Fulani. If you don’t have cattle, you haven’t got any say’. Some emphasised the importance for the Fulani identity explicitly: ‘My father had cattle and it is to be Fulani’. This was also confirmed during the qualitative interviews and participatory observations; the most prestigious activities were related to cattle in one way or another. Women’s life was concentrated around milk; if there was more milk than the family could consume, the surplus was sold at the market. Cattle had importance for the women both as cultural and economic capital. Men were responsible for the livestock; they had to provide for the family and therefore it was up to them to decide to sell an animal. They all wanted more cattle and said that cattle represent the ‘good life’. However, an important finding was that even though the end goal was the same for all the pastoralists (to obtain more cattle), their practice was very different. Small ruminants, on the other hand, were valued for the economic contribution to the household economy. They were also seen as a means to acquire more cattle: ‘Cattle are gold for the Fulani. We have small ruminants in order to get gold’. Although more labour may be devoted to rearing small ruminants, this does not signify a cultural importance of these animals.

Concerning pastoral mobility per se, the pastoralists wanted to ensure their possibilities for being mobile because this was necessary for keeping their livestock healthy. Among them, however, many did not like to go on transhumance and this issue did not have importance in relation to the pastoral identity. Most women did not like to go on transhumance; it was strenuous but necessary. Also, the use of paid herders revealed that the importance of mobility was not related to pastoral identity. Rather, the use of mobility was based upon aspects such as herd composition, labour availability and individual preferences.

5.1.3. Constructing livelihood strategies on basis of practice and values

Pastoral mobility is just one aspect of pastoral livelihood strategies. In order to understand the diversity of strategies found in pastoral Senegal, the findings of practice and values of pastoral mobility were combined with practice and values of other aspects of pastoral livelihoods (e.g. agricultural activities, trade, non-agricultural activities, livestock, and identity) and four ideal types of livelihood strategies were constructed. The strategies are called ideal types because they are ‘pure’ types and cannot be transferred directly from the interviews or questionnaires. Burnham (1987), who advocates the use of ideal types for studies of pastoralism, explains Weber’s original idea this way: ‘Weber’s concept of the ideal type was developed explicitly to escape from … the notion in the natural sciences of a causality operating outside of history and of actors’ subjective consciousnesses’ (1987, p. 162). Burnham elaborates that the construction of ideal types involves the recognition of how factors operating within pastoral systems are mediated by the actors’ subjective understandings of their situations. The four ideal types each provide a comprehensive idea of the pastoral way of life; an idea which is based on pastoralists’ motivations, socio-economic possibilities, biological constraints, etc. and not on functionalist and structuralist perceptions of pastoral societies. It should be noted that
the types are described as ‘individuals’, but this does not mean that they can stand alone. All pastoralists are members of a household and their actions should be interpreted within this context. However, these ideal types are abstractions that should be used to understand the diversity of strategies employed, and thus the individual, idealised form is used. The four types are:

The *agro-pastoralist* has a mixed herd and cultivates. The production is mainly for subsistence and based on risk spreading. An agro-pastoralist is not involved in livestock trade unless necessary for buying, e.g. millet or clothes. Children herd the small ruminants and this is not a labour-intensive activity. Transhumance is caused by push effects, i.e. lack of water or pasture.

The *Tabaski pastoralist* has mainly sheep and cattle. He does not cultivate. The sheep production is highly commercial, directed towards the Tabaski, which also affects the use of mobility. Cattle are part of the strategy, but they are not herded and only taken on transhumance when forced thereto. The Tabaski strategy is the most specialised and risk-prone of the four as most of the work is directed towards the sale of sheep during very few weeks of each year. Depending on the supply and demand the Tabaski pastoralist can make a fortune or lose a lot of money. The income from the Tabaski sheep is converted into cattle.

The *commercial pastoralist* has specialised in buying and selling livestock and goes to the market several times each week. This strategy is different from the Tabaski strategy, as it is short term and more labour extensive. However, profit from the sale is converted into cattle as for the Tabaski pastoralist. This strategy is not very risk-prone as only a few heads of livestock are bought and sold at a time.

The *non-herding pastoralist* has found other ways, i.e. ways different from livestock rearing, of generating an income mainly through non-animal commerce. He may have a shop in the village or have found some other way of generating an income outside the pastoral economy per se. The income-generating activities mean that paid herders can be used for the livestock. He prefers other kinds of work to livestock rearing and does not take pride in caring for his animals; nevertheless, he converts his income into animals, predominantly cattle.

5.1.4. Benefits of the practice-values approach

In this study, triangulation of methods was used in an iterative process to obtain information about both practice and values. Both qualitative and quantitative data were used and it is important to note that no type of data or method was considered superior. This means that in cases of apparent disagreement between information obtained through the different methods, the problem was resolved through a contextual reading of the answers or data (Kvale, 1996). The information on practice and values was used in iterative interpretation (Mikkelsen, 1995). For instance, discussions concerning paid herders, a topic which concerns practice, revealed that it was not important for the pastoralists to go on transhumance themselves; transhumance concerned the well-being of the livestock not that of the herder. If only practice had been studied, no ideas of the importance of mobility for the pastoral identity would have been known. While the study showed that transhumance was not seen as important for the pastoral identity per se, it was found important because there is not always enough pasture for the livestock. Hence, transhumance became important through the importance of the livestock. It was not important for the pastoralists to be mobile as long as their livestock were mobile. However, the importance of cattle as economic and cultural capital meant that mobility was important as a means to secure healthy cattle and, especially for the women, cattle that provide a lot of milk.

If only values had been studied, the differences in livelihood strategies and especially in the use of mobility would not have been revealed. The apparent limited importance of mobility for the pastoralists disguised that the livestock were quite mobile. Especially the fact that cattle are not herded gives us little understanding of the importance of cattle movements unless we include information about practice. Finally, while pastoralists’ discourse emphasised cattle, Tabaski sheep were actually of major importance both in terms of economics and in terms of labour input. These livestock were especially interesting in relation to mobility, because of the intensive use of transhumance and that this transhumance eventually will occur at a different time of the year compared to ‘conventional’ transhumance. This means that in case of Tabaski sheep, transhumance is not a means to balance variability in natural resources, but rather a means to maximise the economic profit of this highly commercial production. Returning to the new understanding of rangeland ecology and pastoralism, it is important to note that even though the pastoral practice is ecologically sound now, this may not be so in the future.

5.1.5. Location of field afforestation in Denmark

The example of field afforestation in Denmark is used as an illustration of how the development of a typology by using the discussed methodological approach of practice and values can give a comprehensive understanding of the use of rural space in an intensively cultivated area of Europe. The example is based on research conducted in 1997–2000 and is fully discussed in Madsen (2002).

As in many other European countries, the Danish landscape is changing with EU agricultural politics as an influential actor (Buller et al., 2000). One of the prioritised future land uses is afforestation of farmland, supported by EU-grants (Reg. 2080/92). The scheme for
field afforestation together with other environmentally oriented schemes is expected to be an important factor in shaping the future landscapes of Europe. Researchers within agricultural geography have ‘struggled to keep pace with developments and continual refinements of existing policy’ (Evans and Morris, 1997, p. 190) focusing on describing new measures and offering preliminary evaluation of the policies’ effectiveness. We believe that an important task lies ahead, namely the task of analysing the outcomes of these policies in the actual rural use. This requires a focus not only on the processes of adoption of schemes by landowners but also on the actual practice performed by landowners resulting in a specific use of the rural area. The research of agricultural practice must be combined with research of values and motives of landowners to fully understand the causal relations shaping the future landscapes. This argument is developed in the following example.

The two counties of Ribe and Vejle in the western part of Denmark were used as study areas. Here the practice and values of 71 landowners applying for afforestation grants were analysed. To analyse the practice of both granted and not-granted landowners allowed the analysis to determine whether the actual planting was dependent on receiving a subsidy—it was found that it was not the case (Madsen, 2003). Therefore the analysed location covers (1) number of actually planted woodlands (58%) both with and without receiving a grant and (2) number of woodlands applied for but not planted (42%) both with and without a positive response to the application. During the interviews another 14% of the respondents indicated that planting was planned, thereby raising the total percentage of number of planted woodlands to 72%. The analysis took its point of departure in the practice of the landowners: the location of woodlands on the farm—here understood as both the shape and the size of the woodland, its location within the arrangement of the landowners’ other fields, and its location in relation to the farmhouse. The spatial location was analysed by use of maps on which landowners had indicated the location of the new woodland on their farm as part of the application form for grants. This location was digitised and integrated with the Danish Land Register within a GIS and established the first item of information of different types of location. Then, the landowners’ interests in afforestation and their actual practices were analysed—including a verification of the location given in the application form. This was done through interpretation of structured, open-ended telephone interviews. The questions were based on a developed analytical framework following the assumption that the decision of where to locate an afforestation area on the farm is a result of the landowners weighting of different factors of influence (Madsen, 2003)—a process named strategic reasoning by Van der Ploeg (1994). Information on the factors of physical conditions, farm structure and landowner values were obtained in the interviews. Subsequently, the landowners’ practices and values were combined in an iterative process to construct a typology of landowners, which was capable of explaining the location of new woodlands in the landscape.

In the present case, the construction of the typology was based on a contextual reading of the interviews combined with spatial analysis of the locations found on the maps in an iterative process. Contextual reading means that each single factor is read in this context, believing that a single factor cannot be interpreted alone because only in combination with other factors do they construct meaning (Kvale, 1996). This was done in order not to reduce the qualitative data derived from the interviews to, for example, statistical measures. In practice, the interviews were read several times, extracting keywords of importance and matching them with the location types found on the maps. The individual factors that the landowners said were important for the location of the woodland could be grouped under the headings: physical conditions, farm structure, and landowner motives and preferences. This iterative process between location (practice) and motive and preferences (values) behind the location gave rise to a picture of different types of landowners with different types of woodland location.

The best way to describe the relation between the different landowner types seemed to be the concept of continuum, because there was a gradual transition from one landowner type to the other. Two separate continua were used to describe this transition: the continuum of production-nature orientation, and the continuum of attachment to agriculture. These continua were a result of the inductive approach applied in constructing the typology. By reading through the interviews repeatedly, the two continua were found to be the main issues of importance for explaining the location of woodlands on the farm.

The continuum of production-nature orientation can be described as a line stretched from the production-oriented landowner to the nature-oriented landowner. For the production-oriented landowner, afforestation was an alternative to arable or pastoral production on unproductive areas. Examples of answers to the question of why a specific field was afforested were ‘the area is not useful for production’ or ‘the area is difficult to cultivate’. For the nature-oriented landowner, afforestation was seen as a way to secure, enhance, or create nature values in the countryside. Examples of answers to the question of why a specific field was afforested were ‘wish to do something for the nature’ or ‘create recreation areas for the town’. Further, the production-oriented landowner often had very little idea of his future use of the woodland, whereas the nature-oriented landowner often had a clear picture of his future use of...
the woodland, and had plans for footpaths, viewpoints, etc. This indicates that production-oriented landowners more often that nature-oriented landowners are engaged in forestry based solely on economic rationality. This continuum can be used to explain why physical conditions were important for the location of woodlands for some landowners while they played no role for others.

The continuum of production-nature orientation served as a first separation of the landowners into types of landowners, trying to understand their location of afforestation on their farm. This continuum makes it possible to explain the spectrum of locations, from the small, far away field to the afforestation of the whole farm. However, types of locations between these ends of the spectrum of location could not be understood within this continuum, therefore the continuum of attachment to agriculture was developed.

The continuum of attachment to agriculture describes the landowner’s practical involvement in agricultural production and ranges between high and low attachment to agriculture. The difference between high and low attachment to agriculture shows the span between the landowner who farmed all his fields himself to the landowner who leased out all his land and had no interest in agricultural production on his fields. One of the types in between is the landowner who leased out parts of his land and kept a small piece of land for, e.g. horses. With this continuum it is possible to explain the different location of afforestation areas within the group of nature-oriented landowners and within the group of production-oriented landowners.

By using the two continua production-nature orientation and attachment to agriculture for understanding the location of afforestation areas on the individual farm, five different landowner types were identified.

Agricultural producers are production-oriented and their attachment to agriculture is high. The location of the afforestation area reflects their production orientation; for example on small fields far away from the other fields or in other ways located in areas that are inconvenient for production. The subsidy for afforestation is regarded as an income to the farm ‘business’ equal to other production on the farm.

Non-agricultural producers are production-oriented but do not have a high attachment to agriculture. This means that in their orientation towards afforestation, they are production-oriented like the agricultural producers. However, as they are not highly attached to agriculture, the location of afforestation is not solely related to production factors even though they still play a role, e.g. the soil quality is often considered. Other values also influence the location, for example, the location in relation to the farmhouse.

Soft farmers have a high attachment to agriculture and at the same time their reasoning behind afforestation is nature-oriented. This means that even though their interest in afforestation mainly is nature-oriented, they still have some production concerns. Yet, the location of afforestation areas often becomes a question of securing and enhancing the amenity values of the farm while still taking production conditions into account, e.g. a small area close to the farmhouse.

Countryside residents are nature-oriented and have only a minor attachment to productive agriculture. The main income is obtained outside agriculture and often the land is leased out to agricultural production. Afforestation is a means to keep the land without having to cultivate it. Therefore, often considerable parts of the farm are afforested. The attachment to agriculture is reflected in the location of the afforestation area: pastures are kept for horses, etc., and the whole farm is not afforested.

Amenity residents are attached to the countryside through the amenity value of their farm. They are nature-oriented and have no attachment to agriculture at all. Afforestation is seen as a way to create this amenity and often the whole farm is afforested. The amenity residents are totally independent of agriculture and some have invested in the farm with the purpose of creating a forest property.

In this example, the typology of different landowners became a way to integrate practice and values by abstraction. The abstraction gave us the ability to explain both the actual location (based on map analyses) and why this location was chosen (based on contextual reading of interviews on practice and values of the individual landowner). By focusing on the individual actors, the landscape changes caused by field afforestation could be understood and hence the use of rural space could be understood in relation to the implementation of agri-environmental policies.

This type of typology is different from the integration of qualitative and quantitative data within an (implicit) positivist approach, which is often used for analysing attitudes and values among European farmers in order to explain their practices (e.g. Carr and Tait, 1991; Potter and Lobley, 1996; Kazenwadel et al., 1998). The methodological approach of these researchers being part of the research tradition dating back to, e.g. Gasson (1969) and Ilbery (1983). One of the problems with such an approach can be named ‘ascription to existing groups’. This means that land use changes carried out by individual landowners are ascribed to pre-defined groups of landowners. These groups are often statistically obtainable groups like for example, full-time farmer, part-time farmer, or pensioner based on parameters like time spent, economic input or age. Whatmore (1994) calls this method ‘taxonomic typology’ where the pre-defined groups often, subsequently are used to explain the different changes of land use by statistical tests (e.g. Munton et al., 1989; Potter and
Lobley, 1996). Within this type of research, the location of field afforestation is often explained as a result of both physical components, socio-economic components and sometimes also includes attitudes and values of the farmers. Physical components of importance can be soil quality, distance from the farm to the field, and the inclination of the field, while socio-economic components of importance can be EU-policy, national agricultural policy, and the social structure at farm level (landowners’ age, education, etc.). A statistical relation between the factors is then calculated. Regardless of the way the data are obtained, the weakness of this way of combining quantitative and qualitative data lies in the interpretation of the data. The ‘ascription to existing groups’ makes the research weak because the results can only give measurements of the probability that a landowner with certain characteristics will carry out a certain land use change (e.g. part-time farmers will more often than full-time farmers be engaged in hedgerow planting). But the research will not reveal why landowners undertake a certain practice and the research will have a low explanatory power. By limited explanatory power, we mean the low potential of using the data for establishing causal relations of why a landowner locates his woodland where he does. Further, these analyses ignore the difference between individual landowners within the statistical groupings. The factors of importance are explained in relation to already pre-defined groups. This can cause ‘chaotic conception’, where no understanding of causal relations is created (Sayer, 1998).

Hence, a typology developed within the positivist approach mentioned above will have existing groups as its point of departure. In contrast to this, the different landowner types found in the Danish example is the result. This kind of typology is of relational groups instead of taxonomic groups (Whatmore, 1994).

6. Conclusion

This paper has discussed how to study of the use of rural space by individual actors. We find it a methodological challenge due to the inherent combination of quantitative and qualitative data and use of different methods. It is argued that analyses should be based on individual actors in the rural space. The limits and possibilities imposed on rural areas by the structures of economy, ecology, politics, etc. is acknowledged but it is through the understanding of the individual actors’ practice and values that the use of rural space can be understood. In order to be able to combine qualitative and quantitative data, it is important both to be aware of the philosophical implications of the methods used and to have interplay between methodology and philosophy throughout the research process. Hence, we do not believe in an integration of different epistemologies but in the possibility of combining methods that have been used within the same philosophical framework.

The two examples illustrate how we have studied practice and values of individual actors in order to create a comprehensive understanding of the use of rural space. In the first example, it is shown how method triangulation can improve our understanding of the use of pastoral area in Senegal. Iterative abstraction is used to construct ideal types of pastoral livelihood strategies. Without knowledge of how mobility is used in the context of livelihood strategies, it is difficult to understand the use of mobility and this knowledge can only be obtained by studying both practice and values. In the second example, the location of field afforestation in Denmark is understood by developing a typology of landowners. The typology explains both the type of woodland location and why this location is chosen. By focusing on the individual actors, the landscape changes of field afforestation can be interpreted and hence the use of rural space can be understood in relation to the implementation of agri-environmental policies.

Both examples show the importance of looking at the individual actor. In the example from Senegal it was found that even though the values of the pastoralists are relatively homogeneous, there are huge differences in the personal preferences and hence in practice. These differences are only revealed and understood using qualitative methods emphasising the individual and male/female mediation of traditions, thoughts, and beliefs that prevail in the society. In the Danish example it was found that the group of landowners applying for afforestation grants have a wide range of practices and values. Differences that we need to acknowledge if we are to fully achieve the goals of agri-environmental policies. As the example shows a combination of qualitative and quantitative methods are a way to reveal these differences.

While the examples are worlds apart in their empirical focus, they illustrate that the methodological approach discussed in the first part of the paper is valid for studies in both developed and developing countries. In both studies, abstractions have been constructed in interplay between philosophy and methodology. The two examples show how the study of practice and values of individual actors can enhance our knowledge about the use of rural space.

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