

Chapter Two

Literature Review



Fig. 2.1: Vat of fermenting grape must at La Bianca.

2.1 Introduction

In this chapter I situate the empirical and theoretical themes of this thesis within the existing literature. I suggest that existing approaches to the study of wine making, and to agri-food production more generally, have been underlain by the modernist paradigm (Latour 1993) which separates human and nonhuman agency, and posits a world of passive materiality only activated by human intent. As a result, and in spite of multiple calls for an overcoming of this agential binary in agri-food studies, the vitality of materials in production processes, whether considered as nature or as technology, remains largely unexplored. This is a crucial gap that this thesis seeks to address by focusing on and exploring the role of materials as active participants in production practices and discourses of organic wine making. This thesis seeks to demonstrate how the theoretical approaches of actor-network theory and post-humanist studies can be applied to and extended through an engagement with agri-food production.

I begin with a review of the literature on wine production and markets, highlighting how in these accounts the co-existing and co-constituting spheres of 'nature' and 'society' are consistently held apart in spite of the acknowledged centrality of natural processes to the economic, social and cultural significance of wine. I then suggest that, similarly to wine-focused studies, agri-food literature more generally has always had a difficult relationship with the materiality of the processes and products it takes as the focal point of its analysis. The predominant focus on power inequalities in the increasingly liberalised and globalised worlds of agri-food production and provisioning has left the impact of 'nature' on these realities under-theorised, relegating it to the status of 'backdrop behind the stage on which the human drama is conducted' (Busch and Juska 1997, cited in Murdoch et al. 2000 : 112). Although authors such as Jonathan Murdoch, Sarah Whatmore, David Goodman and others have been urging a recognition of nature as more than a resource for and/or obstacle to processes of capital accumulation in agri-food, there is a need for more empirical investigations of nature as meaningful in the production of food. While agri-food studies have produced much valuable critical work on the power of institutions and market organisations in food commodity chains, the field would further benefit from examining the material processes and practices which support or challenge these networks of power. In the area of alternative food networks scholarship, important contributions have been made to the understanding of the embodied and affective relationships between consumers and foods. These insights could now be further extended to consider the spaces and practices of production beyond their political and 'cultural' dimensions.

While empirically this thesis is situated in the agri-food field of inquiry, its intellectual roots, and the key debates to which it contributes, lie in actor-network theory and post-humanist studies. I argue that post-humanist studies have made excellent and very important contributions to the conceptualisations of non-humans as more than passive elements of human-driven endeavours. This work would now benefit from an engagement with the spaces and practices of agricultural production. Post-humanist studies have tended to focus on non-humans which are not only 'big like us', but which are also 'animal like us', leaving the more

mundane and perhaps less accessible relations between humans and plants, and humans and microbes, relations which are discussed in this thesis, largely unexplored (with an important exception of Paxson (2008) and Hird (2009) explored further in section 2.5.3 of this chapter, and Williams (2011)). Secondly, and more importantly, the bulk of post-humanist encounters has set out a particular aesthetic of non-human meeting, positioning it first of all as an individual experience, as well as an experience which is relatively open-ended and focused on learning, openness and play. This has led to important theoretical insights (see e.g. Bennett 2001, Haraway 2007, Whatmore 2002) which now could be usefully applied, tested and extended through further empirical research. The nitty-gritty realities of human-nonhuman encounters in the context of production, in the context of making 'stuff' for sale, where both the risk and the stakes are undeniably higher than in individual human-nonhuman encounters, could benefit from much more empirical attention (see Holloway 2007 on cows for an important exception). The context of production is immensely relevant to post-humanist approaches, and an inquiry into spaces and practices of production as both expressive and constructive of ethical debates has radical potential. In this thesis I thus extend post-humanist inquiry into the worlds of agri-food production through a focus on goal-oriented and ethical relations between humans and non-human 'things' in the context of organic winemaking.

Having critically engaged with the literature in the agri-food and post-humanist canons, I introduce key works which have allowed me to 'make matter *matter*' in organic wine production. My thinking about the obstinacy and creativity of the material world has been strongly influenced by the work of Andrew Pickering (1995, 2005), who applied ANT's principle of symmetry of action to the understanding of goal-oriented encounters with non-human agency such as industrial production. The distinction Pickering draws between long-term goals characteristic of human action, and the temporal emergence and mutation of these goals in sensitive encounters with the material world has informed my understanding of agricultural and oenological work in organic wine making and sales. My engagement with the ethical dimension of these heterogeneous practices has been influenced most strongly by the work of Karen Barad (2007) and Annemarie Mol (2002). These two authors, while coming from different directions, arrive at similar conclusions with regards to the inter-dependence of action and ethics, arguing that once we accept that every act contributes to the materialisation of a particular future, 'what to do?' necessarily becomes a political and ethical question (Mol 2002: 177). This ontological politics approach which prioritises practices over discourses and is attentive to the enacted and non-normative dimension of ethics has allowed me to think beyond codified ethics in my analysis of organic wine production, and to appreciate the ethical import of human-nonhuman relations as constitutive and expressive of ethical stances. Importantly, Barad's and Mol's relational and performative understanding of ethics still allows me to retain human exemptionalism (*sic* Murdoch 2001), and acknowledge the import of transcendental concepts such as 'nature' on ethical practices and discourses of organic wine producers.¹ Finally, I draw on the work on performative markets by Callon (1998), Çalişkan and Callon (2009, 2010), and Gregson (2010) in arguing that practices of production and sales are

¹ For a discussion of the possibility of retaining human exemptionalism in post-humanist approaches see section 2.6.2.

constitutive of markets in the same way they are constitutive of ethics. Thus my thesis engages critically with literature in the performative markets canon, suggesting that vitality of materials in market contexts need not always be silenced, but it need always be acknowledged.

In this chapter I contend that while authors such as Goodman (1999, 2001), FitzSimmons and Goodman (1998), Whatmore (2002), and Whatmore and Thorne (1997) have been calling for an ontological shift in agri-food studies, the contributions to an alternative and more symmetrical understanding of the practices and debates of agri-food production have remained mostly limited to theoretical engagements both within the agri-food studies and post-humanist studies canon (work by Holloway (2002, 2007), and Stassart and Whatmore (2003) being important exceptions). The power of the ontological shift, which is the heart of ANT as both empirical and theoretical lens, has so far not been sufficiently explored in the area of agri-food. In this thesis I respond to these calls through an empirical and theoretical examination of what it means to take the materialities of agricultural production seriously, both as significant contributors to the production and marketisation processes, and as elements of and contributors to ethical debates and approaches of producers. Thus I aim to work towards a productive engagement with the thorny 'problem of nature' in agri-food production.

2.2 Wine in human worlds: a short review

Wine and wine production are, in many ways, a natural topic for geographical enquiry. Winegrowing combines intensely local and traditional as well as scientific knowledge, is relentlessly seasonal, and involves significant time lags between the production of value and its realization through the sale of the finished product. The markets are characterized by a large number of tiny producers and complex distribution chains with severe asymmetries in relations of power throughout, and are regulated by a variety of local and international institutions through which quality is carefully monitored and publicly evaluated and discussed. Wine is the original 'local' commodity, and discourses of winemaking were always characterised by a strong focus on the physical environment and place of production, and the technological processes the product undergoes. At the same time, winegrowing has always been a focal point of powerful cultural, ideological, economic and political discourses. The fascination of wine lies in its diversity, which is reflected on a range of scales, from differences between wines made in adjacent vineyards to the global variation between wines of different continents (Unwin 1991). Both 'natural' and 'social' processes are seen to contribute to this diversification, to its political, cultural and economic maintenance, and to its valuation in the context of markets. While wine production is ultimately an agricultural activity, the cultural and economic significance of winemaking in Europe and increasingly all over the globe has resulted in a product which raises powerful emotions in producers and drinkers alike.

As a result, wine and winegrowing has attracted a good deal of attention from writers within and outside academia. In their 1982 review of literature relevant to geographical study of wine, Dickenson and Salt listed a number of approaches which have been applied to the study of this topic. In their list they included: the study of the physical environment of winegrowing;

the historical diffusion of wine and viticulture; the economic geographies of cultivation and marketing; the study of the political influences on trade and production; and, finally, the study of cultural perceptions of landscapes, products and peoples. The trends in the study of wine delineated by these authors still apply today, and enact a split between subjects considered appropriate for natural science, and those considered appropriate for social science analysis. On the side of natural sciences, all aspects of the physical environment of wine production, from soil composition through vine physiology and health, to weather and climate patterns, are intensely studied. Additionally there is an ever growing body of research in oenology dedicated to the most in-depth studies of the physical and chemical processes relevant to wine fermentation, maturation and other winemaking processes (e.g. Jackson's (2008) *Wine Science*). Some of these scientific texts were relevant to my understanding of vineyard and winery processes, and are therefore cited in the chapters. In the social sciences, Tim Unwin's *Wine and the Vine*, published in 1991, continues to be a stand-alone comprehensive resource for situating wine geographies of Europe and the world in their historical and geographical context. The book is unique in tying together historical, economic, cultural, and to a lesser extent physical geographies of wine in a way that has not been achieved, or indeed attempted, since in Anglophone academia. Instead, writing about wine and wine worlds tends to fit these into the tight disciplinary categories, enacting a strong division between the 'cultural' understandings of wine in such texts as Theise's (2010) *Reading Between the Wines*, and the 'utilitarian' approaches of intensely technological and market oriented studies such as Jenster's (2008) *The Business of Wine*.

In the following section, I undertake a review of the work by authors who attempt to walk a line between these two extremes, and in which scholars have worked to create meaningful connections between the 'natural' and 'cultural' dimensions of wine production, and which contribute to the understanding of wine and winegrowing as a socio-natural phenomenon². I therefore situate my thesis within ongoing attempts by multiple authors at understanding the creation of meaning and value with relation to the places and practices of wine production. However, I distance myself from these firmly human-centred approaches, which continue to depict a modernist world of production in which materialities of nature are conceptualised as either resources for, or obstacles to, capital accumulation. In this thesis I argue that winegrowing must be understood as a meaningful and goal-oriented but also heterogeneous action, taking place in a material world of things which constitute, enable and influence these goal-oriented interactions. In all the texts reviewed in the following section, the underlying ontological position, which separates the natural and the cultural as if they were two distinct domains, prevents a serious engagement with the materials, practices and discourses of winegrowing.

² I should point out here that this review is limited to literature available in English. While I have undertaken literature searches in Italian, to my knowledge the texts in Italian fall into the business, viticulture and oenology or individual narrative categories described above, and therefore are of only limited relevance to this thesis.

The distinctiveness of the wine industry lies in the much celebrated and much contested connection between the place of production and the cultural and economic value of the wine, a connection originally made law through the Denomination D'appellation Contrôlée system established in France in 1935.³ The bulk of social science literature on wine and winemaking takes a strongly socio-constructivist position to investigating this powerful link. Scholars have taken it upon themselves to 'demystify' the worlds of wine and to uncover how political, economic and ideological interests work to create places of winegrowing and associated cultural and market values. In this constructivist vein scholars have argued that the territorial certification systems obscure both the long-term human influence over vinegrowing landscapes (Moran 1993), and the political power struggles which drive the establishing of and changes to these frameworks (Gade 2004). This is achieved through a seemingly obvious translation of natural environmental attributes of a territory to the characteristics of a wine produced there. This reading of *terroir* as a deeply cultural and historical rather than 'natural' phenomenon was also put forward by Hinnewinkel and Velasco-Graciet (2004), who sought to 'defetishise' French *terroirs* by uncovering the political interests which go into the establishing of certified territories. The history of European wine *terroir* is presented as a history of power struggles, and the contemporary struggles of New World producers to establish similarly effective land-value links are also depicted in this vein. Overton and Heitger's (2008) and Hayward and Lewis's (2008) studies of New Zealand wine appellations called attention to the power of capital in the socio-cultural creation of place and value. Echoing historical observations by Ulin (1996) and Unwin (1991), in the contemporary context Overton (2010) demonstrated how territorial certification in wine may lead to a dominance of entrenched economic interests in the emerging New Zealand wine industry. The pervasiveness of tradition and land as guarantors of wine quality can lead to unexpected consequences, as shown by a recent study of Australian winemakers. These recent arrivals at the winemaking scene see the need to appeal to 'tradition hungry' consumers, and so mobilise landscapes and histories which bear no connection to vitiviculture in their branding and promotional strategies to create a historical context for their winegrowing activities (Alonso and Northcote 2009).

The relationship between the geographic diversity of wine and winegrowing and the creation of individual, local and national identities has been another important and relevant area of study. The social constructions of space debated by the authors mentioned above was then taken up by scholars interested in the consumption of wines, who noted how the actors involved in the processes of localisation of products and practices utilise *terroir* and its produce as 'a platform for self-identification' (Demossier 2011: 687). In his study of French cooperative winegrowers, Ulin (2002) urged a recognition of the cultural value of vitivicultural labour as constructive of individual identities. His insights into the conflict between scientific and artisan knowledge in winemaking are especially relevant to this thesis. The connection between *terroir* and identity was also discussed in Guy's (2002) work on the champagne industry, where she argued that the drinking of wine and the geography of *terroir* became "fundamental

³ Although there are some effectively similar cases that pre-date the official AOC system, such as the long-standing designations given to individual vineyards in Burgundy (I thank Prof. Michael Summerfield for pointing this out).

references" for French national identity by the early 20th century (p. 42-44). In a paper on Burgundian folklore, Whalen (2007) further examined how the connection between geography and culture was employed as a powerful ideological tool in France in the interwar period to maintain the status quo with regards to rural inequality. He particularly demonstrated the lasting impact of the work done by folklorists in refashioning and reforming modern France's image of its cultural traditions. In particular, he demonstrated how agricultural products, such as wine, became to be seen as embodying France's diverse geographies and, by extension, cultural traditions. Demossier's historical and cultural examination of the wine drinking culture in France (2010) yielded further insights into the political and ideological as well as economic interests involved in transforming wine from a staple element of a daily diet to an object with high symbolic and cultural meaning, and a significant element of national and individual identity. In spite of the importance of their insights into the construction of personal and collective identities through vitivincultural work, both Ulin and Whalen focus on the purely vocalised and symbolic dimensions of identity discourse, and do not engage with the physical, material environment of vitivincultural work as constructive of the local, regional and national identities through a shared field of practice. This narrative is interestingly unsettled in a recent paper on the Tuscan Brunello scandal by Certoma (2011), in which she employs the material semiotic approach to present the networks of cultural and material production of wines as fragile arrangements of heterogeneous elements, with a potential to disrupt the romanticised visions of rural idyll embodied in the image of Brunello wine.

Changes in the architecture of wine markets have been frequently analysed by scholars in terms of a local/global binary, in which the local (traditional, small, authentic) is portrayed as being taken over or threatened by the global (modern, big, constructed) (see for example Anderson et al.2003, Anderson 2004, Campbell and Guibert 2006, Hayward 2008). The prevalent interpretation of the changes in the wine industry as clear signals of economic globalisation of wine production and sales has led many authors to worry about the future of Old World producers. However, this prevailing analytical lens of global versus local has also been criticised. Lagendijk (2004), in a move that echoes Goodman's (1999) critique of the agri-food studies, suggests actor-network theory as a prime analytical tool to dispense with the global/local dichotomy prevalent in most writing on wine markets. He notes that 'what symbolises 'globalisation' – global market competition, stock trading, financial flows – is performed in interconnected practices and stories of everyday local life' (p 11). Instead of dealing with 'embeddedness' (in markets, in politics, in legal structures) and contexts (economic, social), he argues for a reading of the wine industry as a series of connected locales, 'hooked up' to circulating entities such as markets, quality regimes, and technological innovations. His observations certainly ring true in the context of this thesis, as is explored in Chapter Seven.

The labour of winegrowing and the power struggles in the economies of wine production have also been a topic of scholarly interest. Pratt's (1994) study of small Tuscan winegrowers demonstrated the power of capital in creating 'tourist' landscapes and promoting the region as a high quality wine designation. He further depicted the effects the Tuscan 'wine boom' fuelled

by external capital had on traditional producers, who had to adapt their production to either 'niche' or 'bulk' models, or become wage-labourers (for an alternative reading in praise of the 'virtuous cycle' of quality wine production in Tuscany see Mattiacci and Zampi 2004). Social inequality and agricultural change were also topics discussed in Ulin's (1996) study of French cooperative winemakers. More recently, the potential for value creation in rural areas through production of wine has led authors to consider the issues of labour in the winemaking sectors of New World countries. The shortcomings of economic empowerment in achieving durable social change were highlighted in McEwan and Bek's (2006) study of the South African wine industry, where racist ideologies and discourses were seen to prevail in spite of progressive legislation.

The debates about labour have also proved to be a point of entry to discussions of the ethical dimensions of wine production, and the questions of alternative trade in wine. McEwan and Bek (2009) examined the Fairtrade and organic certifications at work in South Africa, concluding that 'rearranging commodity networks around social and environmental values does not necessarily make them less exploitative' (p. 264). Importantly, the authors noted a dissonance between the 'abstract' ethics of certifying bodies on the one hand, and the moral experience of workers on the other, a dissonance obscured in the certification 'regime'. However, new information and communication technologies may make it possible to address this problem and to grant individual producers 'moral power' in the commodity chains by connecting them directly with consumers of their Fairtrade wines, as demonstrated by Kleine's (2008) study of Chilean Fairtrade wine producers. While these studies have provided useful reading, they consider ethics as only a property of, and privilege for, autonomous human individuals. In this thesis, I engage with the relational ethics approach (Whatmore 1997) to consider ethics as emergent from and localised in interactions, as well as informed by transcendent concepts such as 'nature' (I discuss this further in section 2.6.2).

In spite of the connection between the physical and social environments being always present in the studies of wine and winemaking reviewed above, the materialities involved in the becoming of wine, the heterogeneous practices of its production and sales, and the intensely local and embodied relationships between producers and 'things' are consistently omitted. This silencing of materials and materialities of production beyond utilitarian and scientific approaches is by no means exclusive to the study of wine, as I discuss in my review of agri-food literature below.

In the following section, I consider how the intellectual and empirical focus of this thesis on vital materialities of organic wine production is positioned within the wider legacy of agri-food literature. In what follows I undertake a review of the key theoretical approaches in the field of agri-food, noting the dominance of the modernist paradigms, and commenting on some of the significant contributions to the more materialist, post-humanist understanding of agri-food production. I note how a change towards more materialist understandings of food production is rooted in an increase in environmental and health concerns in agri-food debates, and I suggest that 'nature' and 'the body' as sites of metabolic interactions and inter-dependencies

have consistently disturbed the modernist narratives of classical agri-food studies. I then move on to the area of post-human and material-semiotic literature where the bulk of intellectual framing of this thesis derives from. I suggest that interest in practice and materiality prevalent in these studies allows me to make sense of the heterogeneous character of organic wine production while never losing sight of the ethical and moral narratives.

2.3 Agri-food literature

Agri-food studies have always had a difficult relationship with the materiality of the products and processes they take as the focal point of their analysis. Since the nineteen seventies, scholars have been concerned with the progress and consequences of the globalisation of food production, predominantly conceptualised as an unfolding of the capitalist logic of accumulation (Murdoch et al. 2000). As a result a great deal of work in agri-food studies focused on the examination of the strategies of multinational companies, government actors and research and development agencies for an overcoming of natural and other restrictions to the globalisation of food systems (Morgan et al. 2006). A powerful conceptual tool for the analysis of the changing landscapes of food has been political economy, which has been usefully applied to illuminate the connections between technology and policy, patterns of consumption and production, social justice, and the directions of structural change (Goodman and Redclift 1991). It was in political economy approaches that the pervasive analytical tool of commodity chain was developed from its origins in the work of Hopster and Wallerstein on the one hand, and Friedmann on the other (Jackson, Ward and Russell 2006). However, the analytical vocabulary of political economy has also resulted in a predominant conceptualisation of nature as essentially passive in the face of the unfolding socio-economic processes (Murdoch et al. 2000).

The understandings of agri-food development rooted in structuralist political economy were seen to be challenged by the rise of 'alternative' food production and provisioning systems (Morgan et al. 2006). The top-down conceptualisations of power dominant in classic political economy analysis of agri-food systems seemed to be defied by the pervasive power of family farms, consumer movements, and even diet fads (Wilkinson 2006). The changes in consumption patterns as a result of health scares and concerns over nutrition, and the connected rise of interest in 'quality' of foods brought scholars to grapple more explicitly with the 'special component' of food and food production, nature. Nature and its role in food production has been then variously considered as the 'organic properties' of the food-as-commodity (Arce and Marsden 1993), as the metabolic relationship between human and non-human bodies through eating (Goodman 1999, Stassart and Whatmore 2003), or as the embeddedness of food commodities in the conditions of their production (Murdoch et al. 2000). These new conceptualisations were proposed as alternatives to the dominant view of nature as a constraint on the expansion of capital. Considering the numerous attempts at 'refashioning' nature, and the acknowledged need to overcome binary understandings of macro/micro, local/global, conventional/alternative and natural/social in agri-food studies, perhaps the notion of 'nature' could be usefully superseded by the idea of (relational) materiality, that is the presence and activity of various sociable non-humans in space- and

time-specific ways. Focusing on materiality and the practices of 'dealing with' the material world without necessarily invoking the nature/culture dualistic labels gives, I argue in this thesis, a truer, if more complex picture of agri-food realities.

In the following section, I focus on what has become the most prominent concept for navigating the global networks of influences in agri-food (and beyond) (Jackson, Ward and Russell 2006), the commodity chain approach. Commodity chains have been applied in a number of guises, of which, after Leslie and Reimer (1999), I shall consider the three most salient: Global Commodity Chains, Systems of Provision and commodity circuits. I also review the contribution of Global Value Chains approaches, which have been widely applied in the studies of the wine sector. I then consider the work of those scholars within the agri-food cannon who have challenged the uni-linear accounts of food production as determined by a particular logic of accumulation, and who have pointed to the diversity of agricultural and food practices. In particular, I examine the work of those authors who have been working towards post-modernist understandings of agricultural production.

2.3.1 Commodity Chain approaches

A decrease in the importance of agriculture as a sector, and a growing interest in the processes of globalisation are usually pointed to as key factors in the widening of focus in agricultural geographies beyond sector-specific analysis and towards critical inquiries into global production and provisioning networks. An important element of agri-food analysis has been the employment of the Global Commodity Chain (GCC) approach, which has proven to be one of the most persistent analytical approaches to agri-food production in academia and beyond (Jackson, Ward and Russell 2006). The GCC was developed from the work of Wallerstein and Hopkins, and proposed as a tool for tackling the complexities of the 'global factory' landscape by Gereffi and Korzeniowicz (1994). The authors suggested that GCCs would enable geographers to critically engage with the classic concerns of geographic enquiry, the power of capital and social inequality, on a global scale, and create 'nuanced analysis of world-economic spatial inequalities in terms of differential access to market and resources' (Gereffi and Korzeniowicz 1994: 2). Importantly, GCC studies took a critical approach to the analysis of institutional power in determining allocation of economic resources, thus contributing to an ongoing critique of power relations in production visible in political economies of agriculture (Hughes 2000). However, GCCs have been critiqued for their linear and reductionist character, and for the privileged position they gave to production spaces as sources of meaning and 'truth' about commodities, without engaging with the spaces of distribution and consumption on the same terms (Leslie and Reimer 1999).

A later development of the GCC studies, and one very relevant to the wine sector, has been the Global Value Chain (GVC) approach. While GCC studies stressed the hierarchical power relationships within agri-food provisioning, in Global Value Chains it was recognised that value can be produced at different stages of the commodity's journey, and retail consumption spaces and governance structures were given particular attention (Gereffi et al. 2005). In the agri-food sector, GVC studies continued the task of mapping how power and rewards in the

production-provisioning system are embodied and distributed, what entry barriers characterise GVCs and how unequal distributions of power and rewards can be challenged in favour of labour, small producers and/or developing countries (Ponte 2009). The importance of value in the wine industry has resulted in GVC being adopted in numerous studies of wine 'commodity chains'. In particular, the GVC approach has been adopted by researchers seeking to better understand the power relationships between 'core' consumers in the Northern Hemisphere, and 'peripheral' producers in the Southern Hemisphere. For example, Gwynne's (2008) study proposed that that in spite of the high retail concentration in the UK, Chilean producers' 'scramble for value' is facilitated rather than inhibited through strong relationships with UK supermarkets via technological upgrading and joint marketing strategies. Ponte (2009) mobilised the GVC approach to demonstrate how differences in quality governance between Northern and Southern wine producers leads to an entrenchment of privilege and inequality between those two regions. Similarly Sánchez-Hernández (2011) compared two food value chains, Spanish wine and Norwegian salted cod, to demonstrate the importance of shared conventions across and along the chain to the success (or failure) of the ventures. GVC studies have successfully extended the more limited remit of GCCs, encompassing institutional, political, social and cultural factors and not just economic ones in how power and privilege are distributed in the production and provisioning of foods. However, by focusing on the 'social' dimension of value production they continued to enact the social/natural ontological split of commodity chain studies, and to write the material spaces of production as self-explanatory and natural.

Many of the shortcomings of the GCCs were, for Leslie and Reimer (1999) rectified in the Systems of Provision (SOP) approach, developed by Fine and Leopold (1993). SOP analysis focused on particular commodities and their specific systems of provision, and was marked by an increased attention to the spaces of consumption. For Leslie and Reimer the SOP approach enabled a greater understanding of the reflexive relationship between the spheres of production and consumption, and the cultural meanings and values attached to commodities, going the furthest in avoiding the 'productionist pitfall' of commodity chain approaches. Nonetheless, both GCCs and SOPs have been critiqued for their meta-scale methodology, and for the superficial engagement with the geographical and cultural dimensions of their analysis (Hughes 2000, Murdoch 1994). Arce and Marsden suggested that from an anthropological and sociological perspective, these 'system' approaches fell into mechanistic determinism, and failed to appreciate how 'contextualised human agency – that is, people coping with the uneven nature of contemporary economic and social change' (1993: 296) influences the architecture of agri-food networks, at production and consumption ends alike.

The linearity and determinism of the 'chain' approaches gave rise to the notion of commodity circuits. Origins in production, Cook and Crang (1996) proposed, are always constructed, and every act of production takes place in an already established and changing reflexive network of influences. As a result, meanings are constructed in a combination of different processes and at different locales. The commodity circuits approach favoured cultural analysis, focusing on the meanings that are attached to commodities at the different stages of the commodity circuit, and on the transformation of these meanings within and across the different stages,

including consumption (Morris and Kirwan 2010). Commodity circuits emerged in a period of growing interest in consumption and cultural meaning of commodities, and were therefore less concerned with the critique of power relations within food production and provisioning, a stance critiqued by Leslie and Reimer (1999). From the point of view of materiality, while GCCs, GVCs and SOPs privileged human intentionality by placing the capitalist drive to profit and control as the key variable in the becoming of commodity networks, commodity circuits continued on the same path by valorising only the symbolic and cultural meanings of commodities, without consideration for their materiality, either in production or sales. In the following section I turn to those studies in which the 'peculiarity' of food production and distribution – its embeddedness in material and temporal cycles of nature, and the organic character of food as commodities – were given more explicit attention, and which therefore have informed my engagement with material practices and processes in organic wine production.

2.3.2 Influence of ANT on agri-food literature and the rise of Alternative Food Networks

Actor-network theory (ANT) and the writings on Michel Callon, Bruno Latour and John Law, some of which I review later in this chapter, have provided a way for researchers in agri-food studies to engage with the thorny problem of the 'real, ontological existence and causal efficacy and agency within history, of those entities and processes we call "natural"' (Castree 1995: 20) in a novel way. Critical of the 'heroic' and 'deterministic' commodity chain and systems approaches, and strongly influenced by ANTs intellectual agenda, Whatmore and Thorne's 1997 article 'Nourishing Networks' was a watershed moment for agri-food studies. Whatmore and Thorne critically engaged with the existing approaches to studying agri-food production and distribution, critiqued their disregard for 'contextualised human agency' (Arce and Marsden 1993) and a lack of interest in non-human agency, and argued for an approach which is more critical, more attentive to ethical dimensions, and more empirically informed in its engagement with agri-food networks. Global markets and institutions which have been a source of such excitement in agri-food studies, they argued, are 'woven of the same substances as the more humble everyday forms of social life so often consigned to the 'local' and rendered puny in comparison' (211). It was time, they declared, that agri-food studies looked down rather than up, and recognised that the global systems were in fact material, embedded, situated interweavings of people, artefacts, codes, and living things, and that their survival and change depended on their capacity to maintain connection between human and non-human actors across the world (212). Intentionality and meaning, they argued, should not be looked for outside these heterogeneous arrangements, but should be understood as an outcome of their changing configurations.

At the same time another important paper, FitzSimmons and Goodman's (1998) 'Incorporating nature', also strongly influenced by the ANT ontology, engaged with the problems the modernist paradigm implicit in agri-food studies presented to engagements with the sphere of agricultural production. Existing approaches to agricultural production, they argued, have either failed to consider nature in agriculture beyond 'an exception' to industry-derived narratives, or have dismissed it as a significant presence on the grounds of ecological

determinism. However, nature in agriculture is anything but irrelevant and 'obvious', and therefore agri-food scholars would do well to work towards approaches which neither override human intentionality, nor ignore the potency and importance of the material domain of production, and which consider nature as 'both a material actor and a socially constructed object'. They drew on Latour's (1993) and Haraway's (1991) concept of hybrids to demonstrate how alternative readings of bovine spongiform encephalopathy (BSE) and anorexia can allow the inter-corporeal relationship between 'all things social' and 'all things natural' to come to the fore.

The two papers, and the rich vein of scholarship which followed, marked a turn for agri-food geographers towards a more materials-centred engagement with the agri-food sector. The end of the 20th century saw increasing concerns about the 'nature' of agri-food, both in terms of the ecological dimension of producing and distributing foods, and as the physical make-up of food products, and the related issues of quality and safety. Food scares such as the BSE crisis, the contested genetic modification of food-stuffs, combined with a growth of the organic and local production movements have led to a proliferation of 'alternative' provisioning networks in the global North. Scholarly interest in these new developments has led to an emergence of a range of new approaches and empirical fields for agri-food scholarship, most notably in the studies of Alternative Food Networks (AFN). An important vein of scholarship within AFNs took as its focus organic production and consumption. I argue that in AFN literature it was the studies of consumption rather than production which have yielded the most results in terms of considerations of materiality in agri-food. However, I propose that their focus on the aesthetics of food prevented them from engaging with the 'stuff' of agri-food as significant, vital, transformative and active.

2.3.3 Alternative Food Networks

Since Whatmore and Thorne's (1997) call for alternative engagements with agri-food geographies, both theoretical and empirical, the field has grown considerably and not at all in a linear manner. Goodman (2003) drew a distinction between how alternative food production and provisioning practices have been conceptualised in the North American context, where their radical potential was considered promising (see e.g. Guthman 2000), and in Europe, where the turn towards 'quality' in food production has been seen as an extension of more endogenous concerns with product and place. Maye et al. (2007) suggest this has resulted in a philosophical split in alternative food geographies, with much of European scholarship focusing on 'product and place' alternatives, with concerns about new pathways for rural development through alternative understandings of value and quality (e.g. Goodman 2004), while the more US-centric 'process and place' alternatives have more interest in critical socio-economic interrogations of supply chains with an end of improving livelihoods and local well-being (e.g. Watts et al. 2005).

The organic foods movement has been an important element in the emergence of alternatives to agri-industrial food production and provisioning, and organic foods have attracted a lot of scholarly attention. On the one hand, organic food production seemed to offer a potential for

politicising consumers who, fearing ingestion of chemicals and/or genetically modified food-stuffs, would 'vote with their bodies' (and their wallets) for alternatives to agri-industrial production (DuPuis 2000). Moreover, organic production was often coupled with local food provisioning, and attracted the interest of academics in its potential to thicken producer-consumer relationships, and strengthen local communities through socio-environmental care and stewardship (DuPuis and Goodman 2005). Critical research by Guthman (1998, 2000) into organic production in California gave birth to what has been called a 'conventionalisation debate', in which fears were voiced over the 'takeover' of organic production by agri-food industry, and the resulting weakening of its radical potential (e.g. Goodman 2000, Allen and Kovach 2000). The implicit normativity of the literature on organic food networks has been critiqued by Barnett et al. (2005) and Clarke et al. (2008), who instead call for a recognition of the complexity and ordinariness of the ethical concerns associated with producing and consuming organic foods. These complex dimensions of the ethics of organic foods have been usefully explored by Kaltoft (1999) and Vos (2000) amongst organic producers, and by Eden (2008) and Roe (2006a) amongst consumers.

A key focus in AFN literature has been the, still hotly contested, concept of 'the local', with special attention having been paid to the connections between locality, nature and quality (e.g. Morris and Kirwan 2010, Murdoch 2000, Murdoch and Miele 1999). Importantly, food emerges from these studies as a mix of natural and social (Fitzsimmons and Goodman, 1998; Goodman, 1999; Murdoch et al., 2000); however, the mechanisms of its emergence as such a 'mix' are not interrogated. The 'normative localism' of some AFN studies has also been critiqued as it has been suggested that 'alternative' foods and food spaces can be elitist and exclusive (DuPuis and Goodman 2005, Guthman 2004). AFN literature has been also critiqued for unreflexive adoption of the 'knowledge fix' (Eden et al. 2008) as a solution to the social and environmental injustice of the 'conventional' agri-food sector, with Morris and Kirwan (2010) arguing that 'alternative' foods in fact create their own fetishes. Importantly, the division between 'alternative' and 'conventional' production and distribution systems has also been critiqued, and studies have shown the more entangled and complex ways in which 'alternative' producers and consumers navigate the spaces of markets (Blake et al. 2010, Clarke et al. 2008, Holloway et al. 2007). Also in this thesis I argue that ethical 'labels' should be primarily understood as market tools, not a reflection of the full ethical identities of producers, which are more complex than the 'label-centred' understanding allows, and rooted in the relational ethics of the material practices of production.

Much valuable work in the AFN canon has been done on the discursive, 'cultural' and political dimensions of alternative food provisioning. However, the understanding of materialities of production practices would benefit from much more investigation. More attention has been given to food as 'stuff' in the studies on the consumption of 'alternative' foods. Eden et al.'s (2008) study of how consumers judge and talk about food showed that the 'ethical' meanings put forward by certification bodies are easily subverted and re-appropriated by consumers. The authors also briefly noted the importance of the materiality of foods to their ethical and aesthetic appreciation, however did not develop this point further. The importance of the affective relationship consumers have with food to its 'edibility' was elaborated on by Roe

(2006a), where she drew attention to the importance of the aesthetic qualities of food, and the 'creative energies, the tacit knowledges, and the skills' (467) which are a result of an embodied involvement with the foodstuff. In another paper, Roe (2006b) took into account how these material qualities of foodstuffs impact on practices of cooking. In an important paper Stassart and Whatmore (2003) applied the notion of inter-corporeality of agro-food (FitzSimmons and Goodman 1998) to shed light on how consumers' knowledges about the materiality of beef impacted on production spaces. The importance of aesthetics to 'alternative' food consumption was further discussed by Murdoch and Miele (2002), who suggested that it was useful to think about the sensual dimensions of food consumption in analysing the alternative food market. This point was further developed in a series of articles by Hayes-Conroy and Hayes-Conroy (2008, 2010) and Hayes-Conroy and Martin (2010) who analysed the spread of the Slow Food movement as a successful mobilisation of the 'visceral body', of 'mind and gut', of consumers. Finally in an insightful discussion of wine drinking and listening to music Teil and Hennion (2002) analyse the experience of the amateur, concluding that in the light of the amateurs' experience taste emerges as a relational effect of objects, experiences and palates.

The articles which focused on consumption of 'alternative' foods have yielded important insights into how people interact with edible stuff as 'visceral beings', as embodied minds. However, the question of how the material qualities of foods matter in the context of production, how they contribute to the emergence of goal-oriented practices, and how they may impact on the architecture of productive spaces and markets, are questions which have been rarely addressed so far either in AFN studies, or in other areas of agri-food literature. In spite of the many theoretical contributions, and numerous calls to consider how 'matter comes to matter' in agri-food studies, treating material nature 'seriously as a material entity and actor in history, without hypostatizing it as a fixed, unchangeable, universal given separate from society' (Castree, 1995 : 25) continues to be a challenge in studies of agri-food. While on the one hand studies of production and distribution of foods often 'configure the geographies of food as unilateral transactions of socio-material value from field to plate', treating food as 'little more than the terminus of the crop' (Whatmore 2002: 123), studies focusing on the consumption of foods often fall into overtly aesthetic and theoretical engagements with the topic. At both ends of the spectrum, methodological difficulties of taking 'stuff' of food seriously are a major stumbling block (Whatmore 2006), a topic I elaborate on further in the methodology chapter. As a result of these gaps in scholarship, while empirically this thesis is situated in the agri-food field, its intellectual roots, and the key debates to which it contributes, lie in the science and technology and post-humanist studies, a literature to which I now turn.

2.4 Actor-network theory and the 'rematerialisation' of social inquiry

Actor-network Theory has provided an important intellectual resource for scholars in the agri-food field to reconceptualise the relationship between 'nature' and 'society' in agri-food production. A key text for the ontological shift called for in agri-food studies was Latour's (1993) critique of the ruling modernist ontology in *We Have Never Been Modern*. Latour

proposed that modernity as a mode of thinking about the world and action in that world proposed a landscape composed of two disconnected spheres, of active humans and passive 'things', and thus obscured the reality of the everyday practices in which 'the natural' and 'the cultural' mixed and fused into ever more multiple hybrids: clouds of acid rain, humans with pig's organs, internet forums, and so on. To appreciate the heterogeneity of both the physical make up of the world, and the character of any action within it, he proposed all 'things', human and nonhuman, need to be seen as effects of heterogeneous networks, actor-network beings which 'are simultaneously real, like nature, narrated, like discourse, and collective, like society' (p. 6). In terms of agri-food scholarship, Castree (2002) suggested, ANT ontology was attractive for a number of reasons. Firstly, ANT offered the possibility for overcoming the ruling and disabling dualisms of agri-food studies, and social science studies more generally: micro and macro, human and 'thing', structure and agency, discourse and matter, society and nature (see e.g. Goodman 2001). Secondly, rejecting the ontological separation of 'things' and 'people', ANT encouraged a relational view of the world, in which categories such as 'markets', 'community', 'industry' or 'science' would all be seen as circulations of agency (Latour 1999), that is as effects of heterogeneous networks, not ontological categories which are somehow natural and true. Consequently, and through the application of the ruling metaphor of the network, meaning in social science analysis would have to be arrived at 'from within' through description, and not by granting explanatory power to external categories such as 'class' or 'capital'. In ANT as a sociology of association (Latour 2005) all meaning had to be already present in the fold of the network.

Considering the continuing importance of 'nature' to agri-food studies, and the many difficulties scholars have faced in engaging with it in non-deterministic ways, ANT was proclaimed of fundamental importance to the understanding of nature's 'active materiality' (Goodman 1999, 2001, Whatmore and Thorne 1997, Whatmore 2002). However, achieving the ontological shift which is the heart and the power of ANT as both methodology and analytical lens in actual empirical accounts remains elusive in agri-food. Lockie and Kitto (2000) noted that while researchers will embrace the vocabulary of ANT, revising the structure-dependant ontological position is more challenging. They critiqued for instance Marsden and Arce's (1995) failure to acknowledge the role or analytical status of material nature within the process of constructing the meaning of food. An approach consistent with the ontology of ANT, they argued, would focus on the discursive and material resources of agents, and the relationships through which these agents are constituted, and therefore would enable an examination of 'both the ways in which groupings are constituted through the enrolment of actors into a network and the ways in which such projects are represented or constructed as the object of network activities' (p. 14).

There is a handful of important studies which have been more successful in the application of ANT methodology and analysis to agri-food studies. ANT has been mobilised in the context of conceptualising farmers' agency, and Higgins (2006) noted how recognising the heterogeneous character of action in agri-food can help policy makers explore the challenges to the construction of socio-material networks which would enable governance of farmers 'at a distance'. A food-centred study by Atchison et al. (2010) demonstrated the surprising spread

of wheat as not just food, but also industrial material, the important dependencies its characteristics create between agricultural and industrial activities, and the resulting threats for wheat intolerant individuals who struggle to mitigate wheat's ubiquity.

It needs to be said that in addition to ANT, scholars in the area of agri-food studies have benefited from other trends towards re-materialisation (Jackson 2000), and an increased focus on substance, not symbol, in social science inquiry (Gregson and Crewe 1997). Crucial was the scholarship in the area of material culture studies, where 'things' have been attended to as carriers and makers of meaning, and where Miller argued that 'social worlds are as much constituted by materiality as the other way around (1998: 3). Engaging with his inquiries into the role of commodities in the creation of identity (Miller 1987, 1997, 1998), and Appadurai's (1988) insights into the social lives of commodities, authors in agri-food studies started to focus more on the 'things' in agri-food as part of the general 'cultural turn' in social sciences (classic is Cook's 2004 study of the networks of meaning in a papaya's journey from field to plate). The interest in material culture was taken up in cultural geography, where the complex and contested meanings of a range of objects in everyday life were explored (e.g. Gregson and Crewe 2003, Gronow and Warde 2001). Through a focus on how 'things' are encountered and animated in daily life through exchange (Gregson and Crewe 1997), use (Watson and Shove 2008) and disposal (Gregson 2007), authors have explored the importance of objects to individual and collective identities and values. However, in agri-food studies and beyond, in their focus on commodities, social science scholars continued to conceptualise a world in which meaning is derived exclusively from human actors, and consequently 'inscribed' into material artefacts.

Historical analysis has provided more analytical insights into the role of artefacts and materials in production contexts, and an important study of a particular food-stuff, milk, as a historical material has been recently published by Atkins (2010) which, by its very title, immediately highlights its importance to this thesis: *Liquid Materialities*. Although Atkins is at pains to dissociate himself from both ANT and post-humanism and situate his inquiry in terms of 'human knowing and intervening within the limits of material potentials and constraints [of milk]', his book is relevant here due to his unusual food-stuff focus. The book is a 'historical genealogy' of cow's milk, and the transformations it underwent in Britain since the 19th century, and it charts the judicial, commercial and scientific discourses which surrounded and continue to surround the matter of milk. His insights into how the desire to 'decipher' and control milk led to the creation of knowledges, development of new scientific methods and techniques, and innovative regulation procedures are indeed fascinating. Reading Mol, Pickering and Heidegger, Atkins appreciates the relational and processual character of milk's properties which for him are always 'a condensed story' (Ingold 2007, quoted in Atkins p. 31). His reading of materials is closer to Ingold (especially 2011) than it is to my approach in this thesis, as while Atkins acknowledges the activity of materials, he does not dwell on the impact of their material characteristics beyond the 'uncooperativeness' and obstinacy, an approach commented on by Bakker and Bridge (2006). Atkins's inquiry remains most strongly influenced by the Foucauldian understandings of materiality, and it therefore stresses knowledge production, disciplining, and organisation of milk as a 'difficult' material. Little breathing space

remains for milk as *milk*, and for its vital materiality as consequential to the worlds of production, consumption and market-making.

While ANT has been embraced to a certain extent in agri-food studies, it has also encountered strong critiques. The most important criticism of ANT for agri-food studies has to do with its perceived low effectiveness for social critique, and its inappropriateness for dealing with questions of power as a politically 'agnostic' approach (Marsden 2000). These concerns were addressed by Goodman (2001), who argued for a political usefulness of ANT inquiry. He noted that the 'thick' description of ANT methodologies would allow researchers to individuate both the nodes of power, understand better exactly how some collectives dominate others, and to propose critical 'anti-programmes'. Another important contribution in exploring ANT's political potential was by Whatmore (1997). She pointed to the implicit ethical potential of ANT studies, and suggested that unearthing the hybrid make-up of socio-natural action can lead to an emergence of relational ethics based on shared embodiment and environmental embeddedness. ANT's ethical potential has been further developed through Mol's (2002) notion of ontological politics and Barad's (2007) linked exploration of ethical intra-action, which I discuss later in the chapter.

ANT has also been forcefully critiqued by feminist scholars for its lack of self-reflexivity, and thus for uncritically reproducing the potentially socially exclusive structures it describes. It has been argued that while Latour stated that 'Science... is just politics by other means (1988: 229), 'mainstream' ANT scholars failed to recognise their own power as political actors when they positioned themselves as 'politically disinterested investigators of science' (Whelan 2001: 537). Not engaging with feminist work and issues of inequality, critics such as Haraway (1992) argued, meant that ANT was missing how '[s]ystems of exploitation may be crucial parts of the 'technical content' of science' (cited in Whelan 2001: 555). The focus on action and effects, rather than silences and omissions, she argued, resulted in ANT being blind to the inequalities at work in the fields of its study. These critiques, while still pertinent, have somehow lost the edge in the face of the proliferation of ANT-related inquiries. While ANT's empirical focus has been extended from science 'in the lab' to such areas as medicine, markets, and 'nature', its 'political edge' has also been sharpened, and authors have been more explicitly engaging with the issues of inequality and critiques of power (notably in the work of AnneMarie Mol), and with the politics of sociological knowledge itself a political tool for enacting reality. Law (2008) argued that a focus on performance in more recent ANT accounts has brought the issue of (ontological) politics into the fore of ANT inquiries.

Another important concern about the application of ANT for this thesis is the observation that ANT does a better job at describing successful and already existing networks than at valorising the work that goes into maintaining their stability (Law and Singleton 2005; although see Latour 1996 for an example of a failed network exploration). While ANT approaches stress that constant labour is needed to keep networks afloat, they are not so good at providing thick and fleshy descriptions of how this is achieved, especially when it comes to considering human ethics and identities at play within those networks. As a result, in this thesis the onto-political project of ANT forms a basis of an analysis which then mobilises approaches which have been

more successful in engaging with human and non-human bodies in their 'experiential being' (Whatmore 2002). Nevertheless, I would argue ANT is an indispensable cognitive and methodological mechanism for the valorisation, tracing and mapping of the inherent agentic capacities of heterogeneous actor-networks in the first place, a point further developed in the methodology chapter (Chapter Three). Although ANT is my principal ontological point of departure, a focus on the coming together and stability of production and marketisation networks does not forestall a deep interest in particular relational materialities of particular bodies, plants and wines. This interest is theoretically informed by a body of work which has been always involved in fruitful debates with ANT: post-humanist studies.

2.5 Post-humanist approaches

Another area of inquiry which grew alongside ANT and which shares many of ANT scholars' concerns is the post-humanist school of thought. Put simply, the 'post'

'symbolises the move beyond the idea that 'the figure of 'Man' (sic) naturally stands at the centre of things; is entirely distinct from animals, machines and other nonhuman entities; is absolutely known and knowable to 'himself'; is the origin of meaning and history; and shares with other human beings a universal essence' (Badmington 2004: 1345).

Like 'the ANT school', post-humanist writing is diasporic and diffracted, but shares important assumptions about the need to overcome what are seen as analytically and ethically expired dualisms of human/nature relations. Post-humanist writers suggest that not only is the very identity of 'humans' relationally constituted, but also, echoing ANT, that the world is an outcome of a constant becoming of human and more-than-human elements, in which the human does not necessarily play a central role. Post-humanist thinking encourages therefore an ontological shift to post-modernist understanding of action, which opens up new areas of ethical, political and philosophical enquiry, and has therefore been of great relevance to this thesis.

A central contributor of post-humanist approaches has been and continues to be Donna Haraway, whose 1991 *Simians, Cyborg and Women* opened the way for a flood of feminist post-humanist scholarship. Their interest in the affective dimension of the relationship between humans and non-humans is of special relevance to this thesis. I particularly draw on excellent research by Despret (2004, 2005, 2008), in which she explores the ethical and emotional relations between researchers and their animals, and especially the creation of spaces and situations of mutual engagement which enable the creation of relevant and mutually interesting knowledge (see also Hinchliffe et al. 2005). Her considerations of generous, intelligent and 'polite' ways of entering into relationships with non-humans were very relevant to my understanding of the human/vine and human/microbe engagements in organic winemaking. The difficulties of ethical engagements with non-human 'others' explored by Haraway (2007), and especially her category of companion species, were also helpful in thinking through human-nonhuman relations in organic winemaking.

Another relevant application of the tenets of post-humanism important to this thesis is Whatmore's (2002) *Hybrid Geographies*. Her focus on the material vitality of 'nature' (in its various guises), and her concern with corporeality, as well as her empirical focus on particular socio-natural imbroglios of everyday life resonate strongly with my work in this thesis. Most relevant is her story of the GM soybean, both an inherently hybrid entity, and an often covert element of many foods. Whatmore focused on the soybean as 'a lively presence', around which struggles over power, knowledge and access rage. Importantly, Whatmore brought the particular materiality of the soybean into the equation, and discussed how the particular physiology of the soybean, and the character of its ecological relationships with its ecosystems make it a 'deviant and lively' organism, one capable of upsetting the pacified status required by capitalist agri-industry. However, it needs to be said that the bulk of the soy-bean's story focuses on regulatory and legislative regimes, crises and conflicts played out in the public domain, and on spaces and practices of consumption, and therefore contributes to the continual absence of production spaces, processes and practices as significant socio-cultural imbroglios in agri-food studies.

2.5.1 What kind of non(post)humans?

While scholars working in the veins of ANT and post-humanist studies have indeed adopted a serious approach to non-human agency, it is significant to consider what kind of non-humans have been subjects of their study, in what contexts they have been examined, and so how the contribution of this thesis differs from the existing engagements with non-human agency. In the field of ANT scholarship, technological non-humans (e.g. Latour 1996) and large-scale systems of knowledge production (e.g. Latour 1988) or technological change (e.g. Law 2001, 2002a) have commanded the bulk of attention. The potentially more unruly, but also more 'ordinary' agency of organic non-humans has been explored in much more depth in post-humanist studies (an important exception here is Callon's early (1986) article on scallops and fishermen). The complex agencies and histories of 'companion animals' such as pets (Haraway 2007), laboratory animals (Haraway 2007), zoo animals (Whatmore 2002) and animals as objects of scientific enquiry (Despret 2005, 2008) have been explored. Some attempts have been made to take the 'nature' of animals seriously in the context of agri-food production. Holloway's (2007) excellent study on the subjectification of cows, that is on the emergence of cows as ethical and active subject through modern debates in agriculture, unsettles the preconceptions about 'the nature' of animals, and suggests that animal 'identities' are no less relational than human ones (thus echoing Whatmore's 2002 work on elephants). The onto-political questions which are a necessary consequence of this serious relational ontology have been also taken up by Bingham (2006) in his work on opposition to GM crops by societies of 'friends' of certain 'interpretable objects' such as bacteria and butterflies. His philosophical exploration of the ethical importance of generosity and 'making room' for non-human others in particular situations of conflict over productive spaces is very relevant to my analysis of ethical concerns surrounding yeasts and sulphur dioxide in organic winemaking.

There are two important ways in which I have found post-human scholarship lacking in the context of this thesis. Firstly, post-human studies have tended to focus on non-humans which

not only are big-like-us, but which are also animal-like-us. Notably, there has been a striking absence of plants from post-humanist scholarship. Secondly, while there are many important theoretical contributions to the understanding of human-nonhuman encounters, there is an urgent need for more research-rooted elaborations. In the following paragraphs I address these concerns in turn.

2.5.2 Absence of plants from post-humanist inquiry

As Hitchings and Jones note, traditionally ‘plants and trees have been collected together, amassed and bundled into an anthropocentric notion of cultural landscape’ (2004: 5), and in material culture studies the symbolic, cultural and political value of gardens, forests, wildernesses and rural landscapes have been key topics of inquiry. However the material vitality of plants in these settings is only beginning to be explored, and Jones and Cloke’s observation that ‘flora (...) remains an even more ghost-like presence in contemporary theoretical approaches’ (2002: 4) continues to be valid. Their book (2002) *Tree Cultures* was an important contribution which opened the field of post-humanist inquiry to human-plant relations. In the book they employed the post-humanist perspective to examine the familiar themes of landscape, place, memory and ethics with an empirical focus on trees, their spaces and temporalities. Their exploration of how ‘agents of nature’ such as plants can be seen as ‘palpably active, not only in terms of their biological constitutions, but also relationally when bound up in the construction of ecological, social, economic, cultural, political and material formations’ (p. 7) is of great relevance to my approach towards vines, yeasts and SO₂ in this thesis.

Since the publishing of *Tree Cultures* the recognition of plants as significant ‘sociable’ entities has certainly risen, although remains much more limited than the exponentially growing school of animal studies. An important theme of post-humanist inquiry into human-plant relations has been affect, and understandings of landscape as experiential and rooted in embodied engagements. Ingold’s (2000) concept of dwelling, that is a practical and embodied relationship between body and landscape, a concept I myself utilise in Chapter Four, was employed by Carolan (2008) in his research on embodied understandings of farming landscapes through practice and the senses. Focusing on the affective relations between humans and plants, a number of authors have argued that regular interactions with plant life can be constitutive of more ecologically aware practices and standpoints (Head and Muir 2006, Cameron et al. 2011, Turner 2011).

Empirically, the most popular settings for the examination of human-plant relations remain the pacified and domesticated spaces of private and public gardens. Important here is the work of Russell Hitchings, who has made a significant contribution to the understandings of vital materiality of plants through focus on practice. He employed actor-network theory to ‘empower’ plants as significant actors in the creation of times and spaces of private gardens, stressing their capacity to exercise an influence over the humans tending to their needs (Hitchings 2003, a point also made by Power 2005). In exploring the pleasures of gardening, he drew attention to the necessary decentring of humans as the only or even dominant source of

agency, and to the 'transformative power' (2006: 367) of plants, and its effects on spaces and practices as gardeners are transformed from 'managers' to 'witnesses'. He also noted the importance of knowledge and skill in human-plant relations, and the potentially negative consequences of our general alienation from plants as living, changing entities, for our well-being (2006) as well as for the biodiversity and liveliness of our garden spaces, increasingly dominated by paving and concrete (2007). Hitchings suggested that in academic encounters with materiality we should move beyond the more static material culture approaches and appreciate things as 'experientially animate', and to thus 'reconsider how different groups of people handle an associated kind of material unpredictability' (2006: 369), a call which is very close to my heart in this thesis. Importantly, and in contrast with other plant-centred post-humanist work, Hitchings' inquiries focused on material practice as well as discourse, a method elaborated on with Jones (Hitchings and Jones 2004) and further discussed by me in the methodology chapter (Chapter Three).

While the work of Russell Hitchings has provided important theoretical insight into human-plant relations, its focus on the leisure activity of gardening limits its usefulness in the context of this thesis. I argue that human-plant relations in the context of agriculture are characterised by more radical tensions between human control and vital materiality, and more complex ethical landscapes due to the underlying goal-orientation and utilitarianism of such activities. An ideal empirical setting for the examination of the tensions between control and withdrawal in cultivation of food would be urban allotment gardens, which have indeed attracted a lot of academic attention. However, while this work has highlighted the importance of allotments to individual identities and sense of well-being (De Silvey 2003), or the construction of meaningful space (Crouch 2003), the tensions inherent in productive and goal-oriented engagements with plants in the production of food have, to the best of my knowledge, so far not been examined in this context. As Lorimer (2005) notes, geographers are still to respond to Whatmore's (2003) call to 'get all agrarian and dirty-handed' and move beyond the domesticated (although dynamic) spaces of gardens and parks.

2.5.3 Beyond individual encounters and aesthetic contemplation in post-humanist inquiry

A dominance of 'pacified' and low-risk settings on which I commented in relation to human-plant geographies is applicable more generally to the empirical focus of many post-human studies. While in human-plant geographies parks and gardens are the predominant spaces of engagement, in human-animal engagements the space of the home (Haraway 2007, Power 2008, 2009), or tourism (Besio et al. 2008, Whatmore 2002) dominate, with the resulting focus on animals as pets, or as objects of aesthetic contemplation and/or symbols of 'the wild'. I believe there is an urgent need to apply the philosophical and philosophical-ethical theories of living in a more-than-human worlds to the sphere of production, as one which has the most powerful impact on human-nonhuman futures. More empirical engagement in this area would allow us to better understand the vitality of organic matter as significant and creative, and would extend the 'individualistic', 'artistic' and 'theoretical' mode of enquiry which runs strong in post-humanist studies (see e.g. Bennett 2001). In this thesis, I seek to mobilise the enormous analytical potential of post-humanism to enhance our understanding of identities,

rationalities and practices of production, and to shed light on the ethical dimension of goal-oriented human-nonhuman relations. The context of production is immensely relevant to post-humanist approaches, it has a radical potential, and it is worthwhile to extend the scope of post-humanist inquiry in this direction.

While the animal-like-us and aesthetic biases are strong in post-humanist studies, there have been some notable exceptions. Important in the context of this thesis has been the emergence of uni-cellular organisms as significant 'companion species', with Paxson's (2008) paper on the microbial politics of cheese production in the US being an important break-through. Bringing in Foucault's bio-politics, and its later elaboration by Latour in his historical study of pasteurisation (1988), Paxson coined the term 'microbiopolitics' to convey the human attempts at categorisation, evaluation and control of microbes in Western societies. Drawing on her research with artisan cheesemakers, Paxson proposed a post-Pasteurian approach in which microbes are conceptualised beyond the ruling categories of infection and pathogen, and in which the microbial activities essential to our well-being, and the nurturing, productive and creative properties of microbes are acknowledged. Echoing Bingham's (2006) 'societies of friends', Paxson demonstrated an emergence of a growing group of 'post-Pasteurians', that is individuals 'who insist that not all bugs are bad, not only that microbes are a fact of life, but that they may enhance human life' (2008: 15). It is from her that I borrow the term 'liveliness', which she originally employed to distinguish between the microbiologically 'dead' pasteurised, and the life-full 'raw' cheese. For Paxson, in the post-Pasteurian ethos microbes are recognised as collaborators and allies of both consumers and cheese-makers. She connects the resistance to pasteurisation and 'sanitisation' of food production and consumption to the more general mistrust of centralised authority and of medicalisation of everyday life which is seen to disempower individuals and strip them of control over their own bodies. While Paxson's article has provided important insights into living with bacteria, in this thesis I explore the ambiguous and tense relationships with microbes such as yeast, challenging the simple binaries of ally/foe. Thus my interest lies mainly in the practical and ethical responses to unpredictable and creative agency of these non-humans in the context of making stuff for sale, and the labour which goes into establishing both the spaces in which these microbes can thrive, and those in which they are silenced.

Importantly, Paxson urged that more attention be paid not just to microbes *per se*, but to their role in human life processes (as enablers of digestion for example), and in the creation of their foodstuffs. This embracing of the microbial dimension of all human action (and indeed survival) was further elaborated on by Myra Hird in her excellent book *The Origins of Sociable Life* (2009). Moving beyond the 'big like us' focus in post-human studies, Hird took bacteria seriously in recognising 'the ongoing mixed natural-cultural-social history' (p. 56) of bacteria and all multi-cellular organisms, including humans. Having collaborated with a team of microbiologists who would certainly fall into Paxson's 'post-Pasteurian' category, Hird goes on to engage with biology research, evolutionary theories, human physiology and environmental issues, literally unearthing the ubiquity and centrality of bacteria. She calls for a radical turn in social science inquiry towards micro-ontology, an 'interdisciplinary nonmodern ontology' which is both radically relational and ethically aware. Her book challenges important

assumptions about the microbial world as 'mechanistic' and mute, and therefore engages strongly with post-humanism's call for a de-centring of human subjects. However, the book's contribution is mainly on the level of theory, and while it provides a compelling argument for the centrality of microbial life to human activity and survival, and showcases the beauty and creativity of bacterial worlds, it does not aid in dealing with the everyday challenges microbes as both allies and foes pose in the context of more mundane encounters such as agri-food production.

Although firmly in the animal-like-us line of inquiry, Lewis Holloway has gone a long way to destabilise the human as the key subject in agri-food scholarship, and has been an important influence in this thesis. In his 2002 paper on smallholding, he applied and extended Whatmore's (1997) concept of relational ethics in the context of the construction of farmers' ethical identities. Through participants' descriptions of relations with their herds and other farmers, Holloway demonstrated the evolving, relational and sometimes ambiguous character of farmers' ethical identities, and the importance of practical, material engagements with their animals to both the formation and change of these ethical positions. In this thesis I echo Holloway's approach as I move away from the concept of ethics as stable and a simple application of external 'ethical codes of conduct', and instead bring out the enacted and unstable character of ethics-in-practice.

Holloway further examined the relationality and instability of subjects' identities in a more radical manner in an exploration of the 'subjectification of cows', that is the making of cows-as-subjects (2007). By focusing on new milking technologies, Holloway demonstrated how such material technologies are underlain by particular visions of cows-as-subjects, and how they require and result in the creation of particular cow 'natures' (characteristics and behaviour imagined to be inherent and innate). This paper thus challenged the assumption that ethical farming relations with animals require a simple recognition of their subjectivity. Instead, he demonstrated that all farming systems create effects of domination and freedom, and that all constitute animals as particular kinds of subjects. I engage further with Holloway's (2007) insights in Chapter Five, where I explore how particular knowledges and material practices result in particular subjectifications (making-subject) of wine-making yeast.

There has been also been an important strand of inquiry with questions of bio-security and biodiversity, where the work of Buller (2008) on wolves and Lorimer's (2008) on conservation show the impact the social understandings and practices of 'nature' have on the possibilities for human-nonhuman engagements. Through the consideration of the lively temporalities (Lorimer 2008) and spatial mobilities (Buller 2008) of 'natural' non-humans these authors valorise the capacity of 'natural' materials to overcome and influence human intentionality, demonstrating that while 'natures are relationally produced (...) they are also irreducible' (Buller 2008: 1593). These empirically grounded studies which query the category 'human', and its politics, in contexts beyond individual are a welcome development in the field of post-humanist studies.

With the exception of the aforementioned authors, post-humanist encounters have set out a particular aesthetic of non-human meeting, positioning it first of all as an individual experience, as well as an experience which is relatively open-ended and focused on learning, openness and play. All in all, post-humanism could be usefully challenged through an engagement with vital organic matter in the worlds of production. This engagement could teach us more about how reflexive and ethical relationships are forged through every-day labour of production between working humans and non-humans, and how these relationships in turn are modified and modify further productive, managerial and sales practices. It could teach us about the opportunities given and dangers posed by particular nonhumans in production contexts, and about their consequent impacts on practices of production and sales. In the context of ethics, which has been a central theme of post-humanist writing (Badmington 2004), it could teach us about how the heterogeneous ethical relationships of production are accommodated within or struggle with the market-producing modes of ordering. All these are issues which this thesis addresses in the context of organic wine making and sales. To better theorise the engagements with non-humans in the tense, risky and goal-oriented work and commercial context, I benefited from inquiries into materiality in a number of diverse contexts. It is to this multi- and inter-disciplinary literature I turn in the next section.

2.6 Towards understanding the relational materialities of agri-food production

This thesis explores human-nonhuman engagements in the context of winegrowing work, in which the simultaneously market-oriented and ethically-informed activities of human workers in the vineyard and in the winery are both dependent on, and seek to influence the materials they work with: vines, bacteria, yeasts, chemicals. My post-humanist reading of these processes, in which human agency is seen as an effect as much as cause of particular materialisations, makes this approach radically different to conventional understandings of productive spaces and processes in organisational studies or economics. However, this thesis also differs from existing conceptualisations of nonhuman agency in post-humanist studies in two crucial ways. Firstly, it examines the context of production, and so seeks to make sense of how the obstructive and creative properties of materials are mobilised, responded to, and accommodated within the demanding context of making something which will sell. And, it seeks to unite this goal-orientedness with a deep understanding of the ethical dimension of this money-making-oriented action. Following the onto-politics of Mol (2002) my focus on praxis allows me to see ethics as both ontologically central, and as already existent in and influenced by the human-nonhuman encounters. In the following sections, I identify three key areas of literature which have enabled me to examine the ontological politics of goal-oriented practice in organic wine production: the work of Andrew Pickering and Tim Ingold on production and practice, the work of AnneMarie Mol and Karen Barad on ethics in a heterogenous world, and the work of the performativity school, most notably Michel Callon, on material markets.

2.6.1 Working (with) nonhumans: practices of work

Central to my conceptualisation of the human-nonhuman relations in a work and production context have been the writings of Andrew Pickering. Nowhere has the obstinacy and creativity of materials as significant participants in goal-oriented practices been more valorised than in his studies of the production of scientific knowledge (1995) and industrial production (2005). In Pickering's understanding, the majority of human action in the world has a character of 'coping with' material (nonhuman) agency, 'agency that comes at us from outside the human realm and that cannot be reduced to anything within that realm' (1995: 6). Pickering builds on ANT's radical symmetry of human and nonhuman action, and applies it to the understanding of goal-oriented activities. His particular interest, which overlaps with my focus in this thesis, is the question of intentionality in a material world. In Pickering's view, human actions are characterised by long-term intentionality and goal-orientation. However, this does not mean that humans mould the material world to their superior will. When one looks at the nitty-gritty processes of making 'things', of 'coping' with the world, it becomes clear that on a minute-by-minute basis human plans and goals are temporarily emergent from and transformed in sensitive engagements with the material world. In their continual struggles to capture and benefit from the nonhuman agency of the material world – the growth of fruit by plants, the production of alcohol by yeasts, the mellowing of tannins in contact with oxygen – humans are engaged in a process Pickering calls 'tuning', in which both human and nonhuman agencies adjust and adapt to one another, finding productive ways of working together while closing off other avenues of co-operation. Crucially, the results of this 'tuning', or 'mangle of practice' cannot be foreseen fully in advance. 'We just have to find out, in practice, by passing through the mangle, how the next capture of material agency is to be made and what it will look like. Captures and their properties in this sense just happen. This is my basic sense of emergence, a sense of brute chance, happening in time – and it is offensive to some deeply ingrained patterns of thought' (1995: 24).

For Pickering, both the material world and human intentions are transformed in goal-oriented encounters. Importantly, the search for productive captures of nonhuman agency always takes place in an already existing milieu of previously sedimented human-nonhuman action, and thus can both benefit from and be locked into those previous trajectories. The world of human intentionality is therefore 'constitutively engaged with the world of material agency, even if the one cannot be substituted for the other' (1995: 20). This is therefore a world in which human actors are still there, but always already and inextricably intertwined with nonhuman ones. It is a reading of practices in which 'the world makes us in one and the same process as we make the world' (1995: 26).

In this thesis I have found Pickering's 'mangle of practice' a very useful analytical tool for thinking about the spaces and times of work in organic wine production. Pickering's analysis manages to unite two crucial characteristics of human action in the material world in the context of wine-making work: the sense of uncertainty which comes with working in a high-risk, low-control environment of grape growing and wine making, and the crucial difference between the capacities of materials and the capacities of humans, without falling into either

determinism or utilitarianism. My understanding of how this mutually entangled relationships are forged in practice, as embodied moments, also benefited from the work of Ingold (2000, 2011), especially his notion of ‘taskscape’ (2000) which he coins to draw a distinction between landscapes as visual and ‘imagined’ spaces and the lived-in, temporal, embodied engagements with the material environment characteristic of work practices. Inspired by Ingold and Pickering, and extending their insights through the more ethics-oriented approaches of Barad (2007) and Mol (2002) (see below), I understand the practices of vine-growing and wine-making work to be not so much routinised performances as *practices of coping with material agency*, that is practices which are sensitive, responsive and open-ended, and based on deep embodied and intellectual engagements with the material world.

2.6.2 Working (with) nonhumans: relational ethics

The worlds and practices of work, I argue in this thesis, are inherently ethical. This stance is a consequence of my embracing the symmetry of action and heterogeneity of the world which are at the heart of the ANT ontology. The link between semiotic materialism of ANT and ethics has been elaborated by Karen Barad in her excellent book *Meeting the Universe Halfway* (2007). In her exploration of scientific knowledge production, Barad coined a term ‘intra-action’ to stress the relational and network-y character of action, always understood in materialist terms, as material re-configuring of the world. For Barad intra-action is inherently ethical, as each action contributes to a different ‘mattering’ – materialisation, becoming matter – of the world. Values, she argues, are integral to the nature of knowing and being in the world (2007: 37). In conceptualising ethics, she also draws on Emmanuel Levinas’s ‘ethics of encounter’, whose work has been one of the most provocative influences on post-humanist ethics debates. Levinas rejects the metaphysical ‘self’ which is articulated through conventional approaches to ethics in favour of understanding subjectivity as relational, constituted through shared responsibility to the Other (Barad 2007: 391; see also Whatmore 1997). Thus for Barad ethics is an inherent ingredient of doing. It is worth citing her argument at length:

‘Just as the human subject is not the locus of knowing, neither is it the locus of ethicality. We (but not only “we humans”) are always already responsible to the others with whom or which we are entangled, not through conscious intent but through the various ontological entanglements that materiality entails. (...) Ethics is therefore not about right response to a radically exterior/ized other, but about responsibility and accountability for the lively relationalities of becoming of which we are part. (...) Responsibility is not ours alone. And yet our responsibility is greater than it would be if it were ours alone. Responsibility entails an ongoing responsiveness to the entanglements of self and other, here and there, now and then. (...) ... accountability and responsibility must be thought of in terms of what matters and what is excluded from mattering.’ (2007: 393-4)

A similar argument is arrived at from a different direction by AnneMarie Mol in her *Body Multiple* (2002). Her radical analysis of practice as performative of objects and categories (such

as ‘disease’, ‘patient’, or ‘pain’) echoes Barad’s intra-action very strongly (I further explore Mol’s praxiography in the methodology chapter section 3.3.2). Once we accept the performativity of action, once we accept that what we do contributes to the shape of the future, the ethical and political dimension necessarily follows, and ‘what to do?’ becomes a political question (2002: 177). This ‘politics of what’ approach, which prioritises practices over discourses, and is attentive to local and non-normative dimension of ethics, enabled me to think of human-nonhuman entanglements in the context of organic wine production beyond codified ethics (legislative codes or certifications), and beyond simple descriptions of ethical values at play. Instead, it allowed me to sketch more complex and uncertain ethical landscapes in which the ontological politics of ‘making space for nature’ (Hinchliffe 2007) is both enchanting and dangerous.

Importantly, both Barad’s and Mol’s understanding of relational ethics, while taking the ANT symmetry principle to its logical conclusion, also makes it possible to retain human exemptionalism (*sic* Murdoch 2001) in heterogeneous ethical networks, that is the human self-reflexivity which allows for a wilful de-centring and leads to responsibility and care. In this thesis I examine how organic wine producers ethically navigate the spaces of production, that is how they relate ethically to particular organic and non-organic nonhumans implicated in production practices, and how they construct their ethical identities as agri-food producers (Holloway 2002). And while I both acknowledge and demonstrate the contribution of the material world to the creation and expression of these ethical positions, I also recognize that while humans are enmeshed in complex sets of heterogeneous relations, not all the ethical meaning derives from these encounters. Such transcending concepts as ‘nature, justice, humanity’ (Murdoch 2004: 1358) are important to the construction of ethics of production. In this thesis, I focus particularly on the importance of Nature which, against Mansfield (2003), I do not see as an ‘empty signifier’, but as an important and influential category which, being ethically charged, can ‘still do some work’ (Hinchliffe 2007: 190).

2.7 Markets

The material-ethical practices of production of organic wine are always already situated in the context of the sales imperative. The markets are always already ‘there’, in the pruning of the vines, in the fermenting of the wines, and the demands particular markets place on wines as saleable commodities, and therefore the material practices they require, have to be acknowledged and managed from the very beginning of wine’s becoming. In this thesis, then, I work hard to narrow the much-critiqued gap between worlds of production and worlds of consumption (Goodman and DuPuis 2002), and show how the material exigencies of markets and the material exigencies of ethical discourses rooted in the importance of ‘independent nature’ co-exist and often clash in the very practices of production. At the same time, I move beyond the more traditional conceptualisations of markets which explore the barriers the material world poses to the expansion of capital, and which trace how capital itself is transformed in the process (e.g. Bakker 2004 on water, and Atkins 2010 on milk as ‘difficult commodities’). Instead of conceptualising the market as ‘an already constituted structural unity that only subsequently comes into contact with a recalcitrant non-human nature’, I

demonstrate how the markets of/for organic wine are ‘a realm constituted from the outset through a set of practices – including the ‘performances’ of non-humans – and thus neither a bounded region of being, nor one which has an original form prior to its entanglement with things’ (Braun 2008: 669). I follow such scholars as Lee (2006) in arguing that ‘the economy (...) is an integral part of everyday life, full of the contradictions, ethical dilemmas and multiple values that inform the quotidian business of making a living. In short, it is ordinary’ (414). I especially focus on the contribution of particular materials, mainly sulphur dioxide, to the structuring and maintenance of markets for/of organic wine, and on the ethical dimension of their production and marketisation practices.

My approach to the markets as performative and performed was informed by the work of scholars writing within the performativity programme, especially the work of Michel Callon (1998, et al.2002), and Çalışkan and Callon (2009, 2010), and their recent application by Gregson et al.(2010). The argument of the performativity programme with relation to the economy can be summarised thus: the economy, or rather the economies (the socio-material spaces of monetary market relations) are not somehow separate dimensions of activity ‘embedded’ in ‘society’, but instead exist through their continuous enactment, material and discursive, by agents, human and nonhuman. Economies are self-defining, in that the elements constituting economic spheres are recognised as such through the internal and external qualifications of these elements as economic by the market participants and commentators (those qualifications can be tentative, controversial and disputed) (Çalışkan and Callon 2009). Crucially, markets are heterogenous and material, and the focus of the material dimension of markets can be a crucial part of the analysis of power distribution of a market network. In this perspective, we can ask useful questions about the architecture and structuring of power in markets, delineate the strong and weak points of market systems, and discover how markets are kept up and radically modified through the effects and affordances of particular material agencies.

Of special relevance to this thesis was the work on economies of qualities (Callon et al.2002), that is economies in which the qualification of products is of central concern to all actors, and where the issues of product qualification in turn have the capacity to influence the architecture of the economic markets. These processes are further examined by Çalışkan and Callon (2009, 2010) in their papers on marketisation, that is the making, development and maintenance of markets as a material heterogeneous labour involving ‘circulating material entities, as well as competent individuals engaged in valuation practices’ (2009: 390). The mechanisms organizing the architecture of wine markets correspond in important ways to Callon’s et al.definition of economies of qualities. Wine market actors, be they producers, sellers or consumers, are veritably obsessed with the constant qualification and positioning of wines, and the control over value chains is a site of continuous struggle, a struggle which becomes materialised in the practices of production, embodied in the flesh of the vines and yeasts. In this thesis I seek to extend Çalışkan and Callon’s work on the materiality of markets suggesting that the notion of ‘pacification’ is problematic in the context of organic winemaking. The practices of ‘making space for nature’ (Hinchliffe 2007) in organic winemaking produce a variability and instability in wines which gives them the capacity to

actively interfere with the valuation mechanisms, and to contribute 'multiple suggestions of their own value'. The wine remains an active participant with the potential to disrupt and re-write established market relations. Thus I argue that in organic wine markets the good itself becomes a truly active participant in the market's ongoing reconfiguration.

Moreover, I illustrate throughout this thesis the tensions between the two predominant modes of ordering (Law 1994) organic winemaking practices, that of the ethical and moralising space of organic production, and the (no less moralising) space of the markets. In agri-food studies to date the ruling assumption in the study of markets tends to be that the individualistic and competitive normative of the capitalist marketplace is incompatible with an ethic of care (Smith 2005). Thus, as was mentioned earlier, organic production has been mostly valorised by scholars for its subversive potential within dominant capitalist discourse (Allen and Kovach 2000, Goodman 2000, Goodman and Goodman 2001), and seen as constantly threatened by 'conventionalisation' (Hall and Mogyorody 2001, Lockie 2005).

However, the notion that markets are inherently un-ethical has come under criticism from geographers in recent years (Lee 2000, Jackson et al. 2009). Geographers have been increasingly concerned with the ethical dimension of markets, be it in the areas which are easier to classify as 'ethical landscapes', such as healthcare (see Milligan and Wiles 2010 for a good review), or those that have been traditionally perceived as bastions of un-ethical practice, such as finance (Hall 2011). Little work on the ethical markets of food production has been done so far (for a notable exception see Holloway 2002).

In this thesis, and in contrast to most literature on food provision systems, I am not drawing a distinction between implicitly im-moral or a-moral spaces of 'the market', and implicitly moral and caring spaces of 'organic' or 'artisan' production. I believe that it is not analytically useful to define the spaces of organic wine production according to the space they occupy on an imagined spectrum between 'alternative' and 'mainstream'. Instead, and again drawing on the performativity programme (Callon and Muniesa 2005), as well as a growing chorus of voices from economic geography (Gregson and Crang 2010, MacKenzie 2006, Wright 2010), I call for a recognition of the multiplicity of markets, the essential difference between markets (Smith 2005), and their performativity, also in their ethical dimension. Furthermore, and true to the market multiplicity thesis, I respect the differences in market involvement of my participants, and I explore the reasons for this diversity as systemic outcomes in which material and ethical imperatives both play important roles. In other words, the way I examine organic wine markets has less to do with applications of codified ethics, and more with the maintenance of personal ethical identities, expressed through and sustained in particular relations with the material world (Whatmore 1997, Holloway 2002).

2.8 Conclusion

A critical review of agri-food literature has revealed a scarcity of studies which take the calls for an ontological shift seriously, and a dominance of the modernist paradigm in understanding both practices and ethics of agri-food production. It has also shown that while an interest in materialities of agri-food are starting to appear in social science inquiry, there is

a dominance of analyses of consumption spaces and practices, resulting in a continual ‘implied presence’ of the material spaces of production as somehow self-explanatory and natural. I have suggested that post-humanist approaches offered a possibility of engaging with the processes and discourses of agri-food production as relational achievements and circulating entities (Latour 2005), and thus avoiding both the determinist and the utilitarian understandings of ‘nature’. This thesis then extends the scope of post-humanist inquiry to include the high-risk and high-stakes spaces and practices of commercial production, of making organic wines for sale. It is to these practices that I now turn.