Cultural landscapes, social networks and historical trajectories: A data-rich synthesis of Early Bronze Age networks (c. 2200-1700 BC) in Abruzzo and Lazio (Central Italy)

Rossenberg, E.A. van

Chapter 2
Archaeological synthesis of Bronze Age networks and trajectories

> "Users of social science seem to consider that it's rather straightforward to assemble, invoke, convoke, mobilize, and explain the social. Practitioners of social science know how painful, costly, arduous, and utterly puzzling it is. The 'easy' social is the one already bundled together, while the 'difficult' social is the new one that has yet to appear in stitching together elements that don't pertain to the usual repertoire. Depending on which tracer we decide to follow we will embark on very different sorts of travels." (Latour 2005, 165)

Recent developments in archaeological theory have deepened divergence in Bronze Age studies between Europe and the Mediterranean, by creating another layer of methodological differentiation. The European focus in archaeological synthesis of later prehistory is on cultural landscapes and relationality, the Mediterranean focus in Bronze Age studies on social networks and connectivity. Both sets of approaches are concerned with archaeological synthesis of Bronze Age networks, but there is a major distinction in terms of scales of interpretation. Cultural landscape approaches are mainly concerned with Bronze Age networks and trajectories on micro-regional to regional scales. This makes it necessary for European archaeologists to introduce assumptions about regional to supra-regional scales, without questioning these assumptions (§2.1). On the other hand, social network approaches in the Mediterranean focus on inter-regional or supra-regional connectivity, thereby introducing assumptions about Bronze Age networks on (sub)regional scales (§2.2). Issues in archaeological synthesis of Bronze Age trajectories in the long term diverge accordingly, with a focus on social memory in relation to individual places in European cultural landscapes, as opposed to the persistent focus on regional trajectories of social transformation in the wider context of Mediterranean connectivity. This broad sweep characterisation (if not a caricature) of divergent approaches mystifies that current 'European' and 'Mediterranean' strands of archaeological synthesis in Bronze Age studies are to a large extent complementary. The premise for appreciating complementarity is that the distinction between cultural landscapes and social networks as parallel objects of study is an analytical one. The argument in this chapter will be that cultural landscapes (§2.1) and social networks (§2.2) intersect, in dealing with precisely the same places, and can therefore be added up, to result in a network approach to Bronze Age trajectories.

2.1 Cultural landscapes: uncertainties and controversies

As so many concepts, 'cultural landscapes' carry the burden of a range of meanings and interpretations, often distinctive between disciplines (e.g. Conzen 2004; Domosh 2004). The full range has been applied to archaeology (cf. David & Thomas 2008), but in European Bronze Age studies cultural landscapes have relatively recently become synonymous with a specific set of approaches. Bronze Age cultural landscapes are generally conceptualised as constituted by a range of 'elements', 'places' or forms of place-making, such as metalwork deposition, funerary practices, cave use and settlements. Cultural landscape approaches argue that these elements have to a large extent been treated separately, as types of place, to the detriment of an appreciation of their interrelationships. Although sites are implicitly regarded as contemporary through typochronological dating, it is still not common practice to compare, let alone connect, different elements in cultural landscapes explicitly in terms of networks of places. Critiquing this tendency to 'compartmentalise' past realities, proponents of cultural landscape approaches advocate that these should, theoretically and methodologically, be regarded as series of interrelated places (cf. Brück 2008; Fokkens & Arnoldussen 2008; Jones 2008). Despite the emphasis on relationality between places, uncertainties remain. Cultural landscapes can turn out to be controversial and, from a network perspective, far from relational.

There is always the risk of a 'holistic' tendency towards closure in adopting cultural landscapes as a form of archaeological synthesis. The problem lies in regarding relationality between places as all-encompassing, within the singular and bounded entity of a cultural landscape. Such

holistic landscapes are as ahistorical as compartmentalised landscapes are in wholesale separation. Both tendencies, either 'holistic' or 'compartmentalised', are extremes that carry assumptions about relationships between places. The middle ground is that relational notions of place should be firmly based on associative patterns (i.e. positive relationships between places) and dissociative patterns (i.e. negative relationships between places), in combination with spatial analysis. This should help to overcome the tendency (and paradox) in cultural landscape approaches that spatial analysis has become increasingly irrelevant in archaeological interpretation and synthesis. Here I will adopt the Latourian notion of 'flat' networks to reinvigorate the disciplinary strength in spatial analysis as a methodological prerequisite. The notion that networks should be kept 'flat' (sensu Latour 2005) in analysis, interpretation and synthesis, means that relationships between places are not taken for granted as self-evident and stacked away in assumptions. Moving from one place to another (or making a connection) involves 'real costs' and lies at the heart of multi-sited lifeworlds. A 'flat' perspective should help avoiding too abstract, 'holistic' a notion of networks.

The methodological consequence of such a data-rich form of interpretation and synthesis of Bronze Age networks is that a cultural landscape approach should be 'non-selective' (which is different from 'holistic'). It should not favour one type of place over another to begin with, but take all places into account. To underscore this problem, the argument will start with the uncertainties inherent in landscape approaches as a form of archaeological synthesis. It includes a critique of the selective focus of particular landscape approaches, which is at odds with the 'non-selective' aim of synthesis (§2.1.1). Subsequently, I will consider polythetic classification as an archaeological network methodology to approach cultural landscapes (§2.1.2). Polythetic classification of archaeological assemblages, using classes of objects as units of analysis, has the potential to reveal relationships between places in terms of associations and dissociation that cross-cut assumptions based on generalised notions (or types) of place, thereby putting these to the test. In the same context, the relation between deposition as a form of place-making and the structure of Bronze Age archaeological records will be explored, including the issue of ritual in archaeology. Based on these considerations, the network approach to cultural landscapes adopted in this thesis can be outlined, vis-à-vis current approaches that focus on the relational character of notions of place and landscape in terms of relational ontologies (§2.1.3). In turn, this will provide a starting-point for the argument that cultural landscapes intersect with social networks (§2.2).

2.1.1 Archaeological synthesis and landscape studies

Landscape has become increasingly popular in social sciences and the humanities as a "trendy catch-all term", if not a "growing cult of landscape" (Lowenthal 2007, 640). Underscoring its popularity in archaeology, David & Thomas (2008) have recently published a handbook with a state of the art in landscape archaeology. Arguably, the main reason that the study of archaeological landscapes has become increasingly prominent in the discipline, is that the notion of landscape is more or less all-encompassing and can serve as a proxy for archaeological synthesis. It has been suggested that the manifold notions of landscape provide a framework for the reconciliation of different theoretical perspectives. Anschuetz et al. (2001, 159) have summed up this stance as follows: "Landscape approaches allow researchers to accommodate, if not integrate, different theoretical perspectives even while these constructs exist in tension with one another. Through this characteristic, an explicitly defined landscape approach might facilitate bridging the divide between processual and postprocessual archaeologies." However, other scholars are more skeptical about the commensurability of distinctive approaches in terms of landscape (e.g. Fleming 2006).

Paradigmatic reconciliation is not simply a matter of putting two and two together, since these sets of approaches generally focus on different scales of social life. On the one hand, the focus in erstwhile 'processual' archaeologies has remained on the bigger picture of landscapes and societies as systemic wholes. By contrast, the first and second generations of 'postprocessual' or 'interpretive' approaches have shifted the emphasis in the study of past realities to the microscale of people, places, practices and objects. 'Interpretive' case studies tend to focus on issues of microsociology, adopting concepts such as agency, identity, personhood, body and biography, places, experience, memory and fragmentation (e.g. Hamilakis et al. 2002; Fowler 2004; Gardner 2004; Oliveira Jorge & Thomas 2006/2007; Boric & Robb 2008). The focus on minutiae has (so far) been to the detriment of archaeological synthesis. Currently, a third generation of 'interpretive' archaeologies has started to use the notion of landscape to reinstate an interest in the social dimensions of past realities beyond the scale of individual places and bodies (cf. Schiffer 2000; Ashmore 2002, 2004; Meskell & Preucel 2004;

David & Thomas 2008). It is not a coincidence that the issue of methodological rigour in archaeological synthesis, has surfaced in the more general shift in focus to landscapes within the discipline (cf. Blake 2004).

Theoretical and methodological debates, as well as case studies in interpretive archaeology, have highlighted that notions of landscape cannot be disconnected from notions of place (cf. Thomas 2001; Blake 2004; Fowler 2008a; Thomas 2008; Van Dyke 2008). However, these approaches have tended to focus on later prehistory (if not specifically the Neolithic in northwestern Europe) and on a particular set of places, preferably monuments with long-term trajectories of (re)use (e.g. Barrett 1994; Bradley 1998, 2002). Of course, a selective focus on monuments is at odds with a non-selective methodological concern in archaeological synthesis. The overemphasis on close reading (or contextual analysis) of individual places, if not very peculiar ones, steers away from the notion that social life is 'multi-sited', not situated in one place but in the relationships between places (i.e. networks). The unintended consequence of the proliferation of epistemologically, theoretically and methodologically informed case studies in 'interpretive' archaeology (or 'petites histoires') is not only a shift away from a concern with archaeological synthesis. It has also resulted in an unfavourable starting-point for the exploration of intersections between cultural landscapes and social networks. A closer look at the genre of interpretive 'petites histoires' is required to bring microsociological issues in archaeological theory to bear on the methodology of archaeological synthesis.

Stereotypically, articles (rather than full-length monographs) that introduce microsociological concepts to archaeology, comprise a minimalist case study, following a lenghty discussion of one or the other concept from a theoretical perspective. Such case studies are generally nothing less than inspiring and have rightly highlighted the fragmented character of past realities. At the same time, the proliferation of this genre (or, discursive modality) cannot hide the fact that there is a paucity of more thorough and extensive research, explicitly aimed at providing a wider context for the issues raised. Increasingly, 'interpretive' authors are encouraged by publishers (as well as forced by output-based academic funding) to collect their articles in monographs as a form of archaeological synthesis (e.g. Bradley 1998, 2000, 2002, 2005; Jones 2007). However, the selective focus on a particular element, practice or place, inherent in the original articles, remains unchanged in the monograph. It is highly problematic that collections of case studies do generally not add up to a non-selective form of synthesis that considers relationships between all places in cultural landscapes. Arguably, such monographs cannot be regarded as a methodologically sound form of archaeological synthesis. They are more of the same, a compilation of theoretical informed arguments and case studies ("articles writ large"), and not explicitly concerned with the methodology of archaeological synthesis.

What remains, is an unresolved tension in the genre of 'petite histoires' between the aim to construct 'fragmented' narratives, on the one hand, and their limited scope, on the other. The tension is sustained by a dependency in archaeological interpretation and synthesis on assumptions about wider contexts that are largely left unsubstantiated (cf. Renfrew in Hodder et al. 2007, 222-223; Brittain & Harris 2010). This unresolved tension creates the paradox that 'interpretive' case studies reinforce (rather than fragment) grand narratives. In this respect, there is a growing awareness that 'interpretive' landscape studies (should not) have been restricted to those places that continue to have a visual and conceptual impact. This can be discerned in the growing appreciation for archaeologically more ephemeral sites, such as settlements. These are used to to contextualise sites of ritualised practice that have featured from the start in 'interpretive' archaeologies, such as monuments and so-called natural places. In a similar vein, regional archaeological projects in the Mediterranean, based on field survey, have explicitly aimed at addressing the overrepresentation of urban and monumental, ritual sites, with respect to more ephemeral, rural sites (Van Dommelen & Prent 1996; Van Dommelen 1998; Attema et al. 2002). In many cases, however, the original bias is not redressed, but juxtaposed with the underrepresentation of sites of 'ritual' practice, subsuming the latter under 'rural' settlement patterns in the interpretation of survey evidence.

Another convergence is that the increasingly non-selective focus on a range of places in cultural landscape approaches takes the adoption of praxis theory in archaeology to another level. Archaeological case studies had often not surpassed a veneer of sociology in using concepts such as habitus, agency and structuration as buzzwords, paying lip service to Bourdieu and Giddens. The full potential of praxis theory is finally acknowledged in archaeology, not misreading agency as individuals

or events.[7] As such, it contributes to a relational perspective on past realities that appreciates the 'multi-sitedness' of social life (e.g. Preucel & Meskell 2004, 215). Rather than a selective focus on particular elements, an all-inclusive approach is required to study places as locales within fields of practice, which can be both complementary and overlapping. In other words, a full-fledged adoption of praxis theory in archaeology implies the adoption of a network approach to archaeological synthesis. It comes with the realisation that resolving theoretical and methodological issues of archaeological synthesis is key to arriving at an understanding of cultural landscapes as networks of places.

One such issue that is at odds with archaeological synthesis from a network perspective, is that 'landscape' as a unit of analysis (or analytical entity) tends to substitute for a bounded notion of culture. Following from its all-encompassing capacity, the notion of landscape in many cases serves as a 'container metaphor' (sensu Lakoff & Johnson 1980), rather than allowing for the open-ended character of networks (§2.2). The current focus on fragmented narratives in archaeological theory is one way to avoid the pitfall of misrepresenting analytical constructs, such as cultures and landscapes, as bounded entities. As argued above, however, the problem is that it does so at the cost of methodological rigour in archaeological synthesis. Even in seemingly 'non-selective' landscape approaches, there is an 'holistic' tendency that puts emphasis on those elements that constitute the 'best fit' in archaeological synthesis, thereby disregarding other elements. The most telling examples of such a selective practice are those landscape reconstructions that start from the assumption of an overarching cosmological scheme, so-called sacred or ritual landscapes (Knapp & Ashmore 1999), exemplified by Mesoamerican landscape archaeologies (e.g. Ashmore 2009). A fairly similar notion of 'ritual landscape' underlies interpretive archaeologies in a European context as another unsubstantiated assumption (cf. Robb 1998). These particular landscape approaches (§2.1.3) can be termed relational in the sense that they reconstruct interrelationships between places, but at the same time there is a partiality to them in the adoption of a bounded understanding of past realities, within the confines of a cosmological framework with an holistic tendency towards closure.

In short, archaeological synthesis should be a theoretical and methodological concern for a new generation of interpretive landscape archaeologies. The challenge is to come up with forms of archaeological synthesis that create structure from the archaeological record and are at the same time data-rich enough to afford a concern with both structure and fragmentation, without making too many assumptions about past social realities. In the end, neither structure nor fragmentation can be regarded as an uncompromised starting-point for research in itself and both have to remain a major research problem in (social) archaeology. Rather than a start from scratch, a shift in emphasis is required to bring issues of archaeological synthesis to bear on landscape approaches, in particular a closer look at ingrained assumptions about notions of place. Such a shift will be outlined in the following section where current approaches to place-making in archaeology are discussed from a network perspective.

2.1.2 Place-making: polythetic classification, deposition and the archaeological record

In order to put archaeological assumptions about notions of place under scrutiny, 'place-making' will be considered here from several, interrelated angles. The aim is to make explicit the relational connotations of place that tend to remain implicit in archaeological theory and methodology. First, I will discuss polythetic classification as a starting-point for a relational methodology to approach cultural landscapes as networks of places. Secondly, place-making will be linked to depositional practices, with a closer look at the question of ritual. Then deposition can be discussed in terms of the structural properties (or structure) of archaeological records. Finally, taking object biographies as an example for current forms of archaeological synthesis, I will argue for a shift in emphasis in the study of Bronze Age exchange networks, in order to make relational notions of place explicit (and explicitly spatial).

Polythetic classification as relational methodology

Introduced by David Clarke in the instant classic "Analytical archaeology" (1968), a polythetic model of culture addresses the methodological issue of treating archaeological cultures as bounded entities. Cultural practices and classes of objects are adopted as units of analysis (instead of cultures), with an emphasis on their partially (rather than fully) overlapping distributions (Clarke 1968). In effect, archaeological synthesis that is based on a polythetic notion of culture, can be regarded as a network

[7] Cf. Knapp & Van Dommelen 2008 for a recent attempt at returning archaeological approaches in terms of agency to the context of structuration theory; and Pauketat 2001 for praxis theory as a multiscalar approach to historical trajectories.

approach to past realities, one that appreciates the open-ended character of the latter. Polythetic classification has recently been 'rediscovered' as an approach and applied to situations in later prehistoric Europe and the Mediterranean. Vander Linden (2001/2002, 2004, 2006) stays closest to Clarke's polythetic notion of culture in terms of its formulation, its application (i.e. on a continent-wide scale) and its choice of case studies (i.e. the Bell Beaker phenomenon). The novelty of his adaptation of polythetic modelling is that he explicitly introduces the notion of networks, which he calls 'polythetic networks' (see below). At the same time, Vander Linden regains the non-selective character that was lost by Clarke, who set so-called prestige goods apart, and he reincorporates these in his polythetic definition of networks (Vander Linden 2001/2002, 2004, 2006, 2007b). By contrast, Briault (2007) has adopted polythetic classification in a more selective manner, as a method to compare a particular group of site assemblages, attributed to a particular type of place (i.e. the peak sanctuary in the Bronze Age Aegean), yet on a regional scale.

The latter approach is adopted in this thesis, including the stricter sense of site assemblages, distinctive from the Clarke's wider sense of multi-sited (cultural) assemblages in his polythetic notion of culture (1968). Polythetic classification in the stricter sense can be described as intercontextual,[8] a comparative analysis of (site) assemblages in terms of their associations and dissociations (i.e. presence and/or absence of classes of objects). It makes explicit that the definition of types of place in archaeology is, essentially, based on discriminating between compositions of (site) assemblages. The premise is that assemblages can be dissociated from each other as distinctive types of place on the basis differences in their composition. At the same time, polythetic classification in the stricter sense is a data-rich form of archaeological synthesis. It can reveal associations between (site) assemblages in terms of shared classes of objects. It has the potential to highlight (partial) overlap of assemblages that have been attributed to distinctive types of place on the basis of assumptions. Similarities that cross-cut generalised distinctions, based on assumptions about types of place (and their relationships), can indicate the existence of 'multi-sited' practices (or, fields of practice). Along these lines, polythetic classification can be used to substantiate a network approach to cultural landscapes, revealing relational notions of place.

In this respect, polythetic classification has several methodological advantages that are briefly discussed here, although the proof of a pudding is in the eating, i.e. the case study (Chapters 3-8).

- First of all, the focus in polythetic classification is on objects, which complements the focus on places in the study of cultural landscapes. It starts from archaeological evidence, not from assumptions about site function, types of place and their interrelationships. Heuristically, analytical decisions about distinguishing between types of assemblages are made in the case study (i.c. cave and open-air assemblages). However, the possibility remains that the resulting 'polythetic' patterns cross-cut these analytical categories and initial assumptions, because the approach to pattern recognition is focused primarily on objects.
- Secondly, polythetic classification can therefore be regarded as non-selective. It can be used to overcome the tendency in landscape archaeologies to focus on one particular type of place (§2.1.1). Although such methodological rigour seems self-evident, even 'traditional' landscape approaches favour settlements (or settlement patterns) over other types of place, as a starting-point for reconstructions of past realities (e.g. Anschuetz et al. 2001).
- A third methodological advantage of polythetic classification is that it circumvents 'gaps' in archaeological records (§1.3.3). The issue of 'gaps' concerns those situations in which limited research has not yielded enough information to build up a general picture for the research area as a whole. Rather than placing emphasis on what is not (yet) known, polythetic classification starts from the details that are (already) available. Even for relatively unknown past realities, usually some detailed information is available in the form of a limited number of assemblages. Polythetic classification of these assemblages can inform hypotheses about 'polythetic' relationships (of association and dissociation) between places that go beyond generalised assumptions. In turn, it allows for comparison of 'informed' hypotheses with well-researched past realities (different regions or periods) in more detailed terms than simply stating the obvious ('absence of evidence').
- Finally, polythetic classification conforms to the same general principles that underlie the study of past realities from a network perspective (§2.2). Given that social life is 'multi-sited' (not

[8] Intercontextual is used here in its generic sense, to describe a relational approach of (site) assemblages, such as polythetic classification. This is distinctive from the term as coined for a specific approach, an "intercontextual archaeology" (Kristiansen & Larsson 2005, 10-15), which is not a form of polythetic classification.

limited to one place but situated in networks of places), place-making cannot be studied from the analytical isolation of one place (cf. Preucel & Meskell 2004). Pattern recognition of associations and dissociations between assemblages preserves, at least analytically, the notion that social life is distributed over a wider range of places.

On the whole, polythetic classification is a useful starting-point for any network approach to archaeological synthesis, but especially one that is data-rich and aims to incorporate patterns based on classes of objects as units of analysis.

From polythetic classification to place-making

The open-ended character of a polythetic notion of culture was a significant methodological and analytical improvement on Childe's classic 'bounded' notion of culture (cf. Gamble 2001, 57-58). The Childean approach is relational in the sense that it acknowledges recurrent patterns of associated traits (i.e. objects and practices), but in its aim at analytical closure it is not (cf. Jones 2007, chapter 4). Even polythetic models that are aimed at substituting fuzziness for boundedness, however, are still concerned with the delineation of 'cultures' (or 'cultural assemblages'), rather than fully appreciating the open-ended character of networks (§2.2). The same applies to 'holistic' approaches that, in the end, take cultural landscapes as units of analysis in their entirety. The distinction between 'cultural landscapes' and Childean 'cultures' (or 'cultural assemblages', sensu Clarke 1968) is a matter of scale, with the latter defined predominantly on regional to supra-regional scales and the former on micro-regional to regional scales. These scales are seemingly bridged by what Vander Linden (2004) calls 'polythetic networks', which he then uses interchangeably with 'interaction networks'. Together his 'polythetic' groups and networks preserve the notion of 'regional' building blocks on the continent-wide scale of the Bell Beaker phenomenon.[9] As such, he adopts polythetic classification in a 'classic' sense (see above) and as a heuristic device, but his approach cannot be regarded as a form of network analysis on micro-regional to regional scales.

It is only with the adoption of polythetic classification as a relational means to study site assemblages, with classes of objects as units of analysis, that its potential can be fulfilled in a network approach to archaeological synthesis. Whereas 'cultural assemblages' tend to refer to classes of objects and types of place in a generic, generalised or 'conceptual' sense (in terms of the overall distribution of cultural practices), in the context of 'cultural landscapes' (as networks of places) classes of objects can be subjected to a more detailed approach. Objects can be considered in an 'actual', practical and explicitly spatial sense on a (sub)regional scale, as part of forms of place-making. In this context, 'place-making' makes explicit the practical and relational notions of place that often remain implicit in cultural landscapes. It captures the notion that associations and dissociations, similarities and differences between (site) assemblages are emergent from depositional practices. In other words, particular classes of objects are selected for use in particular cultural practices, constitutive of particular places. A study of place-making has the potential to address the methodological problem of depending on generalised notions of place by adopting a non-selective form of polythetic classification. This approach can challenge (or substantiate) assumptions about distinctions and relationships between assemblages, instead of taking these for granted. The sensitivity of polythetic classification to pick up on subtle differences in place-making can lend necessary structure to microsociological, fragmented accounts, withouth introducing and reproducing assumptions underlying compartmentalised approaches to cultural landscapes and their selective focus on a particular type of place (§2.1.1).

Apart from polythetic (hence relational) classification of site assemblages, structure can be found in taking the 'actual', spatial distributions of depositional contexts of classes of objects into account (as places). Following generalised notions (or types) of place, compartmentalised (thematic or 'elementary') approaches tend to leave the uneven spatial distributions of elements across cultural landscapes unexplored. Admittedly, understanding uneven spatial distributions is a principal aim of polythetic models of culture, thereby introducing fuzziness to cultural boundaries (see above), but this often remains 'conceptual' and has seldom been realised in terms of 'actual' networks of places. In general, there is a tendency to regard places as interchangeable and expect that each element was omnipresent, rather than comparing the spatial distributions of each element with respect to other elements. This is, for instance, encapsulated in the presumption in Italian Bronze Age studies that each micro-region should in principle (and in the end) yield evidence of every element found in any other

[9] Admittedly, Vander Linden (2004, 38, 54) does make this aim at establishing a global, interregional framework to feed back into (intra)regional research explicit.

micro-region (§1.2.2). By contrast, a network approach to cultural landscapes should not start from presumptions about interrelationships between places. It should appreciate the possibility that 'gaps' in site distributions and archaeological records can be 'real' (i.e. significant in terms of past realities), not necessarily a research bias. Only then the issue of historically distinctive notions of territoriality can be addressed in terms of place-making (constitutive of cultural landscapes) by exploring the spatial dimensions of 'polythetic', relational notions of place. This will be underscored by the following discussion of deposition and ritual from the perspective of polythetic classification and place-making.

Place-making: cultural landscapes, deposition and the question of ritual

The term 'depositional practices' (in short, deposition) tends to be reserved for a particular subgroup of deliberate practices. The latter are overrepresented in Bronze Age studies because of their relative detail, which is a tempting but deceptive short-cut to intentionality (cf. Andrews et al. 2000), and their particular structural properties in the archaeological record (§2.1.3). In this thesis 'depositional practices' are taken to refer, indiscriminately, to objects and substances in any archaeological assemblage, from the perspective of polythetic classification (see above). This addresses the methodological issue in 'interpretive' approaches to favour one element or type of place over another, which results in partial and disconnected 'petites histoires' (§2.1.1). Studies of later prehistoric deposition have often focused on 'special deposits' or 'structured deposits', referring to features that are particularly telling on the deliberate placement and treatment of objects, especially in pits (but then not graves). These studies have now been subsumed under the banner of social memory or memory work (Mills & Walker 2008a; Van Dyke 2008) in archaeology. At the same time, however, the usefulness of a concept such as 'structured deposition' has increasingly been questioned because of its selective focus. Instead, "the fallacy of the idea that deposits can be unstructured" (Mills & Walker 2008a, 13 paraphrasing Pollard 2008) has been put forward (cf. Verhoeven 2002, 27). In other words, 'structured deposition' should be applied in its more generic sense to depositional practices in general.

The notion that depositional practices in general are structured is the starting-point of polythetic classification (see above). It can highlight patterning in archaeological assemblages, even in the absence of high-quality evidence such as so-called 'structured deposits'. The most clear-cut pattern that polythetic classification can reveal (in terms of associations and dissociations between classes of objects and site assemblages) is 'selective deposition'. It entails the exclusive association of a particular class of objects with a particular type of depositional context and its dissociation from other contexts. The concept of selective deposition is commonly used in the interpretation of metalwork deposition, to stress that it was constitutive of places in itself (cf. Fontijn 2001/2002, chapter 3), in other words, a form of place-making. Counterintuitively, such exclusive patterning is more frequent than one might expect, as shown in the case study of Early Bronze Age forms of place-making (Chapters 3-8), and does not only concern metalwork. The relatively frequent occurrence of patterns of selective deposition provides the opportunity to interpret these in terms of the selection of particular classes of objects for deposition in place-making strategies. Especially in those cases in which several classes of objects can be differentiated in terms of selective deposition, it sheds light on relational notions of place in cultural landscapes (to be linked to 'emic' categorisations of objects and places).

The assumption that depositional practices in general are structured and should therefore be studied as a whole, does not preclude that particular objects and substances were set apart in the act of deposition. Following from its sensitivity as an object based approach to contextual variability, polythetic classification can reveal these instances in the light of broader patterns (see above). It can address specific questions concerning selected – rather than all – archaeological assemblages (e.g. Briault 2007). A recurrent one of such specific questions in the study of later prehistory is the debated issue of how to distinguish 'ritual' from 'non-ritual' practice (Garwood et al. 1991; Barrett 1994; Hill 1995; Wilkins 1996; Brück 1999b; Verhoeven 2002; Bradley 2005; Barrowclough & Malone 2007; Lamdin-Whymark 2008; Berggren & Nilsson Stutz 2010; Insoll 2011). The issue of ritual is often implied by assumptions about types of place, hence frequently avoided or taken for granted by archaeologists. It is common practice to label archaeological assemblages on the basis of generalised notions of place and site function as either ritual (e.g. cult place, burial) or non-ritual (e.g. settlement). This is problematic because it cannot be precluded that 'ritual' and 'non-ritual' practices coincided at a given site (or alternated in place histories). Compartmentalisation cannot be taken for granted and, again, underlying assumptions about site function have to be tested. However, as is so often the case in archaeology, there is no final answer to the question of ritual. Polythetic classification cannot be decisive because of the problem of equifinality in the archaeological record. This means that the same

classes of objects can be present as a result of depositional practices with a distinctive character, a key issue in the study of domestic ritual practice (e.g. Bradley 2003, 2005).

In itself, such ambiguity could indicate that the deposition of the same class of object in distinctive archaeological contexts can be interpreted in terms of a single field of practice.[10] Moreover, the potential of polythetic classification to answer this specific question can be extended, based on the quality of archaeological evidence available. There is considerable variability in the standards of excavation and publication, which can make attempts at detailed comparison problematic. Although it is not unusual to encounter a lack of contextual information in older excavation and find reports, present-day publications regularly fail to provide contextual details, too. Differentiation in the quality of archaeological evidence does not only concern the composition of site assemblages, hopefully reported completely enough to be compared in polythetic classification, but also other contextual details. Parts of site assemblages can be treated separately, if they are circumscribed to particular features, without being acts of 'structured deposition' in a strict sense (see above). This could be of help in recognising ritualised practice and appreciating a spatial dimension of ritual that has not received as much attention as one might expect in archaeology. What has been termed 'bracketing' or 'framing' in ritual theory, explicitly refers to forms of place-making in which objects and substances are differentiated and set apart in the act of deposition (cf. Barrett 1994, chapter 3; Brück 1999b; Fontijn 2001/2002, chapter 2; Verhoeven 2002). Current approaches to 'memory work' in archaeology have begun to acknowledge the spatial dimension of 'framing', but tend to focus selectively on 'special deposits' (cf. Mills & Walker 2008), to the detriment of a more comprehensive polythetic classification. Arguably, most of the answers to the question of ritual in archaeology do not scrutinise the structure of the archaeological record enough, which will therefore be the next stop.

Notions of place and archaeological records

It is widely acknowledged that the archaeological record (or archaeological evidence) is fragmentary and incomplete, often as an obligatory statement of general source criticism, if not a lamentation of the condition of the discipline.[11] Archaeological records are partial in another sense, too, that is in terms of structured patterns of over- and underrepresentation (or their structural properties). One such pattern is that the remains of acts of deposition tend to be overrepresented in archaeological records. Objects and substances that were selected for deposition, followed a short-cut to 'fossilisation', in the deliberate engagement of these practices with the subsurface. In other words, there is an overall bias towards deposition in archaeological records. This is perhaps even more a characteristic (or structural property) of later prehistoric records, hence the temptation of a selective focus on 'structured deposition' in a strict sense (see above). In the end, the selective focus follows from the age-old distinction in archaeology between so-called 'open' and 'closed' finds (or contexts) and the common practice to let this distinction inform the dichotomy between 'routine' and 'ritualised' practices. The problematic character of this alignment is underscored by the paradox that so-called 'routine' and 'ritualised' practices have counterintuitive outcomes as to their respective archaeological visibility.

Generally, routine practices will have occurred most frequently and, moreover, at the same location (e.g. settlements), which makes it harder for archaeologists to recognise these in any detail (cf. Smith 1992, 29-31). On the other hand, ritualised practices can often be recognised in far more detail in the archaeological record, because these occurred less frequently and often in a more structured form of acts of deposition at specific places (e.g. burial, cult places or votive deposits). At first glance, this distinction between 'routine' and 'ritualised' practices seems to coincide with the traditional distinction between 'open' and 'closed' finds (or contexts). In this structured pattern of over- and underrepresentation in archaeological records lies the the temptation of a selective focus on particular types of place (e.g. 'structured depositions'). Thus, a distinction between 'routine' and 'ritualised' practice should not be based on the assumptions underlying the notions of 'open' and 'closed' finds. As any dichotomy, these distinctions should probably not be adhered to, too eagerly. In this respect, recognising structured acts of deposition at sites of (predominantly) routine practice has become one of the flourishing fields of interpretation in current archaeological practice, thereby questioning the

[10] An object based definition of a field of practice by polythetic classification (see above), linking 'ritual' and 'non-ritual' practices, could help to undermine their arguably often misplaced distinction (cf. Brück 1999b).

[11] Even the notion of the archaeological record itself has been questioned (cf. Patrik 1985), or alternatively regarded as an object of study in itself, rather than a means to an end, for instance in archaeological 'time perspectivism' (cf. Bailey 2007; Lucas 2012 for recent overviews).

relevance of the dichotomy (e.g. Brück 1999a, 1999b; Bradley 2003, 2005).[12] From a network perspective, the key issue is that making such distinctions should not undermine the 'multi-sited' interpretation of cultural landscapes (as networks of places). This problem is related to a more general concern about relational narratives in archaeology. Here I turn to the emergent field of studies concerned with object biographies for an initial discussion of relational notions of place and the structure of archaeological records.

Object biographies and notions of place

Archaeologists have embraced the concept (or metaphor) of 'object biography' as a framework to discuss the lifecourse of objects (e.g. Gosden & Marshall 1999; Joyce 2000; Fontijn 2001/2002; Whitley 2002; Jones 2002, 2004; Meskell 2004; Vandkilde 2005; Lindenlauf 2006; Wentink 2006; Marshall 2008; Watts 2008; De Grummond 2009; Joy 2009; Caple 2010; Richard 2010).[13] The study of object biographies is one of the few fields in the discipline that makes the overall bias towards deposition in the archaeological record explicit. Biographical approaches are relational in their aim at producing accounts that go beyond the bias towards the end of the lifecourse of objects (i.e. deposition), and thereby acknowledge which stages in the life of objects are underrepresented. Nonetheless, archaeologists are tempted to follow the linearity inherent in the narrative structure of the biography concept (birth, life and death) for the sake of coherence. Stereotypically, biographical accounts follow objects from raw material and production through exchange and (re)use to discard/deposition (or, alternatively, 'non-ritual' into 'ritual'). On the one hand, such a sense of linearity is implicit in the initial source of inspiration for archaeologists (Appadurai 1986a; Kopytoff 1986), notably its focus on recontextualisation of objects. On the other hand, linearity sits well with an underdeveloped notion of context and meaning in archaeology, related to the structural properties of archaeological evidence (see below).

The simplicity of a 'linear' approach has been criticised, most recently by Joy (2009) who argues that object biographies can "also be seen as non-linear, consisting of a series of connected jumps as the object becomes alive within certain clusters of social relationships and is inactive at other points in time and space, undergoing a series of different lives and deaths" (Joy 2009, 544). This illustrates that currently more sophisticated notions of object biography are adopted in archaeology. For instance, a distinction is made between 'generalised' and 'specific' biographies, or a 'typical' biography is used to expose other object biographies that deviate from the 'norm' (Gosden & Marshall 1999; Fontijn 2001/2002; Joy 2009). Similarly, a distinction between 'inscribed' objects and 'lived' objects differentiates between biographies (Marshall 2008; Joy 2009). Alternatively, approaches that are explicitly relational, 'follow' objects in series of places and/or study biographies of not one but several classes of objects and substances simultaneously (Jones 2002, 2004; Brück 2006a, 2006b). Rather than starting from assumptions about types of place, these approaches focus on the (mutually) constitutive role of objects in place-making, hence on relational notions of place. What remains problematic, however, is a selective focus, rather than the 'non-selective' stance necessary in archaeological synthesis. The focus on particular classes of objects means that biographical case studies depend on unsubstantiated assumptions about their position in networks of objects, people and places as a whole (§2.1.1). To reiterate, from a network perspective, the problem boils down to a dependence on unsubstantiated assumptions about places and their interrelationships.

It cannot be denied that object biographies have relational qualities and lend structure by connecting several stages in the life of an object in a single framework. The heuristic value of object biographies is unmistakable, yet it comes at the price of generalisation (as any concept) (cf. Witmore 2012). In particular, each stage can more or less be equated with a generalised notion of place, i.e. sites of production, exchange, (re)use and deposition. There is a risk that stages in object biographies will – as types of place – be conflated with contexts in an unsophisticated, bounded, non-relational sense. Erstwhile 'contextual archaeology' defined context as "the totality of the relevant environment, where

[12] Some archaeologists would even go so far as to argue that such instances are perhaps our only source of evidence for any kind of interpretation of routine practices: "If domestic life really had been ritualized in the ways suggested here, it might mean that some of the deposits investigated in a traditional manner had already been modified through social practices of which prehistorians are just becoming aware. Perhaps ritual itself was one of the formation processes that gave their raw material the coherence that allows it to be interpreted at all" (Bradley 2003, 21).

[13] The increasing popularity of the study of object biographies in archaeology is parallelled as one (if not the main) strand of (re)emergent concerns with material culture in anthropology (cf. Jeudy-Ballini & Juillerat 2002; Hoskins 2006; Bell & Geismar 2009 for recent overviews).

'relevant' refers to a significant relationship to the object – that is, a relationship necessary for discerning the object's meaning" (Hodder 1986, 139). Paradoxically, this leaves the object (and the object's meaning) fixed in a system of signification (cf. Yates 1990). The paradox is that an object biography is then not object based but place based, in the sense that the reconstructed meaning of objects is based on assumptions about types of place (and their relationships). The tendency to define context as bounded (again, a container metaphor, sensu Lakoff & Johnson 1980) implies that in a given context only one meaning was attached to an object. Then, stages in object biographies – as contexts – are turned into a series of containers, a relational straitjacket that forces archaeologists to tell stories following a linear narrative structure.

Whereas sociologists can substantiate a trajectory of continuous recontextualisation of an object (notably, the oft-cited Appadurai 1986a and Kopytoff 1986), archaeologists should be more appreciative of 'gaps' in archaeological records and not use the biography concept to fill 'gaps'. Joy's 'non-linear' approach to object biographies as "a series of connected jumps" (2009, 544; see quote above) goes some way to resolving the problem of narrative linearity inherent in the biography concept, but not entirely. On the one hand, it entails a relatively sophisticated approach in stressing that biographies of objects are punctuated, akin to life changing, lifecourse events that punctuate the biographies of people. On the other hand, it preserves the relational straitjacket, in suggesting that a new object emerges (or an object emerges renewed) in each (social) context. In addition to such punctuated sequences of recontextualisation in the 'classic' sense of object biographies, other 'non-linear' scenarios should be taken into account, too. 'Non-linear' permutations of stereotypical object biographies are actually not uncommon in Bronze Age studies. Some of these permutations will be discussed next in terms of notions of place and the structure of archaeological records, with the interpretation of metalwork as an example. Here I will substantiate that, from a network perspective, object biographies constitute a relational straitjacket.

Bronze Age exchange networks: metalwork and movement

Apart from the overall bias towards deposition, the structural properties of archaeological evidence related to Bronze Age metalwork would seem to create another 'gap' in object biographies. Whereas places of metalwork deposition are definitely overrepresented in Bronze Age records (hence cultural landscapes), places with direct evidence for metalwork production and sources of raw material tend to be underrepresented (cf. Ottaway & Roberts 2008; Roberts 2008). At the same time, the presumption is that places where metalwork was exchanged and, to a lesser extent where it was (re)used, cannot be excavated, only inferred. Additional information for these stages in object biographies can be gathered from traces of production and (re)use on the objects themselves. However, object studies are similarly biased against exchange, in the sense that handling of objects in the exchange stage does rarely 'fossilise', so to say (see Wentink 2006 for an exception). Provenance studies of metalwork can be used to remedy the bias against exchange, but only to a certain extent, in the absence of data-rich reconstructions of Bronze Age networks. Arguably, the 'black box' character of exchange is so ingrained in archaeological interpretation that the elusive character of places of exchange is not considered a problem in Bronze Age studies. Exchange networks are used by archaeologists mainly as a concept for its intermediary capacity, to create connections between one bounded cultural entity and another.

The notion of exchange networks tends to be used in a very generic sense to fill 'gaps', thereby creating flows of substances (in this case raw material or finished pieces of metalwork) on a supra-regional scale.[14] I would argue that the 'gap' created from an elusive stage of exchange is necessary to create flow in object biographies (see above). The 'real costs' involved in moving from one place to another in multi-sited lifeworlds disappear from the picture in archaeological interpretation and synthesis. Admittedly, there has been a growing concern in landscape archaeologies with travel, journeys and mobility (or movement) in general (e.g. Bender 2001; Hofmann et al. 2005; Kristiansen & Larsson 2005; Farr 2006; Cummings & Johnston 2007a; Gibson 2007; Roberts 2007; Roberts 2008b; Aldred & Sekedat 2010, 2011a, 2011b, 2011c). A major impetus for such research, however, is the need to bridge self-inflicted 'gaps' in an attempt to connect disparate, bounded entities, such as cultural groups and types of place. All in all, the growing concern with mobility, the black-box character of exchange networks and the popularity of object biographies arise from (or dodge) the same problem:

[14] For instance, the uneven distribution of metallic resources on the basis of which the presence of exchange networks can be postulated, has become a truism, a trope, if not self-explanatory in Bronze Age studies.

generalised notions of place that are relational in a conceptual sense but not in the spatial sense of 'actual' networks. By consequence, biographies of so-called 'exotic' objects, for which a distant origin is plausible, tend to be pursued most frequently.

In these cases, exchange over long distances can be postulated as a significant stage, without having to specify the 'costs' of actual movement. Even if an 'exotic' object can be sourced to a specific location, based on provenance studies, it is the generalised connotation of 'distance' (far away from places of deposition), not the place of origin itself, nor the actual path followed by people (carrying substances and/or objects) between a source and a depositional context, that is invoked to instill a lasting, 'mythological' dimension into an object in order to rationalise its deposition (e.g. Jones 2002). In other words, such an object biography is a derivative, a secondary rationalisation of the label 'exotic', defined from the perspective of the 'actual' place of deposition, juxtaposed with 'distance' (i.e. a generalised distant place). At the same time, this interpretive strategy is prompted by the narrative linearity in the biography concept, which presupposes that an object acquires several meanings only along its lifecourse (see above). The focus on accumulation of meaning denies, for instance, the possibility that an object (or substance) had been polyvalent from the start. In general, the object is regarded as creating a network of places (as if in a void), which denies (or mystifies) the prior existence of a network of places through which the object follows a path. Placing emphasis on the (conceptual, seldom 'actual') paths that objects follow between (conceptual, seldom 'actual') places reinforces the 'black-box' character of exchange. It denies the 'real costs' of a network by allowing objects to move, but leaving people in place.

The focus on special cases, such as 'exotic' objects, obscures the more general notion that movement is inherent in the 'multi-sitedness' of social life and landscapes (as networks of places). Exchange as practice (connecting 'actual' places and involving movement of people) is left implicit in 'Strathernian', relational ontologies in which flows of substances are exchanged between people, objects and places (§2.1.3). Object biographies in archaeology illustrate that such flows often need a 'gap' created by a language game that juxtaposes the 'local' (i.e. depositional context) and the 'non-local' or 'exotic' (i.e. origins, outside the 'local' context that is taken as a starting-point).[15] On the one hand, archaeologists tend to overlook that depositional contexts are actually places and that deposition is an act of place-making, part of a mutually constitutive relationship with cultural landscapes (cf. Ballmer 2010). Misguided by the bias towards deposition in archaeological records, the emphasis is on the incorporation of conceptually 'non-local' objects in 'local' contexts, without reference to networks of places. This leaves implicit the places where exchange actually took place, inbetween 'distant' origins and deposition, and where people had to negotiate notions of 'non-local' and 'local' (e.g. Fontijn 2001/2002, 2009). By leaving the movement of people implicit, the cross-cultural character of exchange as social practice remains placeless and undertheorised. Exchange is left "somewhere in the middle", a 'non-place' inbetween places with archaeological visibility in Bronze Age records.

The elusive, 'black-box' character of exchange is to a large extent self-inflicted, following from the same generalised notions of place and interrelationships between types of places that turn object biographies into a relational straitjacket (see above). This can be illustrated by debates concerning the 'classic' Childean scenario of so-called "travelling artisans" in the interpretation of Bronze Age metalwork production and exchange (cf. Childe 1930, 1957). This scenario rightly deserves criticism if it treats (crafts)people as a mechanism to fill a 'gap' in archaeological interpretation and synthesis and to connect bounded entities, in this case groups (or cultures) with and without metallurgical knowledge. At the same time, it deserves rehabilitation and full exploration, if it can be substantiated from a network perspective. Then the relational straitjacket of object biographies that confines people with metallurgical knowledge to sites of production, separated from places of (re)use and deposition, can and should be questioned. It remains to be seen to what extent metallurgical skills and knowledge were widely available (or not). This question is addressed in the quest for the earliest, incipient, Neolithic and Copper Age metallurgies (cf. Roberts 2008a, 2008b), but is often left implicit in Bronze Age studies. It has been subsumed under the notion of exchange as an intermediary, seemingly elusive stage (see above). For a start, it can be argued that metallurgical knowledge was not as widespread in the 'earlier' Bronze Age as in the 'later' Bronze Age. By implication, the scenario of "travelling artisans", making (otherwise unavailable) technological knowledge available at their destination, cannot be dismissed offhand.

[15] Cf. Van Rossenberg 1999 on the pervasiveness of outside/external : inside/internal dichotomies in interpretation and synthesis in Bronze Age studies.

Limited availability of metallurgical knowledge would distort the narrative linearity of object biographies. If the destination of "travelling artisans" is a settlement, then places of production, exchange and use of Bronze Age metalwork are actually one and the same. Another set of 'non-linear' permutations presumes that people without metallurgical knowledge are not 'sitting ducks', confined to their settlements. They can travel to places of production to acquire objects elsewhere, again linking a place of exchange to a production site. Alternatively, they can travel to a designated place, for instance a shared cult place, where people with and without technological knowledge met and were involved in exchange. These 'non-linear' permutations that allow (if not force) Bronze Age people to move about, highlight that the stages that are kept separate in the relational straitjacket of object biographies, could have coincided in actual networks of places. Exchange is not necessarily elusive, taking place somewhere inbetween. 'Black-box' notions of exchange in archaeology overlook that, for travel to be successful, people actually have to meet other people. It requires knowledge and skills, as well as adaptability to unforeseen circumstances (cf. Farr 2006, 2010), and last but not least designated (or emergent) meeting-places. Archaeologists should feel prompted to unpack the 'black box' and explore the embeddedness of exchange, as a 'multi-sited' practice situated in places that are already known from the archaeological record. Incidentally, this is consistent with the notion of so-called 'down-the-line' exchange in Bronze Age studies, often invoked but seldom substantiated. The overall implication should be that exchange is an epiphenomenon of settlement patterns (or networks of places).

To sum up, I would argue that, because of the tendency to reinforce generalised notions of place that follow a linear narrative, a collection of biographies of several (or even all) classes of objects does not add up to a network of actual places. Networks are not created by 'one-way' traffic from one place to another. More than one direction and a wider range of places should be accounted for. Bronze Age metalwork deposition created a demand for objects, to be supplied by metalworkers, but also the other way around. There would have been no deposition without supply, no production without demand. Networks stretch the full length of object biographies, back and forth, with people on the move between places, releasing objects from their relational straitjacket.

2.1.3 A network approach to cultural landscapes: relational notions of place

So far the notion of cultural landscapes has to a large extent been left implicit in the phrase "networks of places" in this chapter. The discussions of interpretive landscape studies (§2.1.1) and object biographies (§2.1.2) highlighted the problem of adopting a 'selective' focus on particular types of place, on the one hand, and generalised notions of place, on the other. Both these problems also apply to cultural landscape approaches, with the implication that the spatial dimensions of cultural landscapes tend to be generalised. If reconstructions of cultural landscapes are not explicitly phrased in terms of networks of places, there is the risk that relational notions of place are 'imagined' and do not refer to 'actual' spatial relationships between places. Placeless notions are problematic for the study of historical trajectories, because imagined dimensions of cultural landscapes cannot be subjected to spatial analysis and, therefore, are ahistorical (i.e. dehistoricised). To put it differently, whereas places (hence networks of places) have trajectories, cultural landscapes based on 'imagined' relationships do not. The problem of generalised notions of place will be underscored in a discussion of so-called 'relational ontologies', a set of approaches that has become increasingly fashionable as a form of archaeological synthesis. In particular, I will take the notions of ancestorhood, sacred (or ritual) landscapes and natural places as examples and make an attempt at rephrasing these in terms of a network approach. Then I will outline how relational notions of place can be phrased in an explicitly spatial sense, with special reference to the structure of archaeological records. Finally, the relevance of polythetic classification (§2.1.2) for the case study will be specified by examples of relational source criticism, cross-cutting generalised notions of place.

Relational ontologies

Biographical approaches to objects (§2.1.2) are often subsumed under the more general heading of so-called 'relational ontologies' in recent archaeological theorising. Advocating nonhuman agency, relational ontologies conceptualise biographies of objects, substances and people as meshed and as constitutive of notions of personhood and sociality. The source of inspiration is Oceanic or Melanesian ethnography, often termed "Strathernian" after Marilyn Strathern's pioneering work on partible and dividual (rather than discrete, bounded and individual) relationships between objects and people in the perpetual creation of personhood and sociality (cf. Strathern [Marilyn] 1996; Goldman & Ballard 1998; Stewart & Strathern [Andrew] 2001; Jeudy-Ballini & Juillerat 2002; Hoëm & Roalkvam 2003; Rio &

Smedal 2008; Stewart & Strathern [Andrew] 2008; Bell & Geismar 2009; Holbraad & Pedersen 2009; Rio 2009; Boric & Strathern [Marilyn] 2010). The adoption of relational ontologies as an interpretive framework in archaeology suffers from the same generalising tendency as biographical approaches (§2.1.2), in the sense that both approaches are relational in a conceptual sense but tend to be uprooted from networks of places (e.g. Thomas 1999; Tilley 1999; Jones 2002; Jones & MacGregor 2002; Brück 2004; Fowler 2004; Jones 2004; Brück 2006a, 2006b; Cochrane 2006/2007; Hofmann 2006/2007; Fowler 2008a, 2008b; Boric & Robb 2008a; Gaydarska & Chapman 2008; Knappett & Malafouris 2008; Malafouris 2008; Marshall 2008; Pollard 2008; Sørensen & Rebay 2008; Spriggs 2008; Alberti & Bray 2009; Roscoe 2009; Brittain & Harris 2010; Herva 2010; Herva & Salmi 2010; Herva & Ylimaunu 2010; Mlekuz 2010; Creese 2011; Hill 2011; Gosden 2012). In the case of relational ontologies, the problem of placelessness partly derives from the original focus in Melanesian or Oceanic ethnography on the flows (or exchanges) of substances between objects people and environment. Such flows serve as an interpretive framework for relational notions of place in terms of lifeworlds or cosmologies in a generic sense. This generic framework tends to undertheorise place-making, both 'locally' and on the scale of landscapes as a whole. A new generation of Oceanic ethnographies, however, shows an increased concern with sociality in relation to landscape. This holds the promise of broadening the convergence with landscape studies in archaeology (cf. Hoëm & Roalkvam 2003; Stewart & Strathern 2003). In this respect, the shared source of inspiration in Australian Aboriginal ethnographies will only deepen the convergence between the emergent larger comparative Oceanic project and archaeological landscape studies.

Oceanic ethnographies increasingly acknowledge that substances connecting objects, people and environment do not flow in a cosmological void, but from somewhere to someplace. In archaeology, at present, the placeless notion of flows of substances seems to prevail in the adoption of relational ontologies. This is apparent in the adoption of text-based (or hypertext-based) concepts such as 'indexical fields' (Jones 2007) or 'fields of agentic relationships' (Pauketat 2008), in which 'fields' tend to refer to conceptual grids used by people for 'citation' in the deployment of objects and substances. Such reconstructions (or sketches) of relational ontologies cannot be regarded as a form of archaeological synthesis because of their inherently placeness notion of networks. By contrast, case studies that explicitly link flows of substances to depositional practices, do show a concern with place-making (e.g. Joyce 2008, Pollard 2008). As argued, however, these instances tend to suffer from a selective focus on 'special cases' or 'structured deposits' (§2.1.2). The presumption is that such deposits can be interpreted as socially or cosmologically significant acts of place-making (as social memory or memory work; cf. Mills & Walker 2008a; Van Dyke 2008). Even if in some cases this presumption can be substantiated, 'special cases' cannot be regarded as condensed instantiations of relational ontologies by default. What case studies of 'memory work' do show is the potential relevance of relational ontologies in archaeology, but without substantiating it. There is no methodologically sound short-cut, other than a non-selective approach. All acts of place-making have to be taken into account indiscriminately, with the aim to define relational notions of place polythetically, from which a relational ontology may (or may not) emerge, including particular acts of place-making as its condensed instantiations.

Personhood and ancestorhood

The problematic character of a placeless approach to relationality can be illustrated by making a comparison between personhood and ancestorhood, the former an 'object based' notion and the latter 'place based'. Following the ethnographic, "Strathernian" source of inspiration, relational approaches to personhood tend to start from disarticulated human remains (or other evidence for secondary burial) as a short-cut to dividuality, as opposed to a modernist sense of individuality (cf. Fowler 2004). At the same time, more sophisticated approaches have adopted the notions of partibility and dividuality in the interpretation of articulated burials without such evidence for secondary treatment of human remains, explicitly avoiding the temptation of the application of a modernist sense of individuality (e.g. Brück 2004; Rebay-Salisbury et al. 2010). Both these relational approaches to personhood are primarily focused on objects and substances, either disarticulated human remains as partible substances in themselves, or dead bodies, objects and substances as a relational whole. In the latter case, the traditional interpretation of objects and substances as grave goods (in the sense of personal belongings) is extended to include mutually constitutive relationships between objects and people (in the sense of relational ontologies). This interpretive extension rightly highlights the problematic character of the notion that so-called individual burials constitute closed finds (or contexts), on the basis of which

funerary assemblages can be used as a short-cut to social structure. For instance, it has underscored that idealised, cosmologically defined notions of persons should be taken into account.

Nonetheless, approaches to personhood in general still focus on human bodies as a metaphor for sociality (or cosmology) at large.[16] As a special case of relational ontologies (see above), archaeological case studies in personhood often fail to make a connection with relational notions of place. This is especially the case, if the 'actual', spatial distribution of funerary contexts (as places) in relation to other elements in cultural landscapes (as networks of places) is left unexplored. Again, the problem here is one of a selective focus on a particular type of place. In establishing that disarticulated human remains (were) moved between different places, assumptions based on generalised notions of place are introduced to substantiate the otherwise normal character of 'non-funerary' contexts (e.g. settlements) where human remains ended up. Another problem that tends to be overlooked in relational notions of personhood, is that Bronze Age situations are more often than not characterised by selective burial (at least from the perspective of archaeological visibility). If so, the evidential basis for relational ontologies is even smaller (in the sense of socialities at large), as it does not simply concern a selective focus on 'special cases' but a selective focus on 'special cases' in a selective context. The underrepresentation of funerary evidence makes the exploration of spatial relationships between the few places of burial (that are archaeologically visible) and all other places more pregnant and, arguably, by definition rewarding from a network perspective.

Admittedly, notions of ancestorhood suffer from the same generalising tendency as relational ontologies. In this respect, relational ontologies seem to make explicit what remains implicit when archaeologists use terms such as 'ancestors' and 'ancestral' (cf. Whitley 2002a; Davies & Robb 2004). In common use, more often than not these terms invoke a generic notion of ancestorhood, intimately connected to a generic notion of fertility, with reference to a universal principle taken from ethnographic records that remains unspecified (cf. Steadman et al. 1996). Implicitly or explicitly references are made to conceptual synchronisation (by metaphorical relationships) of cyclical rhythms in the environment (including agriculture) and social life (or reproduction), again more often than not in a generic sense (cf. Williams 2003). At the same time, the use of terms such as 'ancestral places' and 'ancestral landscapes' does indicate that the notion of ancestorhood has a strong connotation of place (arguably, stronger than personhood), both in common use and in archaeological interpretation. Still, the notion of ancestral place tends to be linked to a particular type of place, notably standing monuments (§2.1.1). In particular, the STONEHENGE environs have come to be regarded as eponymous of a monument-ridden ancestral landscape and this micro-region keeps on stealing the spotlight as the icon of English ancestry (e.g. Barrett 1994; Barrett & Fewster 1998; Bender 1998; Parker Pearson & Ramilisonina 1998a, 1998b; Whittle 1998; Parker Pearson 2002, 2004; Parker Pearson et al. 2006, 2009; Pollard 2009; Darvill & Wainwright 2011). Within the focus on monuments, however, more sophisticated approaches have been adopted to notions of ancestorhood in later prehistory, too, such as making a distinction between 'mythological' (or 'apical') and 'genealogical' (or 'emergent') ancestors, with special reference to intersections with notions of place.[17]

The place based connotation inherent in notions of ancestorhood is acknowledged in a growing body of work. Place history approaches (cf. Ashmore 2002) have singled out places that show trajectories of (re)use in the long term, in particular monuments (e.g. Barrett 1994; Bradley 1998, 2002).[18] Often the phenomenon is interpreted in terms of curation (or later adoption) of ancestral places to create a sense of rootedness with their land on the part of later prehistoric communities (cf. Whitley 2002a for a critique). Nowadays place history (or so-called 'past in the past') approaches are subsumed under memory studies in archaeology (cf. Van Dyke & Alcock 2003; Van Dyke 2008). This underscores their shared concern with (and selective focus on) 'special cases' and/or particular types of place. It should be appreciated, however, that not only a selection of particular places, but cultural landscapes in general have inherently diachronic dimensions, if they are considered as palimpsests of existing, prior places juxtaposed with new places. Arguably, the relational notion that cultural landscapes are palimpsests, gets lost in the small geographic scale (if not a very selective focus on a single monument) of case studies in place history. Here I'd like to stress that this relational notion of cultural landscapes as palimpsests is different from the 'residuality' trope that is frequently adopted in

[16] Cf. Meskell 1996 for a more careful analysis of the nature of discourses on individuals and society.

[17] Cf. Fontijn 1996, distinguishing between mythological and genealogical ancestors; and, Fokkens 2012, adopting Helms' distinction between apical and emergent ancestors (1998).

[18] Because of a general lack of later prehistoric traditions of monumentality on the surface, Central Italy has been left outside this strand of interpretive archaeologies, unlike Northern Italy (e.g. Bradley 2002, 96-102) and Southern Italy (e.g. Robb 2008).

'past in the past' approaches and stresses the generically persistent, material quality of objects as a self-evident explanation for their so-called 'multi-temporality' (e.g. Bradley 2002; Jones 2007). As a universalistic trope, it does not stress enough that material conditions are historically specific (hence relational).

Instead, it should be understood that (prior) objects and places have to be (re)activated as part of (subsequent) networks, as they could have been left aside as easily (if not more easily) and excluded from networks. To consider cultural landscapes as a 'palimpsest' in this relational sense captures the notion that places provide a starting-point for further place-making, and extends it to their conceptualisation as networks of places (e.g. Wallis 2008). In short, it adds a diachronic dimension to relational notions of place. Cultural landscapes should not be reified as bounded (synchronic) entities, but rather considered as (potentially) relational in a diachronic sense, too.

Sacred landscapes, natural places and liminality

Two related misconceptions may have arisen in the discussion of cultural landscapes so far, that they can be equated with sacred or ritual landscapes and distinguished from physical landscapes. In line with the issue of the presumed discreteness of places following from generalised notions of place (§2.1.2), criticism has been raised about regarding ritual or sacred landscapes (or geographies) as an object of study in themselves, in particular the sense of disconnectedness it creates (cf. Van Dommelen 1999). Although there is an overt sense of relationality to the notion of sacred landscapes, it is based on the assumption of a coherent and overarching scheme underlying cosmology or landscape perception. The implication is that a ritual landscape or sacred geography is a project or system of signification on a regional to supra-regional scale that asigns all places a fixed position in an overarching cosmological scheme, and that its maintenance is based on a division of labour between all parties involved. Starting from an overarching cosmological scheme, social networks and intergroup relations are often conceptualised primarily in terms of cosmology, too. A small group of people acts as representatives on behalf of local communities or even exercise a monopoly in religious matters on a (supra)regional scale, such as securing the flow of non-local, ritually significant objects. On the one hand, this recognises the social dimensions of cosmology and highlights exchange (networks) as a field of practice that overlaps and interconnects with other fields of practice. On the other hand, if a connotation of socio-political power is added to exchange in terms of prestige goods and elite practice, the question is to what extent an overarching cosmological scheme is a vision that is shared by communities as a whole, rather than an elitist field of practice.

Such closed systems of signification are exemplified in archaeology by Mesoamerican cosmovisions that supposedly permeated everyday life and were symbolically nested (e.g. person – house – village/city – micro-region – region – cosmos), following structuralist principles (cf. Ashmore 2009). Paradoxically, the misconception of sacred landscapes as a closed system, as a single field of practice or as a concerted effort on a (supra)regional scale, entails a lack of appreciation for relational notions of place. Because of this aim for conceptual closure, sacred landscapes are synchronic and bounded entities by definition, no matter how complicated the underlying cosmologies and their intercontextual ramifications. The tendency to interpret places from a regional perspective (within a cosmological framework) in the study of sacred landscapes, is to the detriment of a more detailed analysis of places themselves. For instance, the incorporation of 'non-local' objects in 'local' contexts is left unexplored as a form of place-making. Depositional patterns are regarded as self-evident by taking the bias towards deposition in the archaeological record at face value (§2.1.2). In a similar vein, natural places, such as mountains, rivers, lakes, springs, etc., are linked to general notions of place from the perspective of sacred geography, following the generalising tendency inherent in the adoption of an overarching cosmological framework (see above). The assumption is that any mountain, river, lake, spring would do in the mental template of a sacred geography. This is at odds, however, with the relational notion that not any, but particular natural places were selected, were subjected to place-making, and thus constituted nodes in networks.

No matter how many times Australian Aboriginal landscapes of Dreaming (e.g. Taçon 1999; Strang 2002; McNiven 2003; Morphy & Morphy 2006; Bradley 2008; Strang 2008) are invoked as a 'useful' ethnographic parallel for the intersection of natural places, notions of ancestorhood, journeys and social formations in later prehistory (e.g. Dickins 1996), later prehistoric cultural landscapes should not be equated with them to begin with, without a close understanding of relational notions of (natural) place. A network perspective is therefore the answer to Bradley's question, "how far is it possible to study the ancient landscape when the monuments are stripped away?" (2000, 14). Similar to ancestral

places (see above), natural places are prior (pre-existent) places, with which people did (or did not) engage in their acts of place-making. Monument-less landscapes, such as Central Italy in the 'earlier' Bronze Age (Chapters 3-9), challenge archaeologists to study the selective incorporation of natural places, as evidenced by their 'actual', spatial distributions with respect to other elements of cultural landscapes (as networks of places). In this respect, a growing body of work demonstrates that intimate knowledge of the physical landscape was available, and acted upon, in past realities, including the procurement of particular raw materials (cf. Boivin 2004). Case studies in this field (e.g. Jones 2007; Bradley 2008; Fowler 2008a; Reynolds 2009; Brumm 2010) intersect both with biographies of 'exotic' objects (§2.1.2) and the notion of flows of substances in relational ontologies (see above). In addition, there is a growing concern with 'actual' places in the study of past bodies of knowledge about physical landscapes and related geographical knowledge. Overall, this field of study benefits from its intersection with the never-ending concern with provenance studies of the raw material of objects in archaeology, which have become increasingly sophisticated (cf. López-Romero González de la Aleja & Montero-Ruiz 2006; Thornton 2009 on metallurgy).[19] Still, the lipservice of the latter to the placeless character (or 'black box' notion) of exchange networks should not be overlooked (§2.1.2).

Another intersection of the study of past geographical knowledge is the growing concern with travel in later prehistory. In particular, the practical, social and cosmological dimensions of seaborne travel have received ample attention (e.g. Cooney 2003; Chapman & Gearey 2004; Sturt 2005; Farr 2006; Needham 2006; Samson 2006; Fontijn 2009; Farr 2010; Kerns 2010; Garrow & Sturt 2011; Le Bihan 2011). By contrast, the study of land-based travel and journeys has been divided between generalising approaches subsumed under the black-box notion of exchange (§2.1.2) and the particularism of phenomenological approaches to later prehistoric landscapes.[20] Different from travel in general, Kristiansen & Larsson (2005) have argued for the significance of very specific journeys, connecting Scandinavia and the Mediterranean, albeit highly contested in Bronze Age studies. The social and cosmological connotations of travel are often linked to crossing boundaries or traversing 'empty' spaces, such as seas, deserts and mountains, and interpreted in terms of liminality (e.g. Cooney 2003; Kerns 2010).[21] Similarly, natural places tend to be conceptualised as liminal in themselves, to a large extent deriving from a modernist dichotomy between nature and culture that leaves natural places on the margins of, or even outside cultural landscapes (from the perspective of settled communities) (cf. Bradley 2000). This can also be discerned in the common use of marginality to describe mountainous areas, deserts and wetlands, with the implication that their exploitation was occasional or seasonal at the most.[22] This interpretive strategy can also be subsumed under the methodological problem of generalised notions of place.

Tagging places or larger areas with labels such as 'marginal' or 'liminal' creates a sense of disconnectedness between places that is at odds with a network perspective. It mystifies that they actually lie at the heart of travel and creating connectivity (cf. Aldred 2008; Aldred & Sekedat 2010, 2011a, 2011b, 2011c). The conceptualisation of particular (generally natural) places as 'liminal' in landscape studies often aligns with making a distinction between 'ritual' and 'non-ritual' in terms of generalised notions of place, rather than polythetically in terms of practices (§2.1.2). It should be understood that depositional practices that engage with natural places (such as bodies of water, caves or mountains) are not about marking out their liminality, but rather about incorporating them in cultural landscapes (as networks of places). Because of their geographical locations, so-called 'liminal' or 'marginal' places were situated at the heart of social interaction and intergroup relations. Anthropologists have long recognised that liminality is not so much a spatial concept with ritual connotations, as a social concept, i.e. a form of spatial categorisation that is ritually enmeshed in social practices and interaction between insiders and outsiders (i.e. group definition) (cf. Helms 1998, chapter 5). Liminality is not simply a cosmologically informed category, but one that is enmeshed in practices of place-making and social networks, including but not exclusively connected with human-(super)natural interactions. Incidentally, such a rephrasing of liminality does not only help to incorporate natural places in cultural landscapes, but also puts emphasis on (and helps to restore) place-based notions in relational ontologies (see above). More often than not a link can be made between the selection of natural places (such as springs, river sources and caves) as a focus for deposition and their

[19] Arguably, the electability of science-based archaeology (over so-called interpretive archaeology) in funding is a major impetus.
[20] For current (debates on) phenomenological approaches to landscape in archaeology, see Bender et al. 1997; Tilley 1999, 2004, 2008 and critics (e.g. Fleming 2006; Barrett & Ko 2009).
[21] Cf. Babcock 2004 on overstretching the original notions of liminality.
[22] But cf. Olwig 2005; Sturt 2006 for more sophisticated approaches to liminality, seasonality and landscape.

physical characteristics, defined by the exchange or flow of (natural) substances between the subsurface and surface.

Then, depositional practices can be regarded as engaging with (or tapping into) flows of substances at particular places. Although such an understanding of natural places recalls generic cosmological notions of land, ancestorhood, environment and fertility and their metaphorical intersections (see above), it does appreciate their place-based character and the reality of flows of substances. This means that they can be studied in terms of networks of places, thereby taking issue with the second misconception about cultural landscapes, that they can be distinguished from physical landscapes. Following the modernist culture-nature dichotomy, the general tendency in archaeology remains to consider the 'natural' environment as a backdrop to 'cultural' realities (cf. Barrett 1999a).[23] Given the focus on the long term in environmental reconstructions, there has long been a problem with their chronological resolution in an archaeological sense. The resulting ecological and/or geological phases (or horizons) have traditionally exceeded the duration of phases in archaeological periodisation. However, the current concern with climate change has prompted a focus on fluctuations in the shorter term and, accordingly, more detailed dating programmes. This has brought the chronological resolution of environmental reconstructions more in line with archaeological periodisation and opened up new ways for cooperation. Interdisciplinary research is facilitated by the online availability of the majority of geological and ecological publications, which is not yet matched by archaeological publications.[24] This opportunity poses archaeologists with the challenge to incorporate the dynamics of physical landscapes in their reconstructions of cultural landscapes. For instance, if depositional practices did engage with (super)natural flows of substances (see above), the intersections of changes in these flows with changes in notions of place (or network changes) are open to enquiry.

Relational notions of place and period-specific archaeological records

To sum up, the uncertainties and controversies concerning cultural landscapes mainly derive from generalised notions of place, including assumptions about relationships between places. A lack of concern with 'actual' places makes it difficult (if not impossible) to conceptualise cultural landscapes as networks of places. From a network perspective, generalised notions of place introduce relational dimensions that are 'imagined' and cannot be subjected to spatial analysis. Consequently, the methodological problem arises that historical trajectories cannot be phrased in terms of cultural landscapes. Unless a cultural landscape is conceptualised as a network of places, place histories (or biographical approaches to places) cannot be upgraded to a so-called "cultural biography of landscape" (e.g. Roymans 1995; Roymans & Gerritsen 2002; Roymans et al. 2009). The selective focus on particular types of place in cultural landscape approaches is at odds with the notion that social life is 'multi-sited', whereas their (sub)regional scope introduces a reliance on unsubstantiated assumptions about (supra)regional contexts. The introduction of generalised notions of place results in a series of 'imagined' cultural landscapes (or synchronic constructs) that does not add up to a historical trajectory of changes in spatial relationships between places. Instead of adopting a selective and generalising approach, it should be appreciated that relational notions of place, underlying cultural landscapes, are historically specific and emergent from movements between (actual) places. Here I will argue that the structure of archaeological records, in this case the bias towards deposition (§2.1.2), can provide a methodological starting-point for a better grasp of relational notions of place, hence an understanding of cultural landscapes as networks of places.

Networks require movement, movement presupposes gaps and archaeologists need gaps to reconstruct networks. 'Gaps' are created by making assumptions about the relationships between places that spill over from generalised notions of place based on archaeological contexts as types of place (in the discrete sense of bounded entities). Whereas these 'gaps' are largely self-inflicted, a network approach that appreciates the notion that social life is 'multi-sited', should start with the 'gaps' that emerge from uneven spatial distributions. These are the 'gaps' that require movement between actual places (and thereby inform relational notions of places). In this respect, 'gaps' that result from the

[23] Even structural history approaches in archaeology, which are concerned with the interconnectedness of different rhythms of change in phenomena (Bintliff 1991a; Knapp 1992a), generally conceptualise the significance of geological and ecological phenomena in the long term, disregarding their shorter term fluctuations.

[24] In this unbalanced situation lies a risk of mutual reification of archaeological, ecological and geological periodisation. For instance, environmental reconstructions often quote archaeological periodisation in a broad sense (Neolithic, Copper, Bronze and Iron Ages) and uncritically. This means that, in their turn, archaeologists should not adopt environmental reconstructions uncritically.

overall bias towards deposition in archaeological records (§2.1.2) can refer to a past reality (i.e. 'evidence of absence'), not necessarily to a lack of research (i.e. 'absence of evidence'). This tends to be overlooked in so-called 'time perspectivism' (cf. Bailey 2007), which is a critical approach to the structure (or structural properties) of archaeological records, including the interpretations it can afford (or not). Since 'time perspectivists' are often dealing with early prehistory (i.e. Palaeolithic and Mesolithic) and/or hunter-gatherer archaeology (e.g. Stern 1993; De Lange 1999; Murray 1999a; De Lange 2001; Lucas 2005, chapter 2; Holdaway & Wandsnider 2006; Murray 2006; Bailey 2007; Lucas 2007, 2010, 2012), they do not always address the structural properties that are specific to Bronze Age archaeological records. Nonetheless, issues that are akin to 'time perspectivism' have been addressed in later prehistoric, protohistoric, classical and historical archaeologies (e.g. Barrett 1994, 2001; Olivier 1999; Foxhall 2000; Olivier 2001).[25] This underscores the relevance of 'period specific' concerns in archaeological records, in reply to Lucas' call (2010) to apply 'time perspectivism' beyond the Palaeolithic.

Recognising that each specialised field (or archaeological subdiscipline) is constituted by its own particular modalities of analysis and interpretation, highlights that – in addition to general considerations – 'time perspectivism' should entail more specific considerations about the structural properties of archaeological evidence. To put it differently, distinctive forms of place-making result in distinctive structural properties of archaeological records, hence require a distinctive form of time perspectivism. What sets 'later prehistoric' records apart from 'early prehistoric' records, for instance, is the more generalised occurrence of artificial, man-made structures or features (e.g. houses, graves, pits) in the former, whereas these are largely absent from the latter. Admittedly, this is a generalisation, but it cannot be denied that deposition in later prehistoric features results in archaeological evidence with particular structural properties. The overrepresentation of so-called 'structured deposits' results in archaeological records that are punctuated with instances of relatively detailed evidence (§2.1.2). Punctuatedness as a structural property of Bronze Age archaeological records does therefore not only derive from their incompleteness or fragmentary character (in a general sense), but also from particular forms of place-making.[26] In other words, the bias towards deposition in the case of Bronze Age archaeological records is intimately related to particular forms of place-making as part of the 'multi-sited' character of social life. Depositional practices create punctuatedness (and gaps) in archaeological records, thereby underscoring the notion that movement is required between places (in a culturally and historically specific sense).

This line of reasoning seems circular and reductionist in the sense that place and deposition, site and site formation are regarded as interchangeable. To be more precise, it engages with the tautology that is the archaeological condition. What you find is what you have to base your argument on, while being aware that it's only a fraction of everything there is to know.[27] I would argue that it is the tautological character of the discipline that is lamented in concerns with the fragmentary character of archaeological records (as a generic form of archaeological source criticism; cf. Lucas 2012 for an in-depth analysis and a genealogy of notions of archaeological record). Working with the bias towards deposition, however, time perspectivism can be adapted to approach the structure of archaeological records in a 'period specific' or 'culturally specific' way.[28] Precisely because Bronze Age archaeological records are punctuated and skewed towards deposition and place-making (see above), they can serve as a starting-point for exploring cultural landscapes as networks of places. Any archaeological site, in the conventional sense, can be regarded as a place, hence a node in a network (if not several networks at the same time). The task of archaeologists is to find out which networks, by trial and error, starting from the polythetic dimensions of depositional practices (§2.1.2). 'Period' or 'culturally specific' time perspectivism recognises the intersection of structural properties of archaeological records and forms of place-making. It calls for a form of source criticism that goes beyond checking for presences and absences (i.e. what is archaeologically visible or not), towards relational source criticism.

[25] In addition, studies of settlement abandonment processes show similar concerns with formation processes and might be considered as a subfield (e.g. Cameron & Tomka 1993; Inomata & Webb 2003).
[26] Cf. Joy 2009 on the notion of punctuatedness from the perspective of object biographies (§2.1.2).
[27] Cf. Garrow & Yarrow 2010a, Yarrow 2010 and other contributions to Garrow & Yarrow 2010 for a comparison between archaeological and ethnographic records.
[28] Cf. Hill 1995 on the formation of a specific, Iron Age archaeological record.

Relational source criticism

Similar to polythetic classification as a relational methodology for the study of place-making (§2.1.2), source criticism can (and should) be relational. To be more precise, polythetic classification as an object oriented approach that is explicitly aimed at defining notions of place in a relational manner, encourages intercontextual source criticism. This provides a relational starting-point for an assessment of those generalised notions of place that spill over into unsubstantiated one-to-one relationships between types of place. For instance, settlements and cemeteries are often regarded as interchangeable by default. Following a one-to-one relationship, the presence of a cemetery is often presumed in the vicinity of a settlement that has been identified by excavation or survey (and vice versa). However, presuming a research bias (i.e. 'absence of evidence') denies the possibility of a cultural bias (i.e. 'evidence of absence'). The presumption of a one-to-one relationship could, therefore, wrongly fill a gap, if it refers to the latter, a cultural bias that spatially dissociates cemeteries from settlements. As always, presumptions or generalisations should be distrusted and not taken for granted. Consequently, relational source criticism that starts from a one-to-one-relationship, should include a comparison with other scenarios, however unlikely these may seem. To conclude this theoretical and methodological introduction to cultural landscapes and relational notions of place, I will present a few examples where relational source criticism is required, extending current issues in Bronze Age studies to the case study (Chapters 3-9). It is an attempt at exposing generalisations and assumptions about types of place, as well as interrelationships between places, that are (or were) common in Bronze Age studies, but have to be addressed as problematic in relational approaches to place-making and cultural landscapes.

Starting with funerary practices, a first example of relational source criticism concerns disarticulated human remains from 'non-funerary' contexts. So-called 'loose bones' from settlements and natural places have long been regarded as 'out of context', as 'intrusions' resulting from post-depositional, taphonomic processes (and explained away as 'disturbed burials'). Nowadays disarticulated human remains are often taken as a starting-point for scenarios of funerary practices in which primary and secondary treatment of the dead occurred distributed over a range of places and were not necessarily confined to a single place (e.g. Brück 2006a, 2006b, 2008). Although 'traditional' funerary contexts will have a higher archaeological visibility, a growing appreciation for 'loose bones' shows that they were not uncommon but a regular phenomenon in later prehistory. If human remains follow recurrent patterns of turning up 'out of context', then the bias towards deposition in archaeological records argues in favour of their contextual relevance and cultural significance. As part of this interpretive shift, it has become an increasingly common practice to radiocarbon date human remains. Discrepancies in absolute and relative dates can be used to substantiate scenarios such as the curation of 'ancestral' remains (before deposition) or secondary handling (after deposition), or the deposition of (later) human remains in prior, 'ancestral' places (e.g. Parker Pearson et al. 2005). The appreciation of a wider range of interpretive possibilities shows that (re)deposition of disarticulated human remains can be a distinctive form of place-making in itself (Chapter 5), one that can tell as much about notions of personhood as about place-based notions of ancestorhood (see above). In general, it should be appreciated that the peculiar forms of creating relationships between places in the movement of selected human remains, also apply to so-called 'normal' forms of burial. Even a one-to-one relationship between a settlement and a cemetery in close proximity would have required movement between places.

Akin to 'loose bones' (see above), single finds or so-called 'isolated' finds of Bronze Age metalwork have long been interpreted simply as lost items or as grave goods dispersed from destroyed contexts of primary burial, rather than resulting from acts of place-making in themselves. A growing body of research in Europe has demonstrated that it was not uncommon for Bronze Age metalwork to end up as 'isolated' finds, dissociated from other classes of objects and following patterns of association with particular categories of natural places (e.g. Bradley 1990; Fontijn 2001/2002, 2007; Harding 2007; Fontijn 2008a; Ballmer 2010; Yates & Bradley 2010a, 2010b). These studies highlight that single finds of metalwork can be linked to 'rule-governed' place-making in cultural landscapes, including patterns of selective deposition (§2.1.2). Given the tendency of 'earlier' Bronze Age metalwork to occur dissociated from other classes of objects, it ends up constituting a separate group in polythetic classification of site assemblages, but a polythetically defined type of place nonetheless. Moreover, polythetic classification is invaluable for diachronic comparison with 'later' Bronze Age metalwork, thus pinpointing changes in depositional contexts (e.g. Fontijn 2001/2002; Van Rossenberg 2003). In the wider context of European Bronze Age studies, it is problematic that in some overviews and syntheses of the Italian Bronze Age 'isolated' finds of metalwork (so-called "oggetti isolati") are

upgraded to burials or settlements without mentioning that this interpretive strategy is adopted. The presumption that these types of place are interchangeable by default, does not only inflate settlement patterns, but also distorts a relational understanding of notions of place underlying cultural landscapes, in this case selective deposition of metalwork. Equally problematic is the exclusion of 'isolated' finds (or single object depositions), unlike hoards of metalwork (or multiple object depositions), from syntheses of the 'earlier' Bronze Age in Central Italy (Cocchi Genick 1998, 2002). It gives the wrong impression that hoards are more informative about place-making and cultural landscapes than single finds of metalwork (Chapter 4).

Another example of relational source criticism concerns the growing body of research that focuses on deposition in the context of later prehistoric settlements in Europe (cf. Bradley 2003, 2005). Acts of deposition in the context of settlements are often interpreted in terms of marking (social) events in the intersecting lives of inhabitants, houses and settlements (e.g. Brück 1999a; Gerritsen 1999, 2008). These studies work with the bias towards deposition in archaeological records, especially the prominence of features in 'later prehistoric' records (see above). Acts of deposition are interpreted as forms of place-making related to lifecourse (or life-changing) and other social events. This interpretive strategy can benefit from the particular structural properties of Bronze Age archaeological records, as long as it refrains from adopting a selective focus on acts of structured deposition (§2.1.2). In general, acts of deposition in settlements will have involved the same classes of objects and substances that are also found in other depositional contexts, for instance, disarticulated human remains (see above). The 'multi-sited' distribution of classes of objects and substances over a range of depositional contexts asks for an intercontextual approach. A non-selective approach to polythetic classification of site assemblages has the potential to highlight similarities and differences between assemblages related to different types of place (§2.1.2). In turn, the resulting polythetic groups can be used to explore intersections and connections between acts of deposition in different places (hence relational notions of place). Its potential to refine analytical categories will be sought here in a comparative analysis of Early Bronze Age assemblages from caves (Chapter 6) and open-air sites (Chapter 7). The term 'open-air site' is preferred in this thesis over settlements, because the case study will show that not every open-air site can be interpreted indiscriminately as a settlement.[29]

Generalised distinctions in terms of site function underscore the tendency to set caves apart as a distinctive type of place in European Bronze Age studies (e.g. Harding 2004), even if the presumption is that caves were integral to settlement patterns (cf. Bergsvik & Skeates 2012), such as in Italian Bronze Age studies. I will initially follow this broad distinction in a polythetic classification to distinguish between groups of site assemblages for each type of place, notably caves and open-air sites. On the basis of polythetic differentiation I will argue that one group of cave assemblages is different from another and that these groups can be linked to distinctive notions of place (Chapter 6). Then, in the case of open-air sites, a more general problem has to be addressed, i.e. the interpretation of surface assemblages. These have implicitly (or explicitly) been approached in a polythetic sense, distinguishing between types of place (e.g. settlements, cemeteries or cult places), especially in the study of later (Roman and medieval) periods in Central Italy. By contrast, there is a tendency to interpret Bronze Age assemblages identified in surface surveys generically and invariably as settlements. This common practice takes the difficulties of interpreting excavated and surface assemblages at face value, for instance problems related to differences in sample size. Polythetic classification can be adopted to make a comparison between (smaller) surface assemblages and (larger) excavated assemblages, as a 'special' case of its methodological advantage to circumvent 'gaps' (§2.1.2). Disregarding the absence, but based on the presence of particular classes of object (and substances), particular surface assemblages can be set apart and interpreted in terms that are more specific than 'settlement' in a generic sense (Chapter 7).

All of these examples of relational source criticism are relevant to the case study and show the benefits of adopting a polythetic approach that cross-cuts conventional classifications in terms of generalised notions (or types) of place. They substantiate that place-making is relational and that this can be recognised archaeologically, if a non-selective approach is adopted and one type of place is not favoured over another. Polythetic overlaps (or similarities between polythetic groups) across analytical

[29] Here it has to be stressed that general distinctions in archaeological terminology incorporate assumptions about relationships between sites and refer to ingrained notions of place. For instance, the use of the term 'open-air sites' ("sito/siti all'aperto", as opposed to caves) in Italian Bronze Age studies is a consequence of the initial focus on caves as the presumably predominant form of settlement. Similar to English, settlement ("insediamento") in Italian has both a generic and a specific connotation and is used for site distributions in general, as well as indiscriminately for both caves and open-air sites.

categories (i.e. types of place) can only be substantiated in the context of cultural landscapes as a whole. Following the structure of the thesis (§1.4), the full polythetic classification of Early Bronze Age assemblages will come together in the data-rich synthesis (Chapter 8). This appreciates that relational notions of place follow from the notion that social life was 'multi-sited', distributed over a range of places and across cultural landscapes (as networks of places). At the same time, it cannot be overlooked that reconstructions of relational notions of place in archaeology depend on (and will probably always remain biased towards) depositional practices. This understanding comes with the realisation, however, that forms of place-making intersect with the structure of archaeological records. This intersection creates culturally or period-specific properties in archaeological records. Working with the bias towards deposition, data-rich archaeological synthesis can aim for polythetically defined notions of place that are intimately related to the sort of depositional contexts that places formed, as part of networks (of places) that constituted Bronze Age cultural landscapes. Overall, a detailed, data-rich understanding of patterns in terms of the presence or absence of particular classes of objects and substances can be used as a starting-point for reconstructing relational notions of place in cultural landscapes (in short, networks of places).

2.2 Social networks: uncertainties and controversies

The recurrent emphasis put on 'actual', spatial distributions of places, rather than assumptions about their interrelationships based on generalised notions of place (§2.1), ensures that cultural landscapes (as networks of places) can be made commensurable with social networks. In this respect, data-rich archaeological synthesis reinvigorates the strength of the discipline in spatial analysis. It restores to archaeological synthesis an explicitly spatial dimension that tends to get lost in so-called interpretive archaeologies. This particular problem does not only apply to the 'imagined' dimensions of cultural landscapes, since generalised notions of place are implicit in applications of network analysis in archaeology, too. Although connectivity between places as nodes in social networks is invariably spatial, archaeological case studies in network analysis tend to suffer from the same selective focus on particular places as landscape studies (§2.1.1). In network analysis the focus is not so much on individual places (as it is on networks of places), but the definition of notions of place still favours peculiar places, based on their particular position and network characteristics. In particular, archaeological case studies in network analysis tend to focus on identifying 'central' nodes (or 'hubs') from presumably less significant places. This way of making distinctions carries as many assumptions about relationships between places (or nodes in networks), as do types of place in cultural landscapes (§2.1.2). Again, the main problem is that the polythetic specifics of the respective (site) assemblages are generally not taken into consideration from the start, but only reintroduced as unsubstantiated assumptions.

The methodological issue of generalised notions of place will be illustrated by a discussion of current approaches to connectivity in Mediterranean Bronze Age studies, in particular, and archaeology, in general (§2.2.1). Subsequently, the notion of typochronological networks (or typo-networks) is introduced, as a form (or derivative) of network analysis adopted in the case study (Chapters 3-9). The visualisation of 'ceramic connectivity' (in terms of vessel types shared between assemblages) is a data-rich 'proxy' for networks on regional to supra-regional scales. It can make explicit notions of relationality and connectivity that have remained implicit in the use of typochronology in archaeological synthesis. At the same time, it provides a starting-point for addressing the issue of the fuzziness of chronological entities (i.e. periods, phases and subphases) in periodisation, as well as spatial entities (i.e. cultural groups and territories), including the conceptualisation of cultural and social boundaries (§2.2.2). Finally, issues of scale will be addressed by changing perspective from regional to supra-regional connectivity to (sub)regional networks and network changes. Whereas archaeological case-studies in network analysis tend to be concerned with connectivity on supra-regional to regional scales, the intersection of cultural landscapes (§2.1) and social networks should be the principal focus on (sub)regional scales. In particular, the 'multi-sited' character of social life will in its intersection with places in cultural landscapes be linked to the reproduction of social formations (in short, social reproduction) (§2.2.3). This will ensure the commensurability of cultural landscapes and social networks, a prerequisite for data-rich archaeological synthesis of historical trajectories.

2.2.1 Connectivity and social network analysis

The study of social networks has been a vibrant field in social sciences, mainly in the form of the graph-based mathematical approaches of social network analysis (SNA) (cf. Scott 2000; Pattison & Wasserman 2004; Carrington et al. 2005). Graph-based network analysis has only relatively recently become more popular in archaeology (e.g. Collar 2007; Sindbæk 2007a, 2007b; Isaksen 2008; Knappett et al. 2008; Mizoguchi 2009; Brughmans 2010; Bright 2011; Knappett 2011; Knappett et al. 2011). It is a significant strand in the increasing convergence of processual and postprocessual approaches (§2.1.1), in its explicit aim at reinvigorating spatial analysis on regional to supra-regional scales in archaeological synthesis. Nonetheless, a serious problem in archaeological applications of social network analysis is their reductive character. The selection of particular types of place as units of analysis, predominantly (larger) settlements (i.e. 'central places'), means that reconstructions of social networks tend to be based on a select group of places from the start (e.g. Sindbæk 2007a; Knappett et al. 2008, 2011). The problem gets worse when a micro-region (or region) as a whole is used as a unit of analysis (or dot on the map) and consequently misrepresented as a single node in networks (rather than a network of places in itself) (e.g. Mizoguchi 2009). Although generalisation is inevitable in archaeological synthesis, a selective focus on selected groups of sites (or larger areas) as units of analysis in the initial analysis can only be to the detriment of understanding networks of places in full. In this respect, the generally fragmentary character of the archaeological record should not be overlooked (§2.1.2; §2.1.3). The bodies of evidence that archaeologists have to work with – by default – result in the reconstruction of incomplete networks. Reconstructed networks are not only 'truncated' on their margins, delimited by the geographical scope of analysis, but also on the inside due to the fragmentary character of archaeological records. The self-inflicted research bias of a selective approach reinforces the truncation of networks on the inside, rather than minimising it by taking as many sites and classes of objects and substances as possible into account (e.g. Sindbæk 2007b).

To put it differently, archaeologists can methodologically not afford to be selective at the outset of a network analysis, as argued for cultural landscape approaches (§2.1). A selective focus creates a generalising tendency in network analysis that is also apparent in the growing body of work on Mediterranean connectivity and networks. Two books in particular have prompted the increase in interest in Mediterranean connectivity over the last decade. Horden & Purcell's "The corrupting sea" (2000) is a source of inspiration for ancient historians and classical archaeologists and Broodbank's "An island archaeology of the early Cyclades" (2000) for prehistorians. Recent approaches to networks in the Mediterranean almost invariably focus on seaborne connectivity over long distances, with an instrumental role for islands (e.g. Harris 2005; Knapp 2008; Forenbaher 2009; Malkin et al. 2009; Van Dommelen & Knapp 2010). The preference for islands as self-evident entities (in the bounded sense of a container metaphor, sensu Lakoff & Johnson 1980) and as a short-cut to understanding Mediterranean connectivity in terms of 'exchange networks' and 'long distance interaction' (in a generic sense) carries the risk of merely stating the obvious. As seaborne mobility can be presumed for islands, supra-regional connectivity tends to become self-explanatory, too. This is especially the case if network analysis starts from a selective focus on those places where 'influences' from the outside can be established,[30] to the detriment of studying networks on (sub)regional scales in more detail.

The focus on Mediterranean wide connectivity creates a tension with the explicit aim of those case studies to contextualise the 'local' in the 'global'. To a large extent, the adoption of concepts such as mobility, materiality and identity (cf. Van Dommelen & Knapp 2010) as an expression of 'local' concerns remains firmly set in the context (or straitjacket) of 'global' connectivity and supra-regional interaction (cf. Naerebout 2006/2007; Hodos 2010), similar to the adoption of world-systems terminology (e.g. Parkinson & Galaty 2009). Although world-systems approaches have become increasingly sophisticated (cf. Kardulias & Hall 2008 for a recent overview), this is generally not the case in European and Mediterranean Bronze Age studies. Following from the generalising tendency in approaches to supra-regional connectivity and a poor understanding of (sub)regional networks, case studies often incorporate (parts of) the Mediterranean as a single unit of analysis in an even wider geographical context (e.g. Sherratt 1993, 1994). More often than not, in world-systems approaches and network analysis alike, it is the language game that sets 'local' apart from 'non-local' all over again, as discussed for object biographies and the 'black box' notion of exchange in Bronze Age studies (§2.1.2). The presence of so-called 'exotic' objects and substances (and, ideas and people, to complete the list of

[30] The term 'influence' can be regarded as synonymous with 'external' in the 'internal : external' dichotomy (cf. Van Rossenberg 1999).

usual suspects in the archaeological project of mobility and exchange) cannot be regarded as self-explanatory in determining the status of a place as a central node or a 'hub' in social networks. The centrality of particular places in regional to supra-regional networks cannot be disconnected from their position in (sub)regional networks.

Archaeological synthesis of connectivity over long distances starts with provenance studies and sourcing (or mapping) of flows of objects and substances, but does not end at their destination. In this respect, Knapp & Van Dommelen (2010) adopt the concept of 'object diasporas' in archaeology from sociology and museum studies (e.g. Basu & Coleman 2008; Basu 2011), but this can only be a first step, acknowledging that the distribution of objects and substances flows through networks. Similarly, mobility on the part of humans established through science-based methods (e.g. Price et al. 1998, 2001; Bentley et al. 2002; Budd et al. 2004) should be contextualised in data-rich syntheses from a network perspective, in order to avoid too simplistic reconstructions of mobility (cf. Bickle & Hofmann 2007). In the case of supra-regional, Mediterranean wide connectivity, island-based networks should be complemented by land-based networks. The latter are usually invoked in a generic sense as 'local context', which is seldom explored as a network of places in itself and thus remains a single dot on the map (or a bounded entity), juxtaposing unexplored 'local' with generalised 'global'. This issue is not resolved by making a distinction between between social interaction over shorter and longer distances (in a generic sense), the former often land-based and the latter seaborne in the context of the Mediterranean. Making such a distinction merely represents (sub)regional networks and supra-regional connectivity in terms of geographical scale and (potentially) denies land-based networks wider significance. Preserving the heuristic value of distance as a discriminant, the study of inter-regional or supra-regional connectivity should not be uprooted from local, micro-regional, sub-regional or regional networks.

In the end, supra-regional networks can be regarded as an epiphenomenon of an interrelated series of (sub)regional networks. Those nodes in networks where inter-regional or cross-cultural interaction took place, were situated at (and/or historically constituted by) the intersection of supra-regional and (sub)regional networks. Consequently, answering questions such as "What sort of a 'node' is constituted by a particular place?" and "What sort of a 'relationship' is constituted by places that are regarded as connected?" requires more than establishing the network characteristics of nodes (including their connections) from a mathematical, graph-based perspective. The study of social networks in archaeology is about actual places, not dots on a map, and 'connecting the dots' should be data-rich and informed by polythetically defined, relational notions of place (§2.1.2) as much as possible and from the start.

2.2.2 Reconstructing connectivity, regional differentiation and cultural boundaries

Typochronology is often taken for granted, as a basic framework in archaeological synthesis. It was suggested that implicit in relative dating is the notion that social life 'multi-sited' (§2.1.1). The presumption in typochronology is that places that share a particular type are contemporary, hence part of the same cultural landscape and/or network. In addition, it is common practice to regard differentiation between assemblages in terms of the presence and absence of types as an indication of spatial and cultural patterns, in terms of regional differentation and distinctions between cultural groups, respectively. Given the notion that (site) assemblages linked by typochronology can be regarded as (a proxy for) a network, including regional and cultural differentiation, a related question is how cultural and/or social boundaries can be conceptualised from a network perspective. This issue of boundaries does not only regional to supra-regional scales, but also (sub)regional scales, delimiting social and cultural formations on several levels. The multi-scalar character of 'boundary work' will be addressed before turning to the 'multi-sited' character of social life with a focus on (sub)regional networks (§2.2.3) and after discussing the inherent limitations of typochronology, as well as introducing 'typochronological networks' as a proxy for regional to supra-regional connectivity.

Typochronological fuzziness

Despite the proliferation of absolute dating, typochronology remains the principal means in archaeology to decide which sites should appear as dots on which distribution maps. Since it is generally impossible to subject surface finds to absolute dating and because there is a practical limit to the number of samples from excavations that can be submitted for dating, data-rich archaeological synthesis will always have to rely heavily on forms of relative dating. Still, it is necessary for archaeologists to remain suspicious of (and explicit about) the limitations of typochronology, for

instance by acknowledging the 'fuzziness' of chronological entities (i.e. periods, phases and subphases) in periodisation (cf. Lucas 2001, 2005). Limits between typochronological entities (in other words, 'transitions' from one period, phase or subphase to another) are seldom clear-cut. So-called 'battleship curves' that result from seriation of archaeological assemblages, underscore that a certain degree (sometimes a considerable degree) of overlap between chronological entities should be accounted for, akin to overlapping tiles to make a roof waterproof. Typochronological 'fuzziness' has serious consequences for the conceptualisation of historical trajectories (Chapter 9).

This has, for instance, been appreciated in the conceptualisation of trajectories of innovation (such as 'battleship curves' in seriation), comprising several stages, including the introduction, proliferation and demise of a particular object (or practice). Each stage in the trajectory cannot only be linked to a distinctive social context (and related interpretation), but should also be appreciated for its distinctive visibility in archaeological records, from one instance (i.e. introduction) to many instances (i.e. proliferation and/or peak) and back (i.e. demise) (cf. Fokkens 2008). At the same time, Bronze Age studies have increasingly shown that novelties tend to end up in deliberate acts of deposition and peculiar depositional contexts that have higher archaeological visibility and a higher chance at 'fossilisation', following from the bias towards deposition (§2.1.2; §2.1.3). Because of the structure of archaeological records, there is a risk in typochronology of misrepresenting the introduction of a new class of objects (or practice), by placing it (as a dot) on the same distribution map as the larger number of instances that make up the peak of its proliferation. Alternatively, the possibility that a first instance was actually situated in relative 'isolation' from the peak distribution (and should be placed on the distribution map for a previous phase or period), should also be explored. This does not only acknowledge and restore inevitable 'fuzziness' in typochronology, but it is also a necessary step in answering the question through which networks a novelty was introduced.

'Fuzziness' related to uncertainty about the specific context of a novelty, opens up the possibility of so-called 'time-transgressive' scenarios. A single object can be interpreted in the context of two distribution maps, as part of the initial and/or the peak distribution, related to consecutive phases differentiated on the basis of typochronology. In other words, the 'fuzziness' of entities in typochronology adds a rationale to diachronic comparison (apart from its aim at reconstructing historical trajectories). Diachronic comparison should therefore include an exploration of 'time-transgressive' scenarios, in order to get distribution maps (hence, networks of places) 'right', either substantiating that there's only one possibility or raising the interpretive problem of two (or more) possibilities. This is not to say, however, that the opening up of possibilities by taking more than one scenario into consideration is unlimited. The 'actual' spatial distributions of an object (or practice) and its (likely) sources are a constraint. One spatial dimension that – in ideal situations – constrains interpretations of the introduction of a novelty, is its spatial relationship with a source area or location of production, based on provenance studies of raw material and/or finished objects. In the case study I will substantiate the emergence of an Early Bronze Age centre of metalwork production related to a source area of copper in Tuscany as a trajectory that coincides with the increasing proliferation of metalwork with a particular compositional signature (Chapter 4). Such an ideal situation can in turn inform a reconstruction Early Bronze Age connectivity in Central Italy in general (Chapters 8 & 9).

In situations that are less ideal, the question through which (nodes in) networks a novelty was introduced, requires a non-selective approach, not limited to assemblages with the one particular class of objects (or practice) that has been singled out for interpretation. The paradox is that a data-rich approach that takes as many assemblages into consideration as possible at the same time, does not so much open up an unlimited range of possibilities in archaeological interpretation and synthesis. From a network perspective, adding further elements constrains the number of possibilities, as long as the focus remains on spatial distributions and relationships between places.

Typochronological networks (or typo-networks)

The appreciation that typochronological 'fuzziness' is an issue (see above) has serious consequences for archaeological synthesis in general. From a network perspective, overlap of chronological entities means that the question which places were nodes in which networks, is not self-evident. This issue will be acknowledged in the case study (Chapters 3-9), in adopting a data-rich approach to visualise and explore supra-regional connectivity in Central Italy as whole (§3.2; §9.2). In particular, relationships between sites that emerge from typochronologies of Early Bronze Age and Middle Bronze Age ceramics in Central Italy and the peninsula as a whole (Cocchi Genick 1995, 1998, 2001, 2002), will be 'spatialised'in this thesis as typochronological networks (or 'typo-networks). Spatial relationships

inherent in typological classification concern the implicit (or explicit) assumption that a) assemblages sharing vessel types were contemporary and part of the same network of places; and, b) those recurrently sharing vessel types belonged to the same cultural (or social) group. As a starting-point for the case study, these relationships between places in terms of shared vessel types (or 'ceramic connectivity') will be visualised by connecting the respective dots on the distribution map into a typo-network . A typo-network makes the basic presumption that typochronology is a form of archaeological synthesis and concerns relationships between places explicit, and can be used as a proxy for regional to supra-regional connectivity (§3.2; §7.2; Chapter 9). Ideally, this results in a visual representation of groups of well-connected sites that can be interpreted as social formations or cultural groups. This does not mean, however, that 'typo-networks' are self-evident and unproblematic, hence a proxy. A 'typo-network' turns typochronology (an archaeological construct) into networks, which do not necessarily bear a resemblance to a past network of places. Despite this limitation, several benefits argue in favour of using typo-networks as a proxy for regional and supra-regional connectivity.

- First, the approach is non-selective in the sense that by far the majority of (site) assemblages consist predominantly of (or include) ceramics. This means that typo-networks can be used as a data-rich starting-point for the reconstruction of 'actual' networks, rather than focusing on a select group of sites from the start.[31] For instance, an assemblage comprising a single vessel type can still be included in a typo-network. This does not deny, of course, that larger (often excavated) assemblages have a higher chance at showing connections than smaller (often surface) assemblages. On the other hand, larger surface assemblages have a higher chance at being linked into 'ceramic connectivity' than smaller excavated assemblages. In other words, typo-networks do incorporate research biases but, at the same time, offer the opportunity to circumvent these (or at least make them explicit), for instance making a connection between surface and excavated assemblages.
- Secondly, the presence of ceramics can cross-cut generalised notions of place, based on types of place such as settlements, burials and cult places (§2.1). Such polythetic dimensions in the distribution of ceramics across a range of places, hence relational notions of place, will show up in the visualisation of 'ceramic connectivity' in typo-networks (see below).
- Finally, typo-networks can be used to put the chronological entities that are based on typological classification, to the test. Spatialising typochronological relationships can reveal 'gaps' (or regional differentiation) in the spatial distribution of assemblages attributed to a particular phase and their connections (in terms of shared vessel types). For instance, a spatially circumscribed, regionally specific distribution and 'closed' (sub)regional network means that a particular (sub)phase is not chronologically valid on a regional, let alone supra-regional scale. This particular sort of 'gap' can be linked to the notion of 'fuzziness' (see above) and resolved by adopting a 'time-transgressive' scenario that allows for a high degree of overlap (if not full overlap, i.e. contemporaneity) between (sub)phases, in other words, regional differentiation in typochronological sequences (Chapter 9).

A diachronic approach to typo-networks can be adopted to explore the issue of typochronological 'fuzziness' (see above) in a data-rich way on a regional to supra-regional scale. Diachronic comparison has the potential to explore to what extent a 'gap' can be regarded as a past reality (if it persists in several phases). Alternatively, it can reveal that a 'gap' in one typo-network results from 'fuzziness' and can be filled with 'ceramic connectivity' based on vessel types attributed to a typochronologically earlier or later (sub)phase (i.e. other typo-networks). To reiterate, resolving the issue of 'fuzziness' is key in network analysis, in order to establish which places were contemporary (or not) and should appear on the same distribution map (or not). If this issue is resolved, typo-networks can be used as a proxy for connectivity on regional and supra-regional scales (§3.2; §7.2; Chapter 9). Spatial patterns in connections between sites that consistently link particular regions (or micro-regions), will result in one main axis (or several senses) of directionality in typo-networks. This general impression of directionality in connectivity can be used as a data-rich starting-point for exploring the spatial dimensions of innovations from a network perspective. Ceramics-based typo-networks are particularly useful to make a comparison with the directions of regional and supra-regional flows of non-ceramic classes of objects in networks, based on the spatial distributions of the latter. For instance, typo-

[31] Cf. Brughmans 2010 for a data-rich, graph-based approach to Roman 'ceramic connectivity' in the eastern Mediterranean.

networks will be used as a constraint in the reconstruction of networks through which Early Bronze Age metalwork would have flowed. Given its generally dissociative pattern from ceramics at deposition, there is unclarity about (or a 'time-transgressive' potential in) the position of metalwork within networks of (other) places. Diachronic comparison of typo-networks (based on ceramics) with the spatial distributions of metalwork (Chapter 4) is a means to explore current scenarios for the synchronisation of the respective 'floating' relative chronologies, rather than taking the chronological validity of the respective entities at face value.

From polythetic classification and typo-networks to small-worlds

Another data-rich capacity of ceramics typochronology is its potential to reveal polythetic groups based on vessel types that are exclusive to particular types of place. Cocchi Genick's refinements of typochronologies for Early to Middle Bronze Age ceramics in Central Italy (1998, 2001, 2002) have explored this methodologically relational potential. This will be used as the starting-point for the visualisation of 'typo-networks' in the case study (see above). Moreover, she has recognised polythetic groups based on the contextual circumscription of particular vessel types related to 'subtypes' of place, in particular caves and crater lakes. Based on the presence of vessel types exclusively shared between cave and lake-side assemblages, types of places that are normally treated separately can be connected into a single polythetic group. This underscores the potential of polythetic classification to cross-cut generalised notions of place that follow from assumptions about types of place (§2.1.2). The joint interpretation of this polythetic group, both caves and crater lakes, as cult places argues against the interpretation of crater lake sites as settlements (Cocchi Genick 1998, 2001, 2002). This will be further substantiated in the case study based on a polythetic classification of the full range of constituent elements of cave and lake-side assemblages (i.e. not limited to ceramics), together with such details for all open-air assemblages available (Chapters 6-8). By definition, those connections that are based on ceramics will already show up in the discussion of typo-networks (§3.2). The main problem with Cocchi Genick's argument (1998, 2002), however, is that she does not explore the spatial dimensions of these polythetically defined, relational notions of place.

As so many archaeologists, Cocchi Genick (1998, 2002) stops at delimiting cultural groups in a traditional, bounded sense, rather than adopting a network perspective on the definition of groups (§3.2; see below). She recognises that ceramic connections exclusive to cave and lake-side assemblages create a supra-regional network of cult places in the 'earlier' Bronze Age of Central Italy, but this is phrased in terms of exchange of ritual practices between cult places themselves. 'Earlier' Bronze Age cult places are not contextualised in full networks of places, including 'normal' open-air assemblages. Although it crosses the analytical boundary between caves and open-air sites (see above), in this case a supra-regional network of cult places is not a 'flat' network (sensu Latour 2005). Cult places are severed from networks as a whole, thereby undoing a relational notion of place and reintroducing a generalised type of place. Out of the context of networks as a whole, the 'real costs' involved in moving to and from cult places are not taken into account, as argued for the 'black box' notion of exchange networks (§2.1.2). In a similar vein, 'typo-networks' in themselves are not 'flat' networks without further spatial analysis and can only serve as a proxy for regional to supra-regional connectivity (see above). Taken together, however, a typo-network that incorporates a supra-regional network of cult places, polythetically defined by 'ceramic connections', can give insight into general network characteristics. The question is whether cult places making up a supra-regional network served as supra-regional meeting-places, to and from which people moved from several directions (and other types of place).

In order to arrive at such a 'flat' understanding networks that appreciates 'actual' movements between places, a polythetic definition of relational notions of place should include spatial analysis. In this case the question is which position a cult place occupied with respect to settlement patterns and other types of place (in networks as a whole). Does a polythetically defined notion of place equal particular network characteristics in the overall context of site distributions (i.e. with respect to other places)? The extent to which polythetic groups of places equal distinctive nodes in networks, cannot be based on assumptions about relationships between places. One scenario that has to be explored is to what extent they constituted 'central' nodes (or 'hubs') linking two (or more) so-called 'small-worlds' in social network analysis (cf. Pattison & Wasserman 2004; Collar 2007; Sindbæk 2007b; Brughmans 2010). The 'small-world' phenomenon refers to a close-knit group of sites in which one or a few tend to constitute 'central' nodes, channeling links from one to other 'small-worlds'. This phenomenon is particularly relevant in later prehistoric contexts because of the tendency towards clustering in

settlement patterns. If 'small-worlds' are pertinent to the 'globalised' Roman world (cf. Collar 2007; Brughmans 2010), they are arguably even more relevant in presumably less densely populated prehistoric worlds.

Clusters of Bronze Age settlements on (sub)regional scales can be regarded as 'small-worlds' almost by definition. The punctuated pattern resulting from 'gaps' in the overall spatial distribution of settlements requires movement in regional to supra-regional social interaction. If a clustered settlement pattern can be established, it is likely that 'central' nodes in (or inbetween) 'small-worlds' have to be interpreted as meeting-places. As such, the 'small-world' phenomenon is indicative of a network with a particular structure and characteristics that requires further exploration, for instance in answering the question through which places innovations were introduced into (sub)regional networks (see above). Moreover, 'small-worlds' constitute a dynamic, highly adaptive network structure, in the sense that adding a 'central' node (i.e. establishing a settlement or a cult place and/or meeting-place) in an intermediate position between existing 'small-worlds' has the potential to 'instantly' change the structure in regional to supra-regional connectivity. These network dynamics can be revealed by diachronic comparison of typo-networks (see above), in combination with a data-rich, polythetic approach to cultural landscapes as networks of places (§2.1) that includes spatial analysis on one or several (sub)regional to supra-regional scales.

Regional differentation and boundary work

Changes in the location of cultural boundaries can be regarded as an indication of network dynamics, particularly in relation to regionalisation. The current state of Italian Bronze Age studies shows that the geographical scope of the case study is appropriate to address the issue of cultural boundaries and regional differentiation. Using the cultural spheres (in Italian: 'facies'[32]) that have been recognised so far in the peninsula as a starting-point, the main boundaries between larger cultural entities in several phases of the Bronze Age are situated in Central Italy, more precisely in Abruzzo and Lazio (cf. Cocchi Genick 1995, 1998, 2002; Guidi et al. 2002). Selecting these particular regions as the geographical scope of the case study (§1.3.1). therefore provides the opportunity to address the issue of cultural boundaries and changes in their location in the synthesis of Bronze Age networks and trajectories. Two related issues are at stake, in particular, the conceptualisation of 'cultural groups' (or spheres) and 'cultural boundaries' from a network perspective. The problematic character of boundedness in the conceptualisation of 'cultural groups' (or similar spatio-temporal entities) was already addressed in the context of polythetic classification, object biographies and the 'black-box' notion of exchange (§2.1.2). In particular, a polythetic notion of culture based on overlapping distributions of types and/or classes of objects (or practices) has the potential to restore a sense of 'fuzziness' in the notion of boundaries.

From a network perspective, however, the problem of 'bounded' cultural (or social) entities (and, to a lesser extent, polythetically defined cultural groups, too) is that it leaves the nature of their boundaries implicit (and undertheorised). The spatial dimensions of regional differentation and cultural groups are often taken for granted in archaeological synthesis, thereby implicitly (or explicitly) regarding boundaries as self-evident (or given). Once again, Cocchi Genick's typochronology of earlier Bronze Age ceramics in Central Italy (1998, 2001, 2002) can serve as an example because of its polythetic character. She has reconstructed a number of cultural groups within a larger cultural sphere on the basis of permutations of the presence (or absence) of vessel types (§3.2; Chapter 9). Despite the polythetic dimensions of her typological classification, she takes the reconstructed cultural boundaries as a given (in a bounded sense) in the subsequent synthesis. In adopting these cultural groups as self-evident units of analysis, potentially distinctive spatial distributions of polythetically defined (types of) places that can reveal network characteristics (see above), are overlooked. Cocchi Genick's 'earlier' Bronze Age cultural groups and cultural boundaries (1998, 2001, 2002) are therefore still generalised to such an extent that, although used as units of analysis, they are not necessarily spatial entities that make sense from a network perspective.

The 'fuzziness' introduced by overlapping spatial distributions in a polythetic notion of culture (§2.1.2) underscores that cultural boundaries are not clear-cut in a conceptual sense, but additional spatial analysis is required to explore 'actual' distributions of classes of objects (or practices). There lies a risk, for instance, in placing emphasis on the 'fuzziness' created by overlapping

[32] 'Facies' are not different from the entities arising from traditional notions of culture, with all their implications of boundedness that may run counter to relational notions of networks (cf. Jones 2007, chapter 4). For a 'local', Italian critique of the concept, cf. Cocchi Genick 2008 on Copper Age 'facies'.

distributions. It may hide structure in 'fuzziness', such as recurrent patterns that – within overlap – a number of distributions can share the same boundary (e.g. Müller 2006). Overlap that is spatially circumscribed to a particular micro-region, is another form of structure in 'fuzziness'. This could indicate the location of a border zone (or 'frontier zone') where social interaction took place, with or without the presence of a 'border' (or 'frontier') community. In general, a network perspective shifts the focus in the interpretation of boundaries from division to interaction, to what in the social sciences has been termed 'boundary work' (cf. Lamont 2004). Sociological approaches to boundary work are not so much concerned with the spatial dimensions as with the practical dimensions of the demarcation of (sub)groups in contemporary society (e.g. Gieryn 1983; Cohen 1985; Edgeworth 2010; Espirito Santo 2010). In the case study I will adopt the notion of 'boundary work' to incorporate place-making in the conceptualisation of boundaries. The spatial sense of 'boundary work', that a boundary is not given but emerges from practices, will introduce notions of place (and nodes) to boundaries and make them compatible with a network perspective.

Networks and boundaries

In the study of boundaries, frontiers and border zones in archaeology (cf. Burmeister & Müller-Scheessel 2006; Naum 2010; Sapwell & Spry-Marqués 2010; Mullin 2011) 'fuzziness' has been translated into notions (sometimes tropes) such as 'permeability' and 'fluidity'. The notion of 'permeability' recognises that many but not all flows of objects, substances, people, practices and ideas stop at a reconstructed boundary. In addition, the notion of 'fluidity' acknowledges the possibility that boundaries are subject to periodic (or diachronic) changes in location. From a network perspective, however, there is a serious problem with these notions. The paradox is that, despite their explicit aim to avoid it, the notions of 'permeability' and 'fluidity' actually start from (and reinforce) a 'linear' conceptualisation of boundaries. They do therefore not address the issue that lies at heart of the methodological issue of boundedness of spatial entities. Alternatively, cultural boundaries can be conceptualised as an emergent phenonemon, as a characteristic of connectivity in the spatial terms of networks. Boundaries emerge from a majority of flows of objects, substances, etc., that stopped at (or did not even reach) a certain point in networks, as opposed to a limited number of flows that did not stop there. From a network perspective, flows of objects, substances, etc., do not stretch in a void from one bounded entity to another (and back), but are channeled through particular places. This is what creates fuzzy boundaries in a polythetic sense. To put it differently, a boundary is an epiphenomenon of places situated at (or constitutive of) an intersection of open-ended networks, where exchange and other forms of interaction take place (sometimes literally).

Boundaries are a form of place-making, at nodes that constitute intersections between (sub)regional networks, social formations, if not 'small-worlds' (see above). By consequence, a boundary is not a linear entity (or a dividing line), but a series of nodes or meeting-places (that make up a nodal area at the most), occupying a peculiar position in networks. A 'nodal' approach underscores that boundaries are not given, but an emergent phenomenon from connectivity. To underscore that boundaries can be regarded as a particular form of place-making, I will recurrently use the term 'boundary work' in the case study (Chapters 3-9), thereby adding a spatial dimension to the concept borrowed from the social sciences (see above). Here the discussion of liminality in relation to place-making should be recalled (§2.1.3). In particular, there is tendency in European Bronze Age studies to interpret some selective, dissociative patterns in the deposition of metalwork in terms of marking (out) 'liminal' or 'marginal' places or areas. From a network perspective, deposition does not mark out a place (or area) as a border zone. Rather, it is 'boundary work', a form of place-making on the margins of one (sub)regional network, but at the same time inbetween two or more (sub)regional networks.

A similarly double connotation can be discerned in natural features that are commonly associated with physical boundaries, such as major rivers and mountain ranges. On the one hand, it cannot be denied that these features pose a serious challenge for later prehistoric travellers and are 'good to think with' as a boundary. This provides a condition of possibility for the intersection of these features with cultural and social boundaries. On the other hand, flows of objects, people, etc. did not stop at these 'natural' boundaries and would also have followed major rivers to their source areas into (and across) mountain ranges. In this respect, rivers and mountain ranges can convey a double sense of directionality, at the same time a boundary and an axis of connectivity. This underscores that these features are as much a constraint as they provide opportunities for travel. Which routes were taken, however, did also depend on 'actual' settlement patterns. Following from presumably lower population densities in later prehistory, larger 'gaps' in settlement patterns had to be dealt with, too, in

connectivity. For this reason, it seems likely that only a limited number, if not a single axis constituted the principal one for cross-APENNINE connectivity in the cross-section of the Italian peninsula under study (§1.3.1; Figure 1.3) at a given time in the 'earlier' Bronze Age (Chapters 3-9). The prominence of one principal axis does not deny the possibility that cross-APENNINE connectivity between Abruzzo and Lazio was a more widespread, distributed phenomenon, following more than one route. Diachronic comparison of typo-networks can provide a starting-point for exploring (changes in) directionality in connectivity (see above).

Ceramics-based typo-networks also offer the opportunity to make a preliminary assessment of network dynamics, including boundaries between cultural groups (see above). These proxies will show that 'ceramic connectivity' cross-cuts the boundaries of reconstructed groups, rather delimiting them (§3.2; §9.2). This is in line with a network perspective that does not only expect 'fuzzy' boundaries to emerge from connectivity (see above), but also looks for a proxy for the channeling of flows through places. To reiterate, typo-networks can, in general, be used as a proxy for (changes in) directionality in regional to supra-regional connectivity. In particular, the position of well-connected assemblages in typo-networks can be compared with reconstructed boundaries, as to their role as meeting-places in a network structure defined by 'small-worlds' (see above). Then a diachronic comparison in search of network dynamics can put predominantly static (or 'synchronic') notions of regional differentiation to the test, acknowledging that boundaries are a form of place-making and an emergent phenomenon. In this respect, Cocchi Genick (1998, 2002) presumes that boundaries were more or less 'stationary' persisting in several main phases (or periods). Adopting her refinements in typochronology as a starting-point for a subphase-by-subphase comparison (§3.2; §9.2), however, I will show that her cultural boundaries are not a self-evident starting-point for reconstructions in a more detailed diachronic perspective (than a period-by-period comparison) and that they result from place-making and were an epiphenomenon of network changes.

A network perspective that regards boundaries as an emergent phenomenon, de-centres notions of territoriality that are focused too much on boundaries instead of networks. It provides a theoretical and methodological framework for understanding 'earlier' Bronze Age cultural landscapes and social networks as dynamic and subject to a high degree of change, fairly similar to the 'later' Bronze Age situation that has taken center stage in the reconstruction of trajectories of change and social transformation in Italian protohistory (§1.2).

2.2.3 Social reproduction and 'multi-sited' social formations

Current accounts of late prehistoric (or protohistoric) social transformation in Central Italy are explicitly concerned with a major network change, juxtaposing the 'earlier' Bronze Age (as a whole) with the 'later' Bronze Age in their focus on the Bronze Age-Iron Age transition (§1.2). Because of the focus on social transformation as a major (if not the main) network change in Bronze Age trajectories, these diachronic accounts fail to take into account all of the changes that may (or may not) have occurred before the 'later' Bronze Age, in the course of several phases of the 'earlier' Bronze Age. The case study will provide a closer look at cultural landscapes and social networks and substantiate that several significant network changes did take place in the 'earlier' Bronze Age (Chapters 3-9). The question whether these trajectories of change should be termed 'social transformation' (or not) is academic. From a network perspective, a distinction between 'social reproduction', which commonly refers to the (relative) stability of (sub)regional networks (or social formations) in the shorter and medium term, and 'social transformation', which commonly refers to major network changes in the longer term, can only be analytical. I will highlight that network changes are inherent in social reproduction, too, and that, as such, both 'reproduction' and 'transformation' refer to trajectories of change (see below). If the heuristic value of the distinction can be preserved, it would entail that a trajectory of 'social transformation' starts from the baseline of 'social reproduction' (not vice versa), as both refer to the same networks of places (hence the same network changes). Because the distinction between 'transformation' and 'reproduction' is analytical, the issue that should be addressed is to what extent diachronic accounts leave continuity and change in the 'reproduction' of social networks unsubstantiated, by adopting more abstract notions of 'social transformation' (§1.2). Although a network approach does not change the basic outline of diachronic accounts, in the sense that – in terms of periodisation – the same Bronze Age trajectories are followed, the difference in the conceptualisation of social change is not academic.

Appropriating Latour

Methodologically, the main problem in archaeological synthesis of social change is similar to Latour's stance against sociology of 'the social' (2005). Paraphrasing this stance for archaeology, Webmoor & Witmore state that the problem is not so much the banner of 'the social' itself, as what archaeologists try to conceal when they adopt 'social' terminology "as a stand-in, a modifier, a catch-all prefix" (2008, 53). They problematise archaeology of 'the social' in its entirety, starting from Meskell & Preucel's edited volume "A companion to social archaeology" (2004), and advocate a network approach under the banner of 'symmetrical archaeology', with its strong focus on human/things relations. Although I subscribe to their critique and Latour's symmetrical approach that puts 'nonhuman' entities on a par with humans in Actor-Network-Theory (ANT), the major problem of 'symmetrical' approaches in archaeology (e.g. Witmore 2006; Knappett & Malafouris 2008; Malafouris 2008; Webmoor and Witmore 2008) is that, because of the miniature scale of the respective case studies, these fail to address the methodological issues related to archaeological synthesis. The same problem of a selective focus, steering clear of archaeological synthesis, was argued for case studies in postprocessual and interpretive archaeology, in general (§2.1.1). Following ethnographic examples (Hoskins 2006), the focus of case studies in symmetrical archaeology (e.g. Malafouris 2008; Webmoor and Witmore 2008) is usually on selected classes of objects (if not a single object). Similarly, archaeological case studies in network analysis focus on a smaller or larger collection of key sites or whole regions as nodes, not on as large a sample of sites as possible (§2.2.1). A selective focus on those objects or nodes that are most illustrative, means that case studies rely on the introduction of unsubstantiated assumptions and generalisations from elsewhere, leaving pieces of conflicting evidence out of the equation.

The safe ground of the generally limited and selective scope of archaeological case studies in network analysis is problematic from the symmetrical perspective of ANT, because it is reductive and challenges the flat and open-ended character of networks (Latour 2005). A further problem with archaeological case studies in network analysis is that because of their limited and selective character they are often synchronic, not diachronic in scope. Different from most archaeologists who, following the object orientation of the discipline, would see the epistemological stance of symmetrical relationships between people and things as the main tenet of ANT, both in past practices (e.g. Malafouris 2008) and present archaeological work (e.g. Holtorf 2002; Webmoor and Witmore 2008; Edgeworth 2010), I would argue that it is the methodological premise of ANT that goes to the heart of archaeology. This premise emerged from the laboratories studied in sociologies of science (Pickering 1992), also the context of discovery of ANT (Latour 2005). It is as pertinent to archaeology as symmetrical relationships, because it can be brought to bear on the core business of the discipline. The notion that networks can only be traced when they leave traces at moments of change (Latour 2005) reads as a synopsis of diachronic comparison, the fundamental form of archaeological synthesis. The question is how this notion of Latourian traces can be translated to archaeological tracing of network changes, to which I will return, with the benefit of hindsight, in the conclusion (Chapter 9). Here I'd like to place emphasis on why keeping networks 'flat' (sensu Latour 2005) is a prerequisite in archaeological interpretation from a network perspective.

It is useful to stress again that the distinction made in this thesis between cultural landscapes and social networks is analytical (§1.3). The recurrent emphasis on 'actual' spatial dimensions in the critical discussion of landscape approaches was aimed at problematising the 'imagined' dimensions of cultural landscapes (§2.1). On the one hand, this acknowledges the methodological problem of generalising tendencies and is akin to the Latourian concern with keeping networks as 'flat' as possible. On the other hand, avoiding (or exposing) unwarranted generalisations ensures that cultural landscapes and social networks are made commensurable, both phrased in spatial terms as networks of places (or nodes). In this respect, the issue whether 'social' can be used as a prefix for networks (or not), is irrelevant (contra Webmoor & Witmore 2008), as long as the aim is to come up with a different approach to archaeological synthesis in terms of 'flat' (or at least 'flatter') networks, not replete with unsubstantiated generalisations. What is relevant in problematising 'the social', is the issue of scalarity (or 'multi-scalarity'). The introduction of a series of scales which are not explicity spatial, does not help in keeping networks 'flat' (sensu Latour 2005), nor social (in a 'flat' sense). The issue of scalarity will be addressed first, from a network perspective, in the discussion of the 'multi-sited' character of social life. Subsequently, trajectories of change inherent in 'social reproduction' will be discussed, illustrating and substantiating the argument that its distinction from 'social transformation' is analytical (see above). I will argue that, in the end, the realisation that 'social reproduction' is all about networks

and network changes, provides the starting-point for extending a (flat) network perspective to include the study of historical trajectories (Chapters 8 & 9).

The issue of scalarity: social life as multi-sited

The issue of 'social formations' is a thorny one in a Latourian sense (see above). Rather than a 'flat' understanding, it is common practice to adopt notions of 'scales' to conceptualise the many dimensions of social life. Over the last decade attempts have been made to question and bridge the gap in archaeological methods and theory between the 'household', as the most elementary social formation, and 'society' at large. Social formations on intermediate levels, such as neighbourhoods and so-called 'local communities', have increasingly become a research focus in themselves (e.g. Canuto & Yaeger 2000; Joyce & Gillespie 2000; Gerritsen 2004; Meskell & Preucel 2004; Van Dommelen et al. 2005; Düring 2005, 2006, 2007; Nanoglou 2008; Samson 2010), including their trajectories (see below).[33] This particular interest is another strand in the convergence of theoretical and methodological concerns in archaeology and anthropology, in addition to the study of object biographies (§2.1.2). In a sense, the common ground found in the Lévi-Straussian notion of 'house societies' is another form of biographical approaches, conceptualising the lives of houses and their inhabitants as mutually constitutive (cf. Carsten & Hugh-Jones 1995; Joyce & Gillespie 2000; Düring 2006; Beck Jr. 2007). On the one hand, the archaeological interest in 'intermediate-level' social formations has helped to question the usefulness of a catch-all notion such as 'society' at large, similar to Latour's argument against sociology of 'the social' (2005). On the other hand, the indiscriminate addition of separate, intermediate scales (or layers of social life) is unhelpful from a network perspective, especially if these are regarded as intrinsically paired with an equally layered series of distinctive 'collective identities'.[34] In particular, each layer in the series of a household, a neighbourhood, a local community, a (larger) community and society (at large) tends to be used interchangeably in the double sense of a 'collective identity' (or a social group) and analytical scale (in a spatial sense).

The conflation of social groups with spatial entities is problematic, if it adopts a static conceptualisation of social formations, instead of regarding 'formation' in its dynamic sense as an ongoing outcome (cf. Arroyo-Kalin 2004). Such a conflation would reinforce the misconception of (or, reify) 'social formations' as bounded spatio-temporal entities (§2.2.2). From a network perspective, social life has to be regarded as 'multi-sited', involving a range of places (not one place), hence networks.[35] Social formations are an emergent phenomenon from networks of places (not vice versa). Social formations are therefore regarded as '(sub)regional networks' in this thesis, rather than cultures or groups, and not infrequently juxtaposed with an apparently generic sense of '(supra)regional connectivity' (§2.2.2). In this relational sense, social formations are open-ended and together make up an overall sense of connectivity (cf. Torres 2005), not vice versa. In other words, the distinction between networks and connectivity is analytical, acknowledging that both networks and connectivity should be conceptualised similarly (as one and the same). In this respect, the question "What sort of a 'node' is constituted by a particular place?" cannot be disconnected from the question "What sort of a 'relationship' is constituted by places that are regarded as connected?". In combination, these questions address the issue of scalarity, both in a social and a spatial sense. The multi-sited character of social life in itself implies movement between places. Making connections (or creating connectivity) in open-ended networks creates intersections at particular places. As a consequence, one place can be part of more than one 'multi-sited' social formation at the same time. This aligns with a Latourian, 'flat' understanding networks that appreciates the 'real costs' of moving from one place to another and back (§2.1.2), rather than introducing an unsubstantiated assumption about a (type of) place. Rather than adopting a predefined notion of scale (uprooted from networks), nodes can be interpreted in terms of distance, again both in a social and a spatial sense, based on the 'actual' movements were involved.

[33] The relatively recent anthropological synthesis by Helms (1998) raises related issues, although her use of the term "The House" for 'intermediate level' social formations can be regarded as a misnomer, since it does not seem to refer so much to 'households' as to 'local communities' (Helms 1998, chapter 2).

[34] In my earlier work I have used the term 'collective identities' (e.g. Van Rossenberg 2005), without referring explicitly to established uses of this particular concept in the social sciences (cf. Snow 2004). In this thesis I have decided to refrain from using any identity-related terminology altogether.

[35] The translation of 'multi-sited ethnography' into archaeology is still in its early stages (cf. Ryzewski 2012 for a recent overview), but its main concern seems to lie with a 'synchronic' understanding of multi-sitedness, not with networks for the sake of diachronic forms of archaeological synthesis.

Grounded in a network perspective, a basic distinction can be made between 'local', 'communal' and 'intercommunal' nodes. A node can be regarded as 'communal', if it constitutes a place that is shared by a number of settlements (i.e. otherwise unconnected places or 'local' nodes). A 'communal' node connects several smaller 'multi-sited' social formations (or constitutes their intersection) and is – by definition – instrumental in the social reproduction of a larger community (than an individual settlement). Following the same 'multi-sited' principle, a meeting-place at the intersection of two (or more) (sub)regional networks can be interpreted as an 'intercommunal' node that is instrumental in the social reproduction of an even larger 'multi-sited' social formation (or a regional to supra-regional network). Larger formations can be temporary, if they depend solely on the occasional or periodic co-presence of people. However, a larger social formation (or network) can never solely be a so-called 'imagined community', given the 'actual' connections and movement required in a Latourian sense (see above). For this reason, it is not unlikely that (inter)communal nodes, 'temporary' or more permanent, can be recognised as such archaeologically, as they were often constituted by particular, polythetically distinctive forms of place-making (§2.1.2; §2.2.2). Given that burial was often a selective practice in later prehistory, for instance, those places of burial (or cemeteries) that are archaeologically visible tend to be (inter)communal (rather than 'local') nodes. To be more precise, there is a higher chance that assemblages related to (inter)communal nodes are polythetically distinctive, because they are by definition part of several, smaller and larger 'multi-sited' social formations at the same time. Although making such a distinction between 'local', 'communal' and 'intercommunal' nodes does not resolve the issue of social and spatial scalarity altogether, a network perspective does shift the emphasis towards place-making. It acknowledges the 'multi-sited' character of social life and avoids the conflation of social groups with spatial entities (see above).

A network approach does not conceal that social formations are multi-sited and open-ended, which does happen when archaeologists adopt notions of layers and scales in common practice. If networks should be kept 'flat' in a Latourian sense, this means that they bulge at particular places. As networks, social formations cannot be layered, but particular places can be (or emerge as) layered, if they constituted nodes in several 'multi-sited' social formations at the same time. Here, for places (as nodes in networks), I prefer 'layered' over 'nested', because a place cannot be 'nested' in itself. Similar to networks, the notion of 'nesting' (e.g. Bender et al. 1997; Gillespie 2000c) has relational qualities and cannot be studied in a single place. However, it carries the risk of conflating social formations with bounded entities (see above) in the misconception that formations overlapped (as a whole), rather than the notion that particular places (as nodes in networks) constituted intersections in otherwise open-ended formations. For instance, to determine whether a particular place was 'layered' (or not), the conceptualisation of social formations as an emergent phenomenon (from networks of places) reinvigorates spatial analysis in archaeology. Network characteristics of nodes cannot be assessed with a selective focus on particular places, but requires a non-selective approach (§2.2.1). The resulting focus on nodes in terms of the 'multi-sited', relational character of place-making ensures that networks are commensurable with cultural landscapes (§2.1), in dealing with precisely the same places.

Descriptions and interpretations in the case study (Chapters 3-9) will approach sites as both places and nodes, charting both their landscape and network connotations. In particular, patterns and questions that emerge from the chapters dealing with 'distinctive' practices such as metalwork deposition (Chapter 4), burial (Chapter 5) and cave use (Chapter 6), will be incorporated in so-called 'thick descriptions' (after Geertz 1973, cf. Luhrmann 2004). In the description of settlement patterns (Chapter 7) I will focus on relationships between places in cultural landscapes as networks. The spatial dimensions of place-making that emerge from these 'thick descriptions' will be interpreted from a network perspective, equating places with nodes (and vice versa). The descriptive approach can only be dictated by the particular structure of 'earlier' Bronze Age archaeological records in Central Italy, which are characterised by uneven spatial distributions of different types of places (Chapters 8 & 9). In most cases the polythetic groups are so clear-cut that the places that make up these groups can, at the same time, be interpreted as distinctive sorts of nodes, linked to distinctive (yet relational) notions of place. For this reason, 'earlier' Bronze Age places can seldom be characterised as 'layered' (see above), contrary to 'later' Bronze Age places in Central Italy (Van Rossenberg 2005). Rather, there is strong indication of 'zones' in cultural landscapes that results from the selective character of 'multi-sited' place-making (Chapters 8-9), in the sense that particular places ended up as distinctive nodes in social networks, as part of 'boundary work' (see above). This relational understanding of 'earlier' Bronze Age notions of territoriality would be lost in the adoption of scales that are conflated with bounded spatio-temporal entities.

Trajectories and rhythms of social reproduction

The issue of scalarity has so far been addressed in a predominantly spatial sense, focusing on the 'multi-sited' character of social life (see above). It is beyond question, however, that archaeologists are fully aware that the phenomena (here networks) they study, have both spatial and temporal dimensions. Nonetheless, the trajectories of change inherent in 'social reproduction' tend to be overlooked, especially if social formations are not conceptualised in their dynamic sense and conflated with spatial entities (see above). With the analytical framework of periodisation as the main structuring principle of archaeological synthesis, there is a risk of disconnecting spatial, 'synchronic' dimensions of archaeological phenomena from their temporal, 'diachronic' dimensions. As Smith puts it: "Periods are synchronic constructs in that events and conditions occurring within a given period are treated as analytically contemporaneous … In the study of change, we are thus required to construct periods or phases and then make comparisons among them" (Smith 1992, 27-28). In this manner, most of the temporal rhythms of past realities are taken for granted, although they are inherent in the 'multi-sited' character of social life and have contributed immensely to the structural properties of archaeological evidence. In doing so, a false sense of trajectory can follow from assumptions implicit in the analytical framework of periodisation. This is especially disadvantageous for Annaliste (or Braudelian) approaches that tend to equate archaeological periods with the medium term (cf. Bintliff 1991a; Knapp 1992a), leaving trajectories and rhythms within such a given, bounded entity unexplored. To underscore this, trajectories and rhythms that are inherent in social reproduction and can be recognised (and/or conceptualised) archaeologically, irrespective of periodisation, are discussed here and will be used in the case study (Chapters 3-9). In particular, the 'annual cycle', the 'domestic cycle' and 'trajectories of community formation' are discussed here in terms of 'multi-sited' place-making in cultural landscapes and social networks.

Annual cycle

The 'annual cycle' is a first structuring principle of life in Bronze Age farming communities, following the seasonal rhythms inherent in agricultural practices (cf. Foxhall 2000; Williams 2003; Mlekuz 2010). Agriculture is only one element in a wider range of activities that can be linked to seasonality in the Mediterranean, where evidence for a seasonal subsistence strategy such as transhumance pastoralism is relatively widespread. Pastoralist practices are a recurring element in Italian Bronze Age studies, often based on comparisons with historically known situations (e.g. ethnohistorically documented transhumance routes).[36] Pastoralism is therefore one of the topics that will be discussed at greater length in the case study (Chapters 6 & 7). As a form of seasonal mobility, it would have been a crucial element in the exploitation of mountainous resources, the organisation of cultural landscapes, as well as patterns of mobility beyond a micro-regional scale in general. Whereas a tendency can be discerned in Italian Bronze Age studies to focus on cave use in substantiating pastoralist practices, a 'multi-sited' approach will be adopted in this thesis, based on a comparison of faunal samples from both cave and open-air assemblages (§7.4). Other seasonal (or periodic) actvities on the temporal scale of the annual cycle, singled out in the case-study for their potential role in creating (inter)communal nodes (see above), are, for instance, depositional and/or ritual practices carried out at cult places beyond settlements. Starting from ethnographic records, one may think of social interaction in terms of gatherings and feasts (or festivals), providing a context for intercommunal rituals (e.g. initiation, ancestor veneration), marriage arrangements, exchange, etc. (cf. Helms 1998), although these events did not necessarily follow an annual periodicity.[37] In general, it can be expected that (inter)communal interaction in later prehistory was structured in the annual cycle. For social interaction involving several groups to take place, especially in presumably less densely populated situations, it would have been set at particular times of the year and, arguably, at particular places, too. To reiterate, this is one of the reasons that 'small-worlds' are a likely characteristic of later prehistoric networks (§2.2.2).

Domestic cycle

Another structuring principle of life in Bronze Age farming communities is the so-called 'domestic cycle'. This concerns the generational rhythms that are inherent in the lifecourses of individuals,

[36] Puglisi 1959 is the classic study on Bronze Age pastoralism in the Italian peninsula, which has recently been extended to Copper Age (cf. Manfredini 2005a). More recent studies include Barker 1989; Barker & Grant 1991; Santillo Frizell 2004a.

[37] Complex kinds of feasting have been connected with the notion of "tournaments of value" (Appadurai 1986a), cf. Theuws 2003 on early medieval festivals.

punctuated by social events such as initiation, marriage and death. Such rhythms structured the social dynamics characteristic of the lifecourses of domestic groups or households (and vice versa). The study of houses and households constitutes a major (if not the main) field in which the disciplines of archaeology and anthropology have increasingly converged over the last decades (e.g. Wilk & Rathje 1982; Parker Pearson & Richards 1994; Carsten & Hugh-Jones 1995; Allison 1999; Brück & Goodman 1999; Gerritsen 1999; Goodman 1999; Joyce & Gillespie 2000; Gerritsen 2004; Hendon 2004; Düring 2005, 2006; Beck Jr. 2007; Gerritsen 2008; Nanoglou 2008; Herva 2010; Mlekuz 2010; Samson 2010). Archaeologists have recently extended the study of houses and households to the longer term, following trajectories of social reproduction through so-called "household series" (Smith 1992, 30). In specific cases, the physical structure of the house has been put forward as a major structuring element in household dynamics over several generations, as shown by the elaboration and transformation of the house into a focus for ritualised practices in the longer term (notably in terms of so-called 'house societies'; cf. Gillespie 2000a, 2000b; Joyce & Gillespie 2000; Beck Jr. 2007). Despite the relative scarcity of Early Bronze Age houses excavated in Central Italy (Chapter 7), it can be argued that the first instances of the elaboration of particular houses (or house locations) in a 'house society' sense only emerged in the Middle Bronze Age and subsequently turned into a stronger tradition in the later Bronze Age (Van Rossenberg in prep.). The adoption of an explicit form of house symbolism in the shape of urns (the well-known 'hut urns'; Italian: "urna a capanna") translated the house as a material metaphor for social dynamics of domestic groups in the field of mortuary practices in the Final Bronze Age and Early Iron Age (Van Rossenberg 2005, 2005c). This should be regarded as a second or third stage in a longer trajectory that started in the Middle Bronze Age (Van Rossenberg forthcoming).

Funerary evidence, the other main element in cultural landscapes linked to the social reproduction of domestic groups, is as scarce as excavated settlements in the 'earlier' Bronze Age of Central Italy. In particular, funerary use of caves started to emerge as the predominant form of burial in the Early Bronze Age, with a peak in the Middle Bronze Age (Chapters 5 & 9), but only as one element in a wider range of depositional practices in repetitive cave use (Chapters 6 & 9). Although incorporating individuals from domestic groups, the question is to what extent funerary cave use can be informative about the 'domestic cycle', or (inter)communal social reproduction (see below), as it constitutes a situation of selective burial (Chapter 6). In particular, a recurrent assumption in Italian Bronze Age studies is that a one-to-one relationship existed between settlements and cemeteries, in terms of proximity and synchronicity. In the end, the presumption derives from the interrelationship between settlements and cemeteries in 'Iron Age models' (§1.2; §2.1.3), exemplified by the spatial and conceptual organisation of relatively well-known Etruscan city state territories consisting of a large settlement surrounded by a number of cemeteries (cf. Riva & Stoddart 1996). Although a one-to-one relationship can often not be upheld on closer inspection in the Bronze Age,[38] this presumption has left the alternative scenario that cemeteries were meeting-places in 'multi-sited' social formations, to a large extent unexplored. In addition, there is a tendency to interpret places of burial (or cemeteries) in a 'synchronic' sense, taking age distributions of buried individuals merely as a reflection of household or community composition, not in terms of a trajectory emerging from repetitive, intergenerational use of the same place for burial (cf. Sayer 2010). Wherever possible, the 'diachronic' dimension of cemeteries should be stressed, as a trajectory in itself and the counterpart of 'household series' (see above). This provides a context for interpreting a burial simultaneously as an act of deposition in a cemetery and marking a significant event in the trajectory of a domestic group (or household), thereby underscoring the 'multi-sited' character of social life.

Community formation

Trajectories of 'community formation' run the greatest risk of getting lost in later prehistoric and protohistoric periodisation, as they take shape on the Braudelian medium timescale of 'conjonctures' (cf. Bintliff 1991a; Knapp 1992a). These tend to be equated with sequences of constructed spatial-temporal entities in archaeology (§2.2.2), such as phases, periods and cultures (or 'facies' in Italian terminology). Failing to incorporate the temporality of trajectories of community formation results in the reification of periodisation and makes it impossible to recognise trends in the medium term (on the Braudelian timescale of 'conjonctures') that are independent of the building blocks of the analytical framework of periodisation itself. In this respect, it should be recognised that later prehistoric and

[38] It has been argued that more circumscribed, strictly defined 'territorial' entities can be recognised starting with the Early Iron Age (cf. Guidi 2000; Bietti Sestieri 2010).

protohistoric periods, including (sub)phases, more often than not span hundreds of years (i.e. non-experiential entities) rather than decades (i.e. on the timescale of generations). For instance, regional projects based on field survey normally reconstruct period-based, 'synchronic' settlement patterns, which add up to a series of consecutive phases that can be compared 'diachronically' on centennial scales (and, ideally, inter-regionally). Most of these studies focus on transformations of settlement patterns and territoriality in the long term (cf. Bintliff 1999), thereby disregarding finer-grained rhythms of settlement dynamics and community formation as it happened. Archaeologies of communities (sometimes more specifically 'local communities') have only relatively recently emerged at the intersection of the longer-established fields of household archaeology and settlement archaeology (cf. Brück & Goodman 1999a; Goodman 1999; Yaeger & Canuto 2000; Gerritsen 2004; Van Dommelen et al. 2005). This emerging field of studies has started to address questions about trajectories of community formation in more detail and from a 'multi-scalar' perspective. On the one hand, the finer-grained rhythms of the 'domestic cycle' (see above) are incorporated in reconstructions of trajectories of community formation. On the other hand, attempts are made at establishing a connection with ecological rhythms that constrain the sustainability of communities (such as soil degradation) and that could have determined patterns of settlement abandonment (e.g. Roymans & Gerritsen 2002). However, the focus remains selective, in both these cases on houses and settlements. A failure to consider cultural landscapes and social networks in full means that the role of other places than settlements in trajectories of community formation cannot be appreciated.

To put it differently, the 'multi-sited' character of community formation has been left unexplored and, therefore, the intersection of places in cultural landscapes (§2.1) and nodes in social networks (§2.2) unappreciated. Trajectories of social reproduction were entangled with the histories of particular places that constituted (sub)regional networks. Later features replaced (or were juxtaposed with) prior features and other remains of activities at cult places, cemeteries and settlements. By default, these defining 'moments' in place histories (or trajectories) can be interpreted as constitutive of network changes, most notably the establishment and the abandonment of a place. At the same time, the latter acts of place-making (and place-undoing) cannot be regarded indiscriminately as breaks in trajectories of social reproduction. Rather, household and community formation would have followed a continuous and intergenerational trajectory, albeit a punctuated one, as it is defined by social events such as moving house, marriage, death, and other lifecourse and periodic (inter)communal events. Since in many cases deposition as an act of place-making can be interpreted in terms of social events,[39] here the bias towards deposition in the archaeological record can be regarded as an advantage (§2.1.2; §2.1.3). In other words, the bias towards deposition results in the overrepresentation of defining moments in trajectories of social formations, especially in Bronze Age archaeological records. Moreover, (temporary) closure and starting-points of place histories can be conceptualised as highly interdependent. For instance, settlement abandonment in one place almost invariably means the establishment of the (remaining) members of the respective community elsewhere, either in a new settlement or merging with another community in a persistent settlement. Working with the bias towards deposition, archaeologists can focus more on reconstructing 'multi-sited' trajectories (in a diachronic sense) than they usually do.

It is the multi-sited, relational character of trajectories of community formation that created structure in the past, as well as in archaeological records. In this respect, Bronze Age studies have increasingly shown that particular acts of deposition are 'time-transgressive' and can refer to the transfer of objects and substances from a 'prior' place and incorporating these in 'new' place-making. In the context of network changes, such acts of deposition almost literally materialise the 'punctuated' continuity inherent in trajectories of social formations (i.e. social reproduction). These cases can be recognised archaeologically by their typochronological ambiguity and, for this reason, make more sense as a social practice of transfer (as a material form of social reproduction).[40] In general, the notion of trajectories of community formation captures the finer-grained rhythms and continuity inherent in social reproduction, as well as the 'multi-sited' character of social life and its trajectories. As a consequence, this notion will be used most frequently in the case study of Early Bronze Age networks and trajectories (Chapters 3-8). Capturing the intersection of cultural landscapes (§2.1) and social networks (§2.2), trajectories of community formation are also a significant part of a network approach

[39] Elsewhere I have referred to this structural property of archaeological records as its 'punctuatedness' (Van Rossenberg 2005a).
[40] Here a focus on multi-sitedness can add an ancestral dimension to place-making, steering clear of the notion of 'heirlooms' in too pregnant a sense (cf. Joyce 2000).

to historical trajectories in the long term. This is the third thread of the theoretical and methodological framework that will be taken up again after the case study (Chapters 3-8), extending a non-selective, multi-sited and data-rich approach of cultural landscapes and social networks to the study of network changes in the longer term of Bronze Age trajectories (Chapter 9).