Introduction

Creativity is a quality that is highly valued, but not always well understood. Studies of creativity frequently focus on the modern era, yet creativity has always been part of human history. It is impossible to understand the development of the new – the imagination, ideas, and innovations that form our past – without invoking creativity.

At the same time, however, the archaeological investigation of creativity is frequently perceived to be somewhat romantic and perhaps even impossible. Despite an explosion in studies of creativity in other disciplines (e.g. Bohm 1996; Sternberg 1998; Boden 2003; Hallam and Ingold 2007), creativity is often seen to be a disembodied, almost magical quality of individuals that is responsible for radical self-expression and uniqueness (Boden 2009; Gibson 2010; Wilf 2011). It is an intangible 'something' valued in and of itself as a kind of intellectual property (Thrift 2000). This reflects a view of the subject in which creativity is often understood in terms of individual (often artistic) 'creative genius' (Boas 1955), where personal expression has become one of the cornerstones of modern Western capitalist culture (Taylor 1989; Wilf 2011). By locating creativity solely in the mind of the exceptional person and outside the material realm, such a view of creativity would indeed seem to place it beyond archaeological study. As a discipline, archaeology struggles to identify the work of individuals. Instead it has a strong emphasis on social structures and actions constructed through the identification of patterns in material culture. A non-materialist, individualist view of creativity, therefore, does not chime with archaeological investigation.

An alternative view of creativity identifies it in terms of shared cross-cultural cognitive processes in past and present that sit at the heart of what it means to be human. Drawing heavily on recent work in neuroscience and psychology, in this perspective the ability to imagine and to express

creativity – defined primarily in terms of artistic vision – sets people aside from the rest of the animal kingdom in a manner akin to the distinctiveness accorded to humans through the notion of *Homo faber* (Arendt 1958). Such a perspective lends itself to exploring the origins of creativity in the deep human past through, for example, the study of cave paintings and portable art (Mithen 1998; Pringle 2013). Yet here too creativity is seen as located in the mind, leaving questions regarding the cultural and material specificities of creativity unanswered. It raises the question as to whether creativity can be explored outside artistic endeavour. In other words, are there other forms and contexts in which creativity might be expressed? Under what conditions might creativity be stimulated? How might creativity be articulated in later prehistory or in settings that archaeologists deal with frequently, including settlements and cemeteries?

In this book I want to address these issues by exploring creativity as a cultural and material phenomenon. At the cultural level (between the extremes of absolute individualism and cross-cultural similarity), creativity is a social phenomenon that emerges from the relationship between people and society (Leach 2004; Gibson 2010). It is not only the momentary flash of individual brilliance that results in an absolutely original idea – there are very few absolutely original ideas (Jeanes 2006) – but it emerges within social settings in which knowledge is cultivated and transferred among people. It can be understood as the ability to see connections and relationships where others have not (Liep 2001; Jeanes 2006). In other words, innovation in the production of cultural forms involves the manipulation, reconfiguration, and recategorisation of familiar forms and ideas (Barnett 1953; Koestler 1964; Boden 1994; Liep 2001; Leach 2004). In this sense, creativity is not a matter of ownership or appropriation. Creativity always emerges from existing understandings and, as such, is contextually specific. The philosopher Gilles Deleuze (1995: 161) put it well when he said, 'It's not beginnings and endings that count, but middles. Things and thoughts advance or grow out from the middle, and that's where you have to get to work, that's where everything unfolds'. This perspective diverges from a traditional archaeological emphasis on the identification of origin points and moves towards a wider understanding of the new.

In terms of materials, creativity is a matter of knowing how to work with them – their potentials and limitations – in order to put ideas into practice. Different materials have different qualities. What can be done in one material cannot be done in another (Pye 1968). In other words, the contrasting innate properties of different materials lend themselves to

being worked in different ways. As the sculptor Constantin Brâncşui stated,

> [Y]ou cannot make what you want to make, but what the material permits you to make. You cannot make out of marble what you would make out of wood, or out of wood what you would make out of stone . . . Each material has its own life . . . we must not try to make materials speak our language, we must go with them to the point where others will understand their language.
> (Pallasmaa 2009: 55)

Recent work has emphasised how learning these languages – learning to work with materials by listening to them – is not self-evident but is developed through gestures, tools and direct experience of materials by craftspeople (Piazza 1997). In other words, learning material languages is not simply a matter of abstract intellectual thought but of accumulated physical experience (cf Leach 2004). Materials can suggest and inspire ideas, but it is only through working with them that their properties and potentials become clear. It is during the construction of a relationship with materials that possibilities of modification, transformation and structuring present themselves (Piazza 1997). This process of discovery includes the acquisition of a wide spectrum of knowledge including, for example, malleability, texture, shape, form, colour, and weight.

Understanding the relationship between materials and creativity, therefore, is not to argue for material determinism but rather for an investigation of the particular ways that people acted in relation to materials, in both making and using objects. Thus, it may be possible to trace creative practice through a focus on decisions in the ways that people interacted with materials. In this view, objects and their arrangement are the tangible expression of creative action. Emphasising the material expression of creativity offers a methodological avenue for its investigation in archaeology as both process and outcome. At the same time, however, such an approach suggests that the archaeological exploration of creativity demands a considered focus upon specific materials.

In this book I want to explore how creativity was expressed in one specific medium: clay. I want to take a journey into the past to investigate how it was articulated within local and regional contexts in the Bronze Age in the Carpathian Basin. My aim is to explore creativity in the making of objects from clay and in the ways that such objects were employed within specific settings.

The Creative Potential of Clay

Clay had long been a familiar medium to Bronze Age craftspeople (Sofaer 2006; Michelaki 2008). Clay is not, however, a singular material; there is not one clay but many clays, each with different properties and hence implications for the way in which it is worked. It may also be modified in different ways through mixing and the addition of tempers. Such variation in raw material and its manipulation to promote desired qualities is not unique to clay. The same might be said of metal ore and fibres used in the production of textiles. The defining quality of clay, however, is its plasticity, as a result of which an infinite variety of shapes can be formed.

There are many different potential ways to work with clay. For instance, clay can be pinched, thumbed, coiled, squashed, rolled, moulded, incised, impressed, pierced, or joined to other pieces of clay or to other materials. It is possible to make simple and complex, small and large objects from clay. Unlike textiles, which must be woven as a flat sheet and which are determined through the set-up of the loom, or the shaping of bronze, which is predetermined through the forming of a mould, the shape of clay objects need not be pre-planned. In the Bronze Age the search for form took place through the actions of the hand and fingers and, therefore, had the potential to occur in a particularly spontaneous manner since the parameters of the finished object were defined during its production. Clay is thus 'good to think with' (Sennett 2009: 129). There is no inevitability either in the shape of clay objects or in how to form things from clay; different objects can be made using similar techniques, and similar objects can potentially be made using different techniques. Clay thus asks the potter to make creative decisions for which there are potentially many ways of arriving at an answer. It eludes technological and material determinism in which materials and techniques lead to certain forms. This is not to say that working with clay is without constraints – like any other material it also presents these – but, rather, that it is a potentially provocative material.

In making decisions the potter listens to his or her clay and responds to it through direct contact with the material. In this sense the actions of the potter are intimately linked to his or her perception of the material itself. This perception is multisensory and arises from the direct relationship between the body and clay in the making of objects (cf Ingold 2013). Working with clay requires potters to think through their body (cf Merleau-Ponty 1962). This direct relationship also offers possibilities for a qualitatively different kind of creativity to other materials as the plasticity of clay directly mirrors the actions of the body: If I push the clay, I make an

indent. If I pull it, I draw it out. If I press down upon it, I flatten it. Working with clay is a matter of probing the limits and possibilities of interaction between maker and materials (Morris 1970). Furthermore, in working with clay there is immediacy between material response and the human body in which the effects of actions are at once perceptible. Objects arise from a constant exchange between the 'objective properties of the material and the subjective, problem-solving capacity of artisanal will' (Adamson 2010: 360, paraphrasing Focillon 1989).

The language of clay, therefore, is open to a wide range of articulations. In a similar way that English has a range of regional and national expressions – as British English, American English, Indian English, various kinds of pidgin English, or local dialects – clay can be worked in distinctive ways in particular cultural settings. In this sense, learning the language of clay is a culturally specific process. Yet the plasticity of clay not only provides its own language, but also lends itself to the transliteration and translation of other material languages. Transliteration and translation differ in that in the former (as for example in the transliteration of Japanese characters into Latin script), the original language is retained but transferred into a different material. In material terms, this means that techniques developed in another material (such as chiselling or jointing techniques in wood, or riveting in metal) can be implemented in clay (see Sofaer 2006; Kacsó 2011). Sennett (2009: 127) terms the application of a technique seen in one material to another a 'domain shift'. Here creativity lies in the imagination of what is produced as an outcome rather than in the development of the technique. By contrast, in translation the original language is reconfigured into another language. Here a different set of techniques or ways for working with material are employed to recreate an existing object in another material, in other words to make a skeuomorph. In this case creativity lies in the application of different material-specific techniques in order to reimagine the original object in a different material. In transliteration and translation creativity thus lies in contrasting locations. Nonetheless, in both cases the making of clay objects is a matter of the dynamic between the constraints and responsiveness of the material and those of the potter.

The qualities of clay are not, however, constant throughout the making process. Clay is plastic when hydrated, leather hard when drying, and when fired a range of hardnesses varying from that which can be scratched with a finger-nail to a very hard glass-like surface. Making things from clay is a matter of managing metamorphosis of substance as well as of form. It requires getting to grips with temporal changes to the material – judging its state – and of temporality in the making process itself. Just as language is

not just a matter of stringing sounds together but also involves timing and rhythm, so it is with working with clay. Clay objects are temporal accumulations of actions, effects and pauses, each of which have their own timing, rhythm and duration. Since clay is a plastic additive medium, it accumulates histories of these allowing archaeological access to the creative process itself. Thus the innate qualities of clay not only allowed for creativity in the past, but permit the tracing of past creativity in the present. It is useful, therefore, to explore them in more detail.

The particular qualities of clay lend actions to their own specific timing and these in turn have duration. Like the good telling of a joke, timing is not just a matter of what to say but also of when to pause and the duration of pauses during the joke's delivery. In language the timing and breaks between stressed words or syllables, as well as words and sentences, are what enable the listener to make sense of what is being said. In craft production, the timing of particular actions – when they do and do not take place – is also a matter of listening to the material. In other words, when a particular action takes place in relation to the state of the material. The skilled practitioner understands the importance of timing and chooses their moment with care (Ingold 2011, 2013). For clay this is important with regard to how the material will respond differently to the potter in its different states. These must be anticipated and integrated into different stages of the making process as different kinds of responsiveness of the material to touch and manipulation are both possible and required at different stages of production. For example, vessel forming needs to take place while clay is still damp, but avoiding vessel collapse or sagging when constructing large vessels such as pithoi requires that they be built in stages. In this case it is necessary to let the lower parts of vessels dry before further applying clay, but in order to make sure that the new clay additions adhere properly and to avoid premature shrinkage, it is also necessary to make sure that the existing parts of the vessel to which it will be added are damp (Blandino 2003). This requires the potter to actively manage the state of the clay and to know both when to stop building the vessel and when to resume. Surface treatments must also be timed. For instance, burnishing must be carried out when the clay is at the leather-hard stage. Pots must also be dried prior to firing in order to avoid their sagging in the kiln. Firing leads to colour changes and vessel shrinkage, and these may further need to be factored into the making process if a particular visual effect or size of an object is required.

Working with clay takes time; it has duration. Even if a potter desires to make an object in a single sitting, whatever the object, it is inevitably a somewhat punctuated process with actions preceded and followed by

periods of monitoring and waiting. For clay, the preparation of the material may require a substantial period of time, especially if a very fine clay is desired and the clay needs to be soaked. Furthermore, the possibility to move between wet and dry states means that objects (large or small) need not be finished at a single sitting, as long as they are sufficiently protected between working sessions and not allowed to dry out completely (Blandino 2003). Indeed, the positive need to return to large vessels over several occasions in order to successfully maintain the vessel structure means that the process of making such vessels may be quite drawn out. In addition, since clay objects must be dried to a leather-hard state prior to firing, there is inevitably an hiatus between finishing an object and firing it. Firing itself and waiting for a vessel to cool may also be a protracted process. The time taken to make an object from clay, of course, is dependent upon the size and complexity of the object itself and is highly variable.

Potting is thus a matter of understanding how to actively follow the material by remaining alert to sensory clues that reveal changes to it (Ingold 2011). This in turn demands of the potter an awareness of temporality – of the way that the forming of objects is related to 'material flows' by which objects unfold (Ingold 2011) – in other words, an understanding of the ways that objects are made over time. This is related to an understanding of the changing qualities of the material and the sequence and performance of potting tasks, each with its own timing, rhythm and duration. What appears to the observer to be a linear series of steps, or *chaîne opératoire*, is thus 'a complex reciprocal process for the practitioner' (Keller 2001: 37). Each task takes its meaning from its position within a suite of tasks, and each action follows from the previous action yet never quite repeats it exactly (Fogarty 1937; Ingold 2011). When the duration of making is misjudged and actions are mistimed in relation to the material, like interrupting someone speaking, the results seem to jar. For instance, in order to achieve clean-looking incised decoration, the incising must be carried out when the clay is neither too wet nor too dry. Impatience or rushing to incise a pot too early results in jagged edges as the clay piles up at the edge of the line. The number of pots with mistimed actions that enter the archaeological record may be relatively few compared to the number of mistimed interventions since, prior to firing, it is possible for potters to manipulate and manage the state of clay by wetting it or letting it dry and thus to move backward and forward between states. This means that as long as clay does not dry out completely it is possible to correct or erase errors, or to recycle clay scraps. Recycling can also take place following firing as pots

can be creatively deployed in a number of ways: they can be ground up for grog or reused as tools or as building materials.

Working with clay thus presents potters with the potential to combine improvisation and spontaneity as a result of clay's responsiveness to body actions, while simultaneously anticipating and predicting changes to the quality of the material. It also provides particular design possibilities since the lack of inevitability in form and decoration offers potters opportunities to play around with these, should they so desire. It is a medium in which on-the-spot creative problem-solving and pre-planning go hand in hand.

The Bronze Age in the Carpathian Basin

The Carpathian Basin is situated at the boundary of central, eastern and south-east Europe. Also known as the Pannonian Basin or, in the case of the lowlands as the Pannonian Plain, it forms a topographically discrete unit ringed by the Carpathian Mountains, the Alps, the Dinarides and the Balkan Mountains. Two major rivers – the Danube and the Tisza – bisect the basin. Today all or

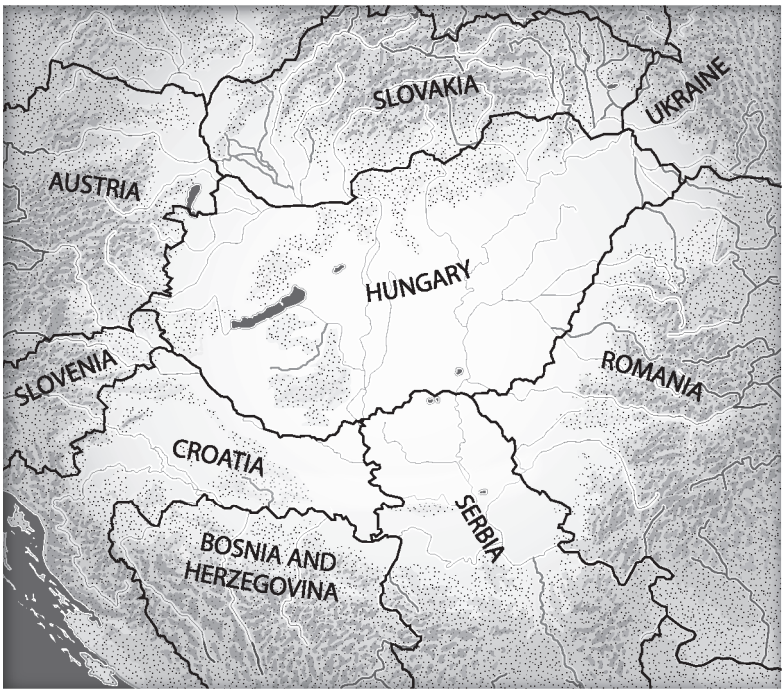

FIGURE 1.1 Map of the Carpathian Basin.

part of nine European countries lie within it: all of Hungary, central and eastern Croatia, south-east Slovenia, north Serbia, western Romania, western Slovakia, and small parts of Austria, Bosnia and Herzegovina and Ukraine. It extends from Vienna in the north-west, Zagreb in the south-west, Belgrade in the south-east, and Satu Mare in the north-east (Figure I.1).

Within the region, clay was a key material in all areas of life. In contrast to their neighbours, the inhabitants of the Alps and Swiss lakes to the north and west who lived in a world of wood, and those to the south and east for whom stone was a key material, the people of the Carpathian Basin literally lived in a world of clay (Michelaki 2008; Sofaer 2011). Easy access to local clay deposits, including the loess that makes up much of the Hungarian Plain, meant that clay was used in construction including as daub for walls, beaten earth floors, ovens, or in plasters. Ceramic vessels used for serving food, drinking, storage, or food preparation, are frequently the most prevalent of all items in archaeological contexts. Clay was also used to make other objects such as spoons, loom weights, spindle whorls, roof weights, portable ovens, perforated clay slabs, briquetage and other ceramics related to salt production, anthropomorphic and zoomorphic objects, models such as carts, abstract shapes including stars or crescents, as well as miniature vessels. Clay objects were used in metalworking such as tuyers and crucibles, as well as moulds for casting. There is therefore an enormous number and range of objects made from unbaked and fired clay. Within the region, clay objects are found in settlements and cemeteries. They were used for domestic purposes as well as prestige objects. Indeed, these two categories were not mutually exclusive as high-quality elaborate vessels are also found in houses. In some cemeteries, ceramics have been identified as high status objects, perhaps replacing metal (Vicze 2011).

From the Early to Late Bronze Age (2500–800 BC) there is also a great deal of temporal and regional variation in ceramic forms and decoration. The large number of objects and their variability over space and time lends itself not only to the investigation of contrasting attitudes to clay as a material, but also to an exploration of creativity in how objects were used. Although clay objects are more or less ubiquitous in the European Bronze Age, this does not mean that creativity was present everywhere or that it took place in equal measure wherever such objects are found. Though both culture and people may be in a never-ending state of perpetual creation as people adapt to changing conditions (Wagner 1981; Toren 1999), it is clear that certain places and periods may be 'hot spots' of innovation while in others change is slow and material culture is more homogenous. Thus, there would seem to be spatial and temporal points that have a dynamic that

presents more favourable conditions for creativity than others (Liep 2001). Along a spectrum of creativity – from the practice-based solutions and ongoing problem-solving of the everyday to the localised conditions of specific environments that offer the conditions for concentrated bursts of novelty or originality (Liep 2001) – the creative potential of clay was deployed in the Carpathian Basin in different ways and to different ends. Investigating creativity thus requires an understanding of the locations in which creativity takes place and the conditions under which it emerges.

If creativity involves the bringing together of previously unlinked ideas, then the potential for the most striking and novel forms might be expected to be greatest where cultural differences are large (Liep 2001). One such point might be the boundary where two or more cultural groups meet. In the Bronze Age – as in later periods – the Carpathian Basin was a cultural crossroads. It was a dynamic region with a rich, complex and shifting cultural milieu, and a changing balance between receptiveness to influences from outside and the maintenance of local traditions. People thus developed and responded to local demands as well as to broader regional and continental influences. The ceramic evidence, alongside local variations in burial tradition and settlement form, reveals a large number of shifting local and regional cultural groups in the area (see, e.g., Hänsel 1968; Bóna 1975; Visy 2003).

Understanding the differences and relationships between these is a challenging task. Traditionally, a heavy emphasis on typology and on understanding local chronological sequences means that these have frequently been framed within the development of individual national chronological schemes, each with their own terminology for what may, in some cases, be rather similar pottery types crossing modern borders. Furthermore, a lack of radiocarbon dates in some areas precludes the effective knitting together of some chronologies where ceramics are clearly substantially different. Nonetheless, the accumulation of culture-historical knowledge does offer substantial opportunities to address dynamics of similarity and difference between groups through an understanding of creative processes in specific locations. While culture-historical approaches to ceramics commonly identify new cultural groups as emerging either from the blending of two or more pre-existing traditions or as a result of migration, the underlying human actions or processes that underpin such mergers or radical shifts have rarely been explored.

Local variability in ceramics contrasts with the widespread similarity of metalwork throughout large parts of the Carpathian Basin. This means that bronze objects have frequently been used as a proxy for absolute dates