The meal furnished by the hospitality of my Samarióte guide consisted chiefly of the flesh of a wild-goat, killed by him on an expedition from which he had only just returned. I obtained from him three pairs of the animal’s horns.  

(Pashley 1837b: 271)

The ‘Burgon ring’ shows two agrimia, as the wild goats of Crete are also known, wide-mouthed and vigorously mating. The finely engraved detail on the circular bezel, only 1.6 cm in diameter, clearly delineates the male agrimi’s bristly coat, beard and his long, curved, knobbly horns arching over his back (Figure 1.1). Beneath him, her head raised, stands a female goat, her ridged horns shorter. Their hooves merge into a rock formation below. This gold ring was part of a much larger collection accumulated by Thomas Burgon while he was a merchant in the Aegean from 1809 to 1814. He proved unable to make a living, perhaps because of his taste for antiquities, and joined the British Museum, to which he also sold his collection in 1842. The ring is described rather laconically in a subsequent British Museum catalogue as ‘two wild goats; beneath them, rocks are indicated’ and assigned to the Mycenaean period (Marshall 1907: 4). It was claimed for the Cretan Bronze Age by Sir Arthur Evans, who illustrated it in his seminal work The Palace of Minos at Knossos, where he described the scene as two agrimia ‘in the act of coition’ (Evans 1935: 510). The ring has been absorbed into the modern entity known as Minoan Crete, assembled from archaeological excavations and museum collections. This book aims to retrace the place of such animal depictions among the collective of animals, humans and things of which they were once part.
Three pairs of agrimi horns obtained on Crete in 1834 by Robert Pashley, a Cambridge academic, were similarly absorbed into a modern understanding of Cretan fauna which would have differed from that of the Samariote hunter he bought them from. On his return to Cambridge, Pashley’s horns were transformed from hunting trophies to scientific specimens when his Cambridge colleague, Mr Rothman, identified them as belonging to the species *Capra aegagrus*. As Rothman noted:

it is not the bouquetin, to which however it bears considerable resemblance, but the real wild-goat, the capra aegagrus. Pallas. the supposed origin of all our domestic varieties. The horns present an anterior trentchant edge, characteristic of this species. The discovery of the aegagrus in
Crete is perhaps a fact of some zoological interest, as it is the first well-authenticated European locality of this animal. (Pashley 1837b: 271)

The sixteenth-century French naturalist Pierre Belon had visited Crete, recorded his observations of the Cretan wild goats and also obtained horns (Belon 1555: 14). He called them boucestein, using the same name as the wild goat he would have known from the French Alps, now more commonly called the bouquetin or ibex (\textit{Capra ibex}). It was this identification which Rothman was challenging, although the credit of naming the species of the Cretan wild goat went to another zoologist. Heinrich Schinz, relying largely on Belon’s account, distinguished the Cretan wild goat from other worldwide species of wild goats, labelling it \textit{Capra cretica} (Schinz 1838: 10).\footnote{Although his identification was accepted, until recently the Cretan wild goat was classified as \textit{Capra aegagrus cretica} (Schinz 1838), a wild goat subspecies.}

The classification of the Burgon ring also relied on the assembly of specimens against which it could be compared, which were assembled into a broader cultural group. It was only with the excavation of the Mycenae Shaft Graves on the Greek mainland in 1876 that rings of a similar type were found in an archaeological context, hinting that the Burgon ring might belong to the newly identified Bronze Age of Greece. By 1900 there were enough similar depictions on rings and sealstones for the German art historian Adolf Furtwängler to publish its impression alongside other examples of ‘Mycenaean’ pictures of animals. Here the ‘truth to nature’ of the goats’ movements and expressions was praised (Furtwängler 1900: 14, pl. 3). In the same year, Arthur Evans began his excavations at Knossos in Crete, at first using the name ‘Mycenaean’ to describe his Bronze Age finds, but he increasingly adopted the term ‘Minoan’ to contrast them with the culture of the mainland. He published the Burgon ring alongside other animal depictions which he attributed to the ‘finest’ Middle Minoan III style (Evans 1935: 510). For Evans this period was distinguished by a ‘naturalistic spirit’ in art, exemplified by the Burgon ring, with its finely detailed depiction of animal bodies. This view still holds, and it has recently been described by one authority as ‘an outstanding example of Minoan naturalism’ (Krzyszkowska 2005: 128).

Among the finds from the first season at Knossos were fired-clay lumps with seal impressions on them, many showing animals. Evans (1900: 69) identified these sealings as ‘a class of object never before observed in any excavation of a Mycenaean site’. These were sometimes found alongside clay tablets inscribed with written records, some in a ‘hieroglyphic’ script and others in a ‘linear’ script (Evans 1900: 29, 56). This proved that objects like the Burgon ring were used for making sealings, used as a material trace of transactions, some of which were also recorded on clay tablets. One group of tablets inscribed with the script which Evans later called ‘Linear B’ was found in a building known as the
‘Armoury’ at Knossos, excavated in 1904. Evans was unable to decipher Linear B but could recognise a pictorial sign recording wild goats’ ‘long curving horns with the characteristic protuberances’ (Evans 1935: 832) (Figure 1.2). He recalled the bow of Pandarus in the Iliad, made from the huge horns of a goat that the hero had himself hunted, and suggested that these horns had been brought by ‘individuals who had succeeded in obtaining the horns by their own prowess’ to be made into bows (Evans 1935: 835). With the decipherment of Linear B it is now apparent that the horns recorded on this tablet were collected as taxation from the area of Rethymnon, to the west of Knossos. This shows that the first records of agrimi horns were made not by zoologists but by Bronze Age administrators. Long before they were transformed into scientific objects, agrimi horns were being turned into weapons.

It was still possible to hunt agrimia on Crete when Evans was excavating at Knossos in the early twentieth century, although the introduction of modern weapons had started to affect their numbers: ‘In Crete it is now mainly confined to the White Mountains, though it is still found occasionally on Ida and, more frequently, on the Lasithi ranges East of Knossos’ (Evans 1935: 833). The food shortages resulting from subsequent conflicts, notably the Second World War, led to an increase in hunting and there were perhaps fewer than 100 agrimia remaining on the island following this period (Farmar 1952). Numbers have since recovered, but the island’s wild goats are now only found in the White Mountains of western Crete. They are largely confined to the Samaria Gorge National Park, founded in 1962, now a popular tourist trail and UNESCO
Biosphere Reserve. Hunting agrimia on the island is now illegal and as a result the practice, which has defined relations between humans and agrimia for millennia, has all but come to an end.

At the same time, debates over identification have continued as a result of recent morphological and genetic analysis showing that agrimia are likely to be descendants of domestic goats which became feral soon after they were brought to Crete by humans during the Neolithic (Shackleton 1997; Bar-Gal et al. 2002; Horwitz and Bar-Gal 2006). As a result they do not appear on the IUCN Red List of Threatened Species because they are classed there as domestic goats (*Capra hircus*) and not ‘true’ wild goats (*Capra aegagrus*) (Weinberg and Ambarli 2020). Nevertheless, attempts continue to save them not just from hunters but from contact with domestic goats because of fears about hybridisation (Spanos et al. 2008). Now often referred to as kri-kri, they have become a symbol of Crete, rarely seen in real life, but widely visible as tourist souvenirs.3

Pashley’s agrimi horns and Burgon’s gold ring have become distanced from the human-animal relations of which they were once a part. They instead became part of a modern way of understanding the world as they entered institutions such as the University of Cambridge or the British Museum and were published in accounts of travels and scholarly catalogues. The digitisation of these books, and of museum collections, has now made them instantly accessible from anywhere in the world. The horns, originally the product of a hunt, when brought to England became part of the description of the natural world of Crete, involving the collecting and listing of specimens. The gold ring has been recognised as a masterpiece of Minoan culture, expressing an appreciation of the natural world. Yet this natural world and the Minoan culture that appreciated it are products of a modern understanding of Crete. This book instead seeks to reintegrate agrimi horns and agrimi depictions into the relations between humans, animals and objects using the concepts of animal practices and animal things. Animal practices are context-specific relations between humans and animals, of which animal things are the material trace. Such animal things can endure long after the animal practice of which they were once part has disappeared and can be co-opted into new sets of relations. Now part of a display about Minoan Crete in the British Museum, the Burgon ring was once an animal thing which, at the moment it was used to make an impression in clay, created a set of material links between its user, the palace and the animals which inhabited the mountains beyond the settlements of Bronze Age Crete. This book will explore a variety of animal things from Bronze Age Crete and the animal practices that produced them. But first it is necessary to trace the development of the increasingly fragile concepts of Minoan culture and Cretan nature.
MINOAN CULTURE

Like other travellers before him, Robert Pashley paid a visit to the site of Knossos and observed ‘the few shapeless heaps of masonry, which alone recal to the remembrance of the passing traveller its ancient and bygone splendour’ (Pashley 1837a: 209). Finds there of Greek coins with the design of a labyrinth had shown that this was the location of the Greek and Roman city of Knossos and the mythical home of the Minotaur. Excavations began at the site in 1878, instigated by a local antiquarian named Minos Kalokairinos (Kopaka 1995, 2015). His discovery of a number of large storage jars in stone-built magazines attracted attention and he was soon asked to stop by his peers, who were concerned that finds from the site might be claimed by the Ottoman authorities. This was the decade in which Heinrich Schliemann had made spectacular finds at two other sites famous in Greek myth, Troy and Mycenae, and he made an unsuccessful bid to buy land at Knossos in order to dig there next (Schliemann 1878, 1880). Following his excavation at Mycenae, ‘Mycenaean’ was soon used as an adjective to describe a type of early pottery and associated finds from a number of sites across the Aegean, and rapidly became the name of a prehistoric mainland culture (Furtwängler and Loeschcke 1886). It was widely anticipated that Crete too would produce such material once the island gained its independence.

These nineteenth-century finds and publications helped structure what Arthur Evans found at Knossos and the way he interpreted his finds. Evans first came to Crete in 1894 in search of an early form of writing which he had recognised on sealstones said to come from the island (Evans 1894, 1897). He too visited Knossos, saw Kalokairinos’s excavations and succeeded in buying a share of the land on which the site was located. He was particularly interested in the building Kalokairinos had discovered because some of its stone blocks were incised with what appeared to be written signs. The political situation precluded excavation but Evans was able to travel around Crete, observing ancient remains and purchasing sealstones with further evidence for the script he was looking for (Brown 2001). He rapidly published his discoveries in a paper on the ‘Prae-Phoenician Script’ of Crete, in which he used the term ‘Minoan’ Crete as a counterpart to Mycenaean Greece (Evans 1894: 367). He regarded some of the seals as earlier than Schliemann’s finds from Mycenae, noting that: ‘We see before us the prototypes of more than one of the characteristic forms of Mycenaean times’ (Evans 1894: 372). Even before Evans had excavated at Knossos, he was already trying to establish Minoan Crete as distinct from, and antecedent to, the Mycenaean culture of the mainland.

Arthur Evans began his excavations at Knossos in 1900, by which time Crete was effectively independent from the Ottoman Empire. The local authorities,
particularly the Heraklion Syllogos led by Joseph Hazzidakis, were favourable to his purchase of the rest of the land around Knossos with a view to excavation (MacGillivray 2000b: 164–6; Brown 2001: xxiii). Almost immediately, Evans started to find the clay tablets which demonstrated the use of an early writing system at the site. He also rapidly came down on a room with a stone seat still in situ against walls painted with frescoes. In his report of the first year’s excavations Evans named this the ‘Throne-Room’ and the large building he had uncovered was called a palace. Although he toyed with the idea of a matriarchy, he argued that a king sat on the throne (Evans 1900: 42). With the restoration of the relief fresco of a young man, apparently wearing a feathered crown, Evans had soon found an image of the ruler, whom he regarded as a ‘priest-king’ (Sherratt 2000). For Evans, the Palace of Minos, as he soon called the building, was both the residence of kings and queens and a religious centre.5

With the aid of his assistant, Duncan Mackenzie, Evans came to understand the complex stratigraphy of the Kephala Mound on which the palace was located. They realised that the palace was on top of a Neolithic tell, an artificial mound built up over thousands of years of occupation. The Bronze Age levels were distinguished on the basis of changes in architecture and pottery, and divided into a number of periods termed Early, Middle and Late Minoan. Their excavations suggested that in the Early Minoan period the buildings on the summit of the mound came to coalesce around a central courtyard until a palace was formed at the start of the Middle Minoan period. This building was severely damaged by an earthquake towards the end of this period, but was rapidly rebuilt and elaborated. It was finally destroyed by fire during the Late Minoan period, preserving the Linear B tablets that were found in large numbers across the site. Distinctions within periods were charted through changes in pottery styles; each period was divided into three phases and sometimes further subphases. These phases were associated with episodes of destruction and building, dated using the pottery scheme. This tripartite scheme was predicated on evolutionary ideas of birth, florescence and decay. This scheme, promoted by Evans (1906a), was soon adopted by archaeologists across the Aegean and is still in use today (Table 1.1). Although the Neolithic sequence at Knossos was divided in the same way by Evans and Mackenzie, this has been substantially revised as a result of subsequent excavation and study, and in order to integrate it with other Cretan and Aegean sequences (Tomkins 2007: 13–21).

The easing of political tensions on Crete at the very end of the nineteenth century opened the way for the excavation of sites across the island at the same time as Evans was working at Knossos (Figure 1.3). Italian excavations at Phaistos in southern Crete also began in 1900, where Luigi Pernier and Federico Halbherr found another ‘palace’ like that at Knossos, and another

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substantial building at the nearby site of Ayia Triada two years later (Pernier and Banti 1935, 1951). In keeping with the desire to accommodate such buildings within a scheme of elite European architecture, this became known as a ‘villa’ (Halbherr 1903: 7). The Cretan Stephanos Xanthoudides worked in the same area, the southern Mesara plain, excavating a number of Early Bronze Age

<table>
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1.3. Map of Crete showing sites discussed in the text. Circle: settlement; square: palace site; diamond: other palatial centre; star: sanctuary site; (1) Alatzomouri-Pefka; (2) Archanes-Phourni; (3) Armenoi; (4) Atsipadhes; (5) Ayia Triada; (6) Chalinomouri; (7) Chania; (8) Chryssi; (9) Debla; (10) Gournia; (11) Juktas; (12) Kato Syme; (13) Knossos; (14) Kommos; (15) Kophinas; (16) Kournasa; (17) Mallia; (18) Mochlos; (19) Myrtos Fournou Kourifi; (20) Nirou Chani; (21) Palaikastro; (22) Papadiokampos; (23) Petras; (24) Petsophas; (25) Phaistos; (26) Piskokephalo; (27) Poros; (28) Perti; (29) Pseira; (30) Psychro; (31) Traostalos; (32) Tylissos; (33) Vronda/Kastro; (34) Vrysina; (35) Zakros

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tombs (Xanthoudides 1924). American archaeologists worked in the east of the island; Harriet Boyd Hawes and her assistants, Richard Seager and Edith Hall, between them excavated a number of sites, including the settlement of Gournia, from 1901 (Boyd Hawes et al. 1908). At the same time British archaeologists were exploring further east. Neither Robert Carr Bosanquet at Petras nor David Hogarth at Zakros discovered palaces, although they did find Bronze Age material (Hogarth 1901; Bosanquet 1902b); palaces were subsequently discovered by Greek archaeologists at both sites in the later twentieth century (Platon 1971; Tsipopoulou 2012). Bosanquet (1902a) also excavated at Palaikastro, where a large settlement was uncovered, although, after more than a century, a palace has not yet been found. In 1915 another palace was found at Mallia, on the north coast of Crete to the east of Knossos, by Joseph Hazzidakis, and subsequently excavated by French archaeologists (Hazzidakis 1915; Chapouthier and Charbonneaux 1928).

Although Hazzidakis and Halbherr had been exploring sites on Crete during the period of Ottoman control, the burst of excavation at the start of the twentieth century meant that these archaeologists of various nationalities were simultaneously excavating Bronze Age sites. They informed one another of their discoveries and noted similarities in architecture and pottery as they were trying to understand their sites. What emerged was an idea that these sites were all essentially part of the same culture, and the term ‘Minoan’ came to be used to describe all of them. This was the period in which Minoan Crete came into being and, as another excavator remarked 100 years later, ‘it is still the case that all modern research derives from, even if it is at times in antithesis to, the way the discoveries at the big sites were formulated in the first heady years of Cretan freedom in the early twentieth century’ (Cadogan 2000: 17). It is no accident that the way in which Minoan Crete was established as a European civilisation, with affinities to prehistoric Greece, aligned closely with the cause of Cretan freedom, and its subsequent union with Greece in 1913. The modernist vision of the Cretan past resulted from a collaboration between Western European and American archaeologists and the local scholars, led by Hazzidakis and Xanthoudides, who encouraged them to excavate across the island (Carabott 2006; Varouchakis 2017). Since many of the still-dominant theories and interpretations of Minoan Crete are derived from this period, examining their origins provides a basis for evaluating them.

Whereas other archaeologists published site reports, Arthur Evans chose to follow his preliminary reports of his excavations at Knossos with an altogether different type of publication. The Palace of Minos at Knossos appeared in four volumes between 1921 and 1935 and set out Evans’s vision of Minoan Crete intertwined with the results of his excavations. It opens with a claim that the Greek myth of Theseus and the Minotaur is unfair to ‘this early civilisation of Crete’. Evans’s excavations had shown that: ‘The ogre’s den turns out to be
a peaceful abode of priest-kings, in some respects more modern in its equipments than anything produced by classical Greece’ (Evans 1921b: 1). There has long been a feeling that the sense of modernity at Knossos owes much to Evans rebuilding the site with the help of reinforced concrete, one of the earliest uses of this material (Gere 2009). These ‘reconstitutions’, as Evans termed them, were often necessary to preserve the remains of the building, particularly on the east side where several storeys were found. And, like Evans’s interpretations, these modern additions to the palace cannot simply be dismantled and discarded. More than any other site on Crete the sometimes fanciful concrete reconstructions open a dialogue between the visitor and the Bronze Age (Duke 2007). They are a metaphor for the Minoans, a twentieth-century vision of an ancient civilisation built on the material traces of the Bronze Age.

One of the most striking features of the modern-day palace at Knossos is the replica relief painting of the charging bull in front of an olive tree at the North Entrance (Figure 1.4). Based on fresco fragments recovered from the entrance passage below, this reconstruction was nevertheless an argument cast in concrete. The bull allowed Evans to connect the labyrinthine building he had excavated with the Minotaur of Greek myth by suggesting that this relief had inspired the tale: ‘The monumental reliefs within its sea-gate – visible, it would appear, to a much later date – representing bull-catching scenes and, still more, the fresco panels with feats of the bull-ring in which girls as well as youths took part, go far to explain the myth’ (Evans 1921b: 1–2). There is no evidence that

1.4. Relief fresco of a charging bull at the North Entrance of the palace at Knossos, MMIII–LMI. Left: photograph. © Hellenic Ministry of Culture and Sports (N. 3028/2002); right: reconstruction drawing based on photograph of surviving fresco fragment (Evans Fresco Drawing P/2 c). © Ashmolean Museum, University of Oxford
a picturesque ruin of this kind continued to stand at Knossos, although the
remains of the palace did become a focus of later cult activity (Prent 2005: 514–18). But even if the concrete reconstruction and direct associations with the
Minotaur are stripped away, the stucco relief fragment of a bull’s head found in
the North Entrance passage is a remarkable part of a life-size depiction of
a charging bull, his eye bulging, his tongue hanging out. It is clear why Evans
regarded it as one of the highpoints of naturalistic art from Minoan Crete and
made it a focal point of his restorations.

From the first excavations of Bronze Age Cretan sites, animal depictions were
found in abundance in a variety of media including sealstones, stone vessels, clay
and metal figurines and frescoes (Oulié 1926; Vanschoonwinkel 1996). These
objects, and the often effusive descriptions of them in early publications, resulted
in the modern interpretation of the Minoans as ‘nature lovers’ (Starr 1984),
although Evans’s view was more nuanced than this and connected with the
evolution of Minoan art. Naturalism is a term used frequently in The Palace of
Minos at Knossos to describe both the style and the prevalence of depictions of
animals and plants. Evans placed the peak of naturalism at the end of the Middle
Minoan period, with the charging bull a fine example: ‘The brilliant naturalism
of the grand Transitional Epoch that links the Middle with the Late Minoan Age
reaches its acme in the high reliefs of painted stucco at Knossos, in the frescoes of
Hagia Triada and such works as the “harvester vase”’ (Evans 1921b: 28). This also
illustrates how Evans drew in finds from other sites to act as comparanda for
Knossos, so that The Palace of Minos at Knossos became a grand synthesis of
Minoan civilisation. Given his position at the centre of Minoan archaeology
for its first four decades, his insights are still important, but the thinking behind
them needs to be examined critically.

Yannis Hamilakis (2002b: 4) has suggested that there are ‘persistent and
popular interpretative schemes’ which archaeologists have inherited from
Evans and continue to apply to the Bronze Age of Crete. The scheme which
is most relevant here can be termed the ‘nature-loving Minoans’. Over time in
the popular – and scholarly – imagination, Minoan depictions of animals and
plants came to be seen as joyfully expressing a love of the natural world and
inextricably linked with religion (Forsdyke 1931: 29; Groenewegen–Frankfort
1951: 206–16). Those studying animal depictions in particular tend to regard
‘nature’ as a source of artistic inspiration. Evans (1921b: 447) explained some
animal depictions as manifestations of the Great Mother Goddess but this notion
has developed into the person of a nature goddess whose domain encompasses
the natural world (Immerwahr 1990: 50; Marinatos 1993: 193–200). As a result,
depictions of animals assume a primarily religious symbolism in some accounts
(Oulié 1926: 12–13; Czernohaus 1988: 156; Goodison 1989: 49–55). As Vessa-
Pekka Herva (2006a, 2006b) has convincingly argued, this symbolic approach is
both more prevalent in modern scholarship and in some ways less revealing than
a straightforward belief in the ‘nature-loving Minoans’. He suggests that the focus on symbolism hampers attempts to study human-environment relations in Bronze Age Crete by reducing animals, plants and landscape features to carriers of human meanings.

Related to the idea that the Minoans loved nature is the idea that Minoan Crete was essentially peaceful and non-violent. This continues to shape archaeological interpretations and remains widespread outside archaeology, even though it has been challenged by various authors who suggest that it arose from Evans’s pacifist and escapist fantasies, imposed on the society he was instrumental in revealing (McNeal 1973; Starr 1984; MacGillivray 2000b: 6). Two finds in the area of Knossos, made a year apart in 1979 and 1980, provided evidence of a less peaceful society: children’s bones with signs of defleshing and a skeleton on a stone platform interpreted as a human sacrifice (Wall et al. 1986; Sakellarakis and Sapouna-Sakelleraki 1997: 268–311). Further evidence for human sacrifice has subsequently been found at Chania in western Crete (Andreadaki-Vlazaki 2015). A recent reassessment has placed warfare at the heart of Bronze Age Cretan society (Molloy 2012). There has always been evidence to support this view, but it has tended to be downplayed. The ‘Harvester vase’, for instance, was initially published as depicting a military procession, before being renamed when it was reinterpreted as a religious festival (Savignoni 1903: 83–8; Forsdyke 1954). Before Arthur Evans excavated Knossos, he travelled around Crete and traced what he regarded as a military road with fortified guard houses (Evans and Myres 1895; Brown 2001: 202–7). His use of the term ‘Pax Minoica’ to describe these signs of the militaristic control of Crete and the surrounding seas by the priest-kings has subsequently been misunderstood and elaborated as an argument that Crete was inherently peaceful (Evans 1930: 6; Momigliano 2020: 65–6).

These interpretative schemes continue to flourish in the analysis of the body of material that has been established as ‘Minoan art’. The naturalistic objects highlighted by Evans continue to be regarded as part of a canon of art objects, reinforced by their reproduction in art books and guides to Minoan civilisation (Zervos 1956; Marinatos and Hirmer 1960; Higgins 1967; Hood 1978; Poursat 2008, 2014). These objects have provided inspiration for artists, writers and designers, helping to embed them further in Western culture (Boucher 2014; Momigliano 2020). Some of the most famous examples of Minoan art, such as the ‘Taureador fresco’ or the ‘Snake goddesses’, were heavily reconstructed by restorers working for Evans, and so are partly twentieth-century products (Lapatin 2002). Terms invented or adapted by Evans, such as ‘horns of consecration’ or ‘sacral knot’, continue to be used as part of an artistic vocabulary which helps to maintain the mutually reinforcing relationship between Minoan art and Minoan religion. Like Evans’s restorations, these too are twentieth-century constructs which are in need of re-evaluation.
A more explicitly theoretical approach to Aegean Bronze Age archaeology was established in the 1970s, although it left intact the relationship between nature and Minoan civilisation. Colin Renfrew (1972) introduced systems theory to explain the development of complex society in the Aegean. Drawing on the field of cultural ecology, he suggested that culture intervened between humans and nature; the more complex society became, the less direct contact people in that society had with nature. The ‘emergence of civilisation’ which gave him the title of his book was also the growing insulation from nature: ‘Civilisation is the complex artificial environment of man; it is the insulation created by man, an artefact which mediates between himself and the world of nature’ (Renfrew 1972: 13). Art belonged to one of the subsystems and was one of the means of mediation between the two. While animals, including fish, had been depicted from the Early Bronze Age, ‘these forms are seen rather schematically until the sudden passionate awareness of nature which grips Crete and the Cyclades at the very end of the middle bronze age’ (Renfrew 1972: 438). Here nature is defined in opposition to civilisation, with artists returning to nature once it was safely under control.

Despite the differences in terminology, Yannis Hamilakis has suggested that the same interpretative scheme underlies Renfrew’s application of systems theory and Evans’s evolutionary ideas expressed in the tripartite Minoan pottery classification: ‘As a result of the persistence of cultural evolutionist concepts in Minoan archaeology (combined with Europeanist, romantic myths) Minoan societies are most often viewed as a unified, homogeneous and undifferentiated whole, following a mostly unilinear, progressive development, throughout their history and geographical extent’ (Hamilakis 2002b: 11). This evolutionary scheme has tended to obscure the differences between Cretan Bronze Age sites, with archaeologists also downplaying evidence for conflict within or between them.

The twenty-first century has seen a more radical reassessment of Minoan Crete. The term ‘Minoan’ itself, which Evans championed, has been challenged because of the way it homogenises the archaeology of Bronze Age Crete, with cultural developments mainly originating from Knossos. Whether or not pottery specialists subscribe to its evolutionary implications, there is a growing debate about whether the pottery chronology developed for Knossos can usefully be applied to the rest of the island (Brogan and Hallager 2011; Macdonald and Knappett 2013). The assumption behind the Minoan pottery chronology, allowing archaeological levels to be dated, is that pottery styles change evenly across Crete. The increasing recognition of regional production of pottery styles which are not in step with developments at Knossos threatens to undermine the unified nature of Minoan pottery studies. Knossos was the largest settlement on Crete for most of the Bronze Age and
appears at times to have been the centre of political control of most of the island. As a result the undoubted similarities in pottery across Crete at various periods can be seen instead as indicating political relationships between sites (Knappett 1999a, 2002b).

The term ‘palace’ has also come under scrutiny in recent publications, while the number of this type of building has been steadily increasing as new palatial buildings, with or without central courts, have been excavated (Adams 2017: 70–140; Christakis 2020). Nicholas Platon, who excavated the palace at Zakros, used shared architectural developments as the basis for the widely used palatial chronology, which sits alongside the pottery chronology (Platon 1956). As can be seen from Table 1.1, the palatial phases do not sit neatly within broad pottery phases and so they help move away from the latter’s evolutionary associations. Although palaces have only been found at a small number of sites in central and eastern Crete, their development and relations are central to an understanding of the Cretan Bronze Age. According to Platon’s scheme, the widespread destructions and rebuildings of palaces at the end of the Old Palace or Protopalatial period marked the transition to the New Palace or Neopalatial period. Following the end of the Neopalatial period, only Knossos continued to operate in the same way, in what has become known as the ‘Final Palatial’ period (Rehak and Younger 1998). The term ‘Postpalatial’ is now reserved for the period in which there was no longer any written administration in Crete, but debates about the final destruction of Knossos and discoveries of Linear B documents at Chania make it difficult to date the transition from Palatial to Postpalatial Crete (Preston 2008).

There have been a number of suggestions for more neutral, descriptive alternatives to the term ‘palace’ which focus on the architectural layout of these buildings, such as ‘court compound’ (Driessen 2002, 2004: 80). Ilse Schoep (2002b), who prefers the term ‘court-centred building’, points out that there are a variety of different types of monumental buildings in Bronze Age Crete which have administrative functions, but which do not have a central court. One example is the villa at Ayia Triada, where clay documents and sealings were found. The term ‘villa’, implying the country retreat of those in the palace, is another term whose use has been debated (Hägg 1997). Although most archaeologists would no longer subscribe to the idea that there was a Minoan royal family moving between residences, these terms implicitly shape assumptions about the exercise of power in Bronze Age Crete.

Even the figure of the priest-king has been called into question, both materially and conceptually; reanalysis of the fragments from which the fresco was restored has shown it is not clear whether the crown belongs to a sphinx or the human figure, which itself could actually be part of a boxing or bull-leaping scene (Coulomb 1979; Niemeier 1987, 1988; Shaw 2004). Although there are other depictions of seemingly important humans holding staffs or flanked by
animals, the lack of a clear ruler iconography in Bronze Age Crete has increasingly been noted (Rehak 1995b; Driessen 2002). Some scholars have concluded that hierarchical power structures were lacking on Crete and have suggested alternatives. Discussions of heterarchies and factions, particularly for Protopalatial Crete, highlight the possibility that power was distributed between different groups, whether co-operating or competing (Hamilakis 2002a; Schoep and Knappett 2004). One response has been to use the vague term ‘elite’ to describe the presumed ruling group. Like ‘palace’, with which it is often interchangeable, it has the advantage of being generally agreed upon and understood, although the imprecision of this term has also been highlighted (Legarra Herrero 2016). The same term is used for ruling groups throughout the Bronze Age, eliding the social organisation of Prepalatial communities based around single villages with that of the later palaces and their extensive territories. Another response is to shift focus from abstract notions of power to relationships between humans and non-humans from which hierarchies arise.

The decipherment of Linear B in 1952 has meant that the social structure of the ‘Final Palace’ period, when Knossos was the only surviving palace on Crete, is better understood. Michael Ventris established that Linear B, used both on Crete and in mainland Greece, was used to write an early form of Greek (Ventris and Chadwick 1956). A large proportion of the tablets at Knossos were shown to deal with the administration of the wool industry, from the control of single flocks of sheep to the management of groups of textile workers. Some insights into political organisation emerge from the tablets; by this time a figure called a ‘wanax’, a male leader, appears to have been at the top of a hierarchical political structure. This structure emerges from the study of tablets from both Knossos and the palaces of the mainland, particularly Pylos, although those from Knossos probably date from over a century earlier. The precise date of the Knossos tablets, and hence the destruction of the palace, is a contentious subject, complicated by the more recent acceptance that some tablets belong to one or more earlier episodes of destruction (Palmer and Boardman 1963; Driessen 2008). Linear B is recognised to have developed from the as-yet-undeciphered Linear A script, used across Crete until the end of the Neopalatial period, but the two scripts were almost certainly used to represent different languages. For a time after the decipherment of Linear B it was assumed that Evans’s ideas about Minoan domination of mainland Greece had been decisively overturned, with the use of Greek at Knossos instead providing evidence for a Mycenaean invasion. Some scholars are now more cautious about assuming that a change of language at Knossos signals such an event, arguing instead that closer contact between Crete and the mainland in this period led to a process of adaptation or hybridisation (Preston 2004; Maran 2011). Linear B, adapted from Linear A to write Greek, is one example of this process.
There has also been a growing dissatisfaction in Aegean Bronze Age scholarship with the terms ‘Minoan’ and ‘Mycenaean’, with their implications of homogeneous cultural groups facing one another across the Aegean Sea. One answer has been to turn to the terms ‘Minoanisation’ and ‘Mycenaeanisation’ in order to examine the processes of culture change (Gorogianni et al. 2016). Thus Knossos and Crete become ‘Mycenaeanised’ in the Final Palace period and after, when Chania in western Crete appears to become an increasingly important centre. ‘Minoanisation’ refers particularly to the appearance of Cretan material culture forms outside Crete in the Neopalatinal period, although the Minoanisation of Crete itself should also be considered (Broodbank 2004: 51; Knappett 2016, 2018). Rather than assuming that Crete was a homogeneous entity in the Bronze Age with material culture changing simultaneously across the island, it has become increasingly important to consider the relations between sites, and the growing influence of one site in particular: Knossos.

Over a century after his excavations began, Evans’s discoveries at Knossos remain fundamental for understanding Bronze Age Crete. As a recent archaeological survey has demonstrated, it was the largest settlement on Crete for much of the Bronze Age (Whitelaw 2017; Whitelaw et al. 2018; Whitelaw 2019). Its political and cultural centrality coincides with the period Evans identified with the highpoint of naturalism in art. The following chapters will argue that these developments are linked, with changing styles and technologies of depiction connecting the palace with the animals beyond its walls. The bodies of these animals became constituents of the collective centred on Knossos, whose expansion was undoubtedly accompanied by violence against humans and non-humans. As is increasingly recognised, generalisations about ‘Minoan Crete’ obscure the relations between sites on Crete and their different histories (Christakis 2020: 106). Stereotypes involving ‘the Minoans’ have tended to imply island-wide unity and downplay the existence of conflict. Before considering an alternative approach to ‘Minoan civilisation’ it is necessary to turn to one of the concepts on which it is predicated: an antithetic natural world.

CRETAN NATURE

Cretan natural history was established in parallel with the archaeology of the island. It started with early travellers’ observations of the local wildlife and fossils (van der Geer et al. 2006: 119, 2010: 44–9). The late nineteenth century saw the arrival of more specialised scientists, including palaeontologists and zoologists, who were responsible for recategorising the remains of Cretan animals such as agrimia as scientific specimens. Among these were Felix Raulin, who listed the mammals of Crete, and Vittorio Simonelli, who
discovered the remains of fossilised elephants (Raulin 1869: 252–3; Simonelli 1897, 1908). Another nineteenth-century traveller to Crete, Captain Thomas Spratt, contributed a number of observations on the palaeontology and geology of the island, as well as its archaeology (Spratt 1865; Moore 2013: 85–144). His companion, Colonel Henry Drummond-Hay, provided a list of birds (Drummond-Hay 1865). Spratt (1865: 12) describes him as ‘a keen sportsman and a patient and earnest ornithologist’ who shot many of the birds he observed for his collection of skins. Spratt and Drummond ascended Mount Ida in 1851 to take triangulations as part of the British Admiralty’s survey of the island, with the resulting charts mapping its mountains and plains according to the spatial logic of modernity.

They were followed in 1904 by Dorothea Bate, who collected both present-day and ancient specimens over the course of a four-month expedition, allowing her to provide the first synthetic account of Crete’s fauna. Her collection included the fossilised bones and teeth of a number of extinct animals, including deer, elephants and hippo, the skins of birds and mammals and even three live rabbits (Shindler 2005: 145). She summarised her discoveries in scientific papers and a contribution to one of the first guidebooks to Crete, Aubyn Trevor-Battye’s (1913) Camping in Crete, which can be seen as the forerunner to modern field guides to the wildlife of Crete (Bate 1913). Finds at various locations at either end of the island enabled Bate to build on previous work to describe the animals of the Pleistocene, including a dwarf form of elephant and pygmy hippos (Bate 1905b, 1907). She also predicted that the shrews she had found in fossil deposits would have survived, despite not finding live specimens (Bate 1905a). The Cretan white-toothed shrew (Crocidura zimmermanni) was indeed discovered subsequently and is now regarded as the only mammal endemic to Crete, that is, part of the older Pleistocene fauna (Vigne 1999: 309). For this reason it is included in the IUCN Red List of Threatened Species, while, as noted above, the agrimi is not because wild goats are regarded as feral rather than endemic.

These specimens were assembled into the modern understanding of the natural history of Crete, with its strange Pleistocene mammals replaced by more familiar ones in the Holocene geological epoch. Debates continue over whether the disappearance of Pleistocene endemic mammals from Crete and other large Mediterranean islands at the start of the Holocene was due to climate change or human impact (Lax and Strasser 1992; Vigne 1999; Broodbank 2013: 212–18). Palaeolithic tools of at least 130,000 years old have been found in the south of Crete, showing that humans were present on Crete for at least part of the Pleistocene, but as yet there is no direct evidence for the hunting of the endemic Cretan deer, hippos or elephants by humans (Grove and Rackham 2001: 73; Strasser et al. 2011). The earliest evidence for the arrival of domesticated animals and plants on Crete in the early Holocene comes from
the Initial Neolithic levels of Knossos, settled in around 7000 BCE (Evans 1964). Here Jarman characterised the introduction of domesticated sheep, goats, pigs and cattle at the start of the Neolithic as marking ‘a complete faunal break’ between the Pleistocene and Holocene, noting that: ‘It is interesting to note that man has acted on Crete not as an agent of zoological impoverishment, as he has done in so many mainland situations, but has considerably enriched the Cretan fauna over the past eight thousand years’ (Jarman 1996: 221). Yet the arrival of these domestic animals in the Neolithic did not mark the end of species turnover, since the deliberate and accidental introduction of wild animals continued in the Bronze Age and later. In ecological terms all of these introduced species can be described as ‘exotic’; during the course of the Bronze Age other exotic animals, such as monkeys and cats, are likely to have been brought to Crete, as will be discussed in Chapter 7. At the same time, ‘zoological impoverishment’ was underway on the mainland with the gradual retreat of the lion from Greece, although it was present in the Middle East until the nineteenth century (Cheylan 1991: 231; Thomas 2014).

More recent ecological accounts stress the role of humans in Cretan natural history (Rackham and Moody 1996; Grove and Rackham 2001). Environmental historians and geographers have traced similar anthropogenic processes across the Mediterranean Basin, accompanied by modifications to the landscape including burning and forest clearance (Blondel and Aronson 1999: 45). The picture that emerges from the biogeographers and environmental historians is of a landscape which cannot be understood apart from the actions of humans, and associated animals and plants, over the last 10,000 years (Allen 2001). The environment experienced by inhabitants of the Aegean in the Bronze Age was already inscribed with the actions of others. In the words of Jacques Blondel and James Aronson (1999: 199): ‘Apart from sheer, vertical cliffs and some remote mountainous areas, there is probably no square metre of the Mediterranean that has not been directly and repeatedly manipulated, and, one might say, “redesigned” by humans.’

There is an increasing debate over whether the Holocene is now at an end and has been succeeded by the Anthropocene geological epoch. Although geologists have tended to look for a recent marker of human activity such as an increase in radioactive isotopes or plastics as a signal for the Anthropocene, some archaeologists have suggested that the decisive break is the emergence of agriculture early in the Holocene. As Bruce Smith and Melinda Zeder (2013) argue, the domestication of animals and plants and the spread of farming resulted in a remodelling of ecosystems by human societies. Mediterranean islands show this process particularly clearly, with the replacement of endemic animals and change in land use. This does not mean that these islands were somehow ‘unspoilt’ before the arrival of agriculture; Cretan plants were already adapted to fire and browsing by Pleistocene mammals, but humans brought new browsing animals...
and new plants with accompanying regimes of land clearance (Grove and Rackham 2001: 166; Rackham and Moody 1996: 115–18). Whether or not the Anthropocene stretches back that far, it is clear that the environment of Crete was fundamentally changed by the arrival of a new group of humans, animals and plants in the Neolithic.

A Cretan ‘nature’ devoid of humans and domestic animals continues to be staged by modern tourism and conservation initiatives. It is exemplified by the Samaria Gorge Biosphere Reserve which is nevertheless populated by goats introduced by humans in the Neolithic and traversed by thousands of modern-day tourists. The same ironies of conservation can be seen on Cyprus, an island with a similar ecological history to Crete, where wild sheep (mouflon) are treated differently from feral donkeys even though both were introduced to the islands by humans and now live beyond their control (Mrva-Montoya 2015).

One approach is to regard non-endemic species of animals as part of the cultural heritage of Mediterranean islands (Masseti 2009). These debates are relevant to modern conservation, resulting in modern animal practices focusing on the protection of particular animal species because of their perceived cultural or natural significance. They are ultimately the product of an imposition of a modern study of natural history on the animals and plants of Crete from the nineteenth century.

The status of agrimia on Crete encapsulates the problems of defining ‘nature’ as separate from ‘culture’ in general or ‘Minoan civilisation’ in particular. Nature and culture have been intertwined on Crete since humans brought a new way of dwelling to the island in the Neolithic, involving a particular group of animals and plants. The effects of the interactions between them and the soils and rocks of Crete continue to unfold. Attempts to classify agrimia, bound up with scientific nomenclature, as either ‘wild’, ‘feral’, ‘hybridised’ or ‘domestic’ goats oversimplify the interactions between humans and these animals on Crete, and the way that these have changed over time (Harris and Hamilakis 2014). Populations of goats, as well as various other animals, have moved in and out of human control since the Neolithic period, their relations defined at various times by herding, hunting or preservation. Environmental historians and ecologists have traced these changing relationships and their effect on the Cretan plants and soils, moving beyond simplistic distinctions between natural and cultural impacts. This opens the way to reconsidering human-animal relations in Bronze Age Crete.

**OUTLINE**

This book focuses on the changing relations between humans, animals and things in Bronze Age Crete. It draws on a relational perspective derived from the Actor Network Theory of Bruno Latour, among others, which has become
increasingly influential in archaeology (Olsen 2010; Watts 2013; Alberti 2016). Latour (1993: 4, 2005: 75) uses the term ‘collective’ to describe groups of humans and non-humans, abandoning the distinction between nature and society. It is an inclusive term which encompasses the relations between humans, animals and things; the term ‘palace’ is amenable to this definition because it is already used to describe both a building and a variety of relationships and material culture associated with it, particularly in the use of the adjective ‘palatial’. Rather than abandon an old and familiar term, the following chapters will broaden the meaning of ‘palatial’. A ‘palatial collective’ is the entity comprised of the relationships between humans, animals and things which was centred on the buildings known as ‘palaces’. The palatial collective was maintained through many different types of such relationships, some of which can be traced because objects which took part in these relationships, such as Linear B tablets, still survive.9

The modern collective spans the globe, marking a dramatic increase of scale in the number of connected entities compared to Bronze Age Crete. Topographers, naturalists and archaeologists increasingly visited Crete in the eighteenth and nineteenth centuries and their practices helped to absorb it into a modern, globalised collective. At that time, it was part of the Ottoman Empire, a collective centred on what is now Istanbul. Before that it was part of a maritime Venetian collective, traces of which can still be seen in the main harbour towns of Crete, particularly Heraklion, Rethymnon and Chania (Rackham and Moody 1996: 3–4). Over the millennia Crete has been part of much larger collectives, such as the Roman Empire, or divided into smaller collectives such as the city states of the Archaic and Classical Greek period (Whitelaw 2018: 214). Over the course of the Bronze Age, the collectives of Crete merged, first into palatial collectives and then in the Final Palace period to a multi-centred collective focused on the mainland, with centres at Knossos and perhaps another at Chania in the west. Following Latour (1993, 2004), this book seeks to go beyond the ‘modern constitution’ which divides the world into natural and cultural phenomena, and which has been applied uncritically to Bronze Age Crete. Instead it focuses on the collectives which expanded and contracted during the Bronze Age (Shapland 2013). The term ‘Minoan’ obscures this dynamic picture and so will be used only to describe the vision of Bronze Age Crete developed by Arthur Evans which developed over the course of the twentieth century and is now increasingly the subject of critical scrutiny.

It is not necessary to abandon the modern chronological framework of Bronze Age Crete defined by the rise and fall of the palaces; the distinction between Prepalatial and Neopalatial Crete is one of scale, which will be described here in terms of domestic, local and palatial collectives. Palatial collectives comprised a greater number of different types of bodies and things
than local collectives and extended over a greater geographical area. Domestic collectives, throughout the Neolithic and Bronze Age, were individual households: groups of humans, domestic animals, houses and their contents. The household continued to play an important role even as palatial collectives formed around the palaces (Driessen 2010; Relaki and Driessen 2020). Local collectives were formed of groups of interacting domestic collectives centred on discrete areas of agricultural land (Haggis 2002). In the Prepalatial period they were focused on communal tombs; they could also be described as mortuary collectives. The palatial collectives which emerged in the Protopalatial period incorporated many different domestic and local collectives, coinciding with the localised tombs going out of use and a decreasing investment in burial. The courts to the west and at the centre of the palaces instead became locations for activities such as dancing, processions or communal consumption activities. In this way the central courts of the palaces acted as a focal point for the interactions between domestic collectives (Driessen 2004). These interactions were more inclusive and communal in the Protopalatial period, becoming more hierarchical and restricted in the Neopalatial period (Driessen 2018). The Final Palace period saw Knossos becoming the only remaining palatial collective, having absorbed other palatial collectives across most of Crete. This collective was itself closely related to palatial collectives on the mainland, and was perhaps centred there rather than on the palace of Knossos. Over the course of the Bronze Age the collectives of Crete became part of wider networks of contact and exchange, resulting in the changes defined by the palatial chronological system.

Naturalism as defined by Evans is primarily a feature of palatial collectives. The agricultural activities of domestic collectives involving animals continued, but these are almost never shown in palatial visual culture. Instead a variety of animals are depicted which are involved, explicitly or not, in non-domestic animal practices. The ‘nature-loving Minoans’ are a product of a modern interpretation of the way human–animal relations were depicted by Bronze Age palatial collectives. Chapter 2 sets out the theoretical basis for this argument, starting with the famous observation by art critic John Berger that animals have disappeared from modern life, making it difficult for modern city-dwellers to understand the animal art of the past. Berger’s observation had a basis in the anthropological thinking of Claude Lévi-Strauss, whose student, Philippe Descola, provides the system of ontologies explored in this book. Descola’s (2005, 2013a) scheme of different types of ontologies helps to formalise the idea that there are different ways for humans to relate to the world based on fundamental assumptions about the similarity and difference of other inhabitants of their world. For Descola ‘naturalism’ is the ontology of modern Westerners who relate to animals as biologically similar but mentally and culturally different. This ontology results in ‘nature’ being regarded as
a separate domain from ‘culture’, an idea which is far from universal among human groups. This observation was fundamental for the work of Latour, who applied this insight in his anthropology of the moderns (Latour 1993: 91); like a number of other anthropologists, Descola’s experiences in Amazonia, particularly among the Achuar, resulted in a realisation that the nature–culture division was not relevant in many non-Western societies (Descola 1996a).

Descola classified the ontology most frequently found among small-scale Amazonian collectives as animist, in which humans and animals are fundamentally similar despite surface appearances. Shamans act as intermediaries because they are able to see through the bodily difference of animals and relate to them as fellow humans. Bronze Age Crete has been regarded as animist (and shamanic) but this ontology is more usually associated with small-scale hunter-gatherer collectives (Bird-David 2018). Another ontology Descola terms ‘analogism’, which treats the world as a series of discrete entities, and whose collectives are formed by establishing connections between them on the basis of analogies. This is the ontology of most premodern agricultural collectives, including, it will be suggested, those of Bronze Age Crete. Archaeologists have instead interpreted Bronze Age Crete in terms of their own naturalist ontology, producing a separate domain of nature which is appreciated aesthetically and worshipped. Although Bronze Age Cretean animal depictions sometimes resemble our own naturalist animal art, they arise from a different set of human–animal relations. As Hamilakis (2002b: 18–19) suggests, it is necessary to de-familiarise the Minoan past, in this case by refusing to elide Western naturalism and the naturalistic art of Bronze Age Crete.

Disengaging Western and Bronze Age naturalism necessitates a reconsideration of the role of animal depictions in Bronze Age Crete. For Descola (2010b), the role of art objects differs between ontologies. In Western naturalism, animals belong in the domain of nature but are carried across to the domain of culture through artistic representation. This enforces the separation of art objects, as cultural products, from animals, as members of the natural world. A particular style of depiction is associated with this naturalist ontology; mathematical concepts were employed to create the illusionary space of perspective drawing. There have been a number of reactions against the supposed universality of Western realism in art, some of which are explored in Chapter 2 because they open up the way to considering animal depictions in different ontologies. For James J. Gibson (1979), depictions were only ever an incomplete substitute for the perception of real-world forms. This relational approach renders images as part of the process of interaction between humans and animals, providing information about their properties, which he termed affordances. Affordances are not fixed properties but rather emerge in interaction between different entities. As a result, humans do not simply impose meaning on animals, rendering them symbols of human concerns, but the affordances of animals in a given situation help shape human relations with them. Depictions...
provided information about animals in Bronze Age Crete; the detailed depiction of animal bodies and behaviour often described as ‘naturalistic’ helped to reveal their affordances.

Gibson’s affordance theory is consistent with a broadly pragmatic account, which shifts the focus from what depictions represent to what they do. Working within a semiotic approach developed by C. S. Peirce, a number of scholars have examined how artworks do not simply represent the world, but act within it. Instead of symbols, with a conventional relationship with what they depict, artworks can be described as indexes, establishing connections with both their maker and what they depict (Sonesson 1994: 313–23; Gell 1998: 13). David Summers (2003: 687) uses the word ‘trace’ to describe artworks which have a physical connection with what they depict. This term does not just apply to artworks; all seal impressions are traces of the seals which produced them. More generally, he and other scholars have suggested that artworks make absent bodies and things present, so that they are substitutes or ‘real metaphors’ (Summers 2003; Belting 2005). This book focuses on animal traces and depictions, for which the term ‘animal thing’, from human–animal studies, will be used (Fudge 2012; Poliquin 2012). Animal things are traces when they retain a connection with the animal, such as bucrania (cattle skulls), or metaphors when they stand in for animals, such as stone rhyta in the shape of cattle heads. In order to distance this account from the modern concept of Minoan art, terms such as depictions and animal things will be used in this book. Although now regarded as an artwork, the bull’s-head rhyton from the Little Palace at Knossos acted more like a decapitated head when used in Bronze Age Crete, with its rock-crystal eyes glinting and liquid spewing out of its mouth.

Affordances emerge from an interaction between two entities but they are also shaped by context. A charging bull affords injury to any human he catches in his horns, but in Bronze Age Crete this affordance became part of the dangerous activity of bull-leaping. Such activities will be described as animal practices, which are context–specific and arise from the human–animal relations of particular groups. The concept of animal practices, also from the interdisciplinary field of human–animal studies, complements the affordance concept by focusing on the relations between humans and non-human animals in a particular time and place (Elder et al. 1998). Wall paintings at Knossos helped to shape the affordances of cattle in Bronze Age Crete by showing them as animals to be leapt over; these wall paintings had different affordances from metal rings showing bull-leaping, which could be stamped in clay, preserving an impression of the leap. These depictions, which indexed bull-leaping, and made this animal practice present in various different contexts, can be described as animal things.

This book is intended as a contribution to human–animal studies focusing on the human–animal relations of a prehistoric society, outlined in Chapters 3–7.
Whereas Chapter 2 focuses on the diachronic human-animal relationship of looking, the following chapters outline the animal practices of Bronze Age Crete, starting with ‘herding’. The lack of historical records makes it difficult to identify particular animals of Bronze Age Crete, with the notable exception of the cattle named, or perhaps simply described, on Linear B tablets from Knossos discussed in Chapter 3. Instead, animal remains and animal depictions contribute to an understanding of the animal practices of Bronze Age Crete, particularly relating to the palace. The palatial collective consisted of a variety of non-human animals, humans and things. As the Linear B tablets show, it was also defined by an unequal relationship between these elements; both the named oxen, who were loaned out for ploughing, and the sheep, shepherds and textile workers also detailed on the tablets were under the control of humans at the centre of the palatial collective. Despite the modern stereotype of the nature-loving Minoans, the human-animal relations of Bronze Age Crete do not provide a utopian contrast to those of the present. Nevertheless, the importance of cattle and sheep to the establishment and maintenance of the palatial collective is highlighted. Just before the palatial collective of Knossos fell apart, a significant part of it was composed of sheep, wool, human shepherds, dyers and textile workers and the clay things which traced the manufacture of textiles. Hundreds of years before, the palaces emerged partly as a means to co-ordinate the domestic production of textiles for overseas export.

Animal practices involving domestic animals are very rarely shown in Bronze Age Cretan material culture. Herding sheep, goats and cattle was an animal practice shown in some Prepalatial and Protopalatial animal depictions but the emergence of the Cretan Hieroglyphic script and associated animal depictions on sealstones signals a shift in human-animal relations. Animal heads of domesticates on sealstones and on clay documents were related to provisioning of communal consumption events. The deposition of animal figurines at peak sanctuaries, ritual spaces at high points in the landscape, helped to define the territories of local collectives. Two animal practices involving cattle, hunting and bull-leaping, are depicted from the start of the Neopalatial period. These are indicators of the expansion of the palatial collective of Knossos, which came to be the only remaining palace following the widespread destructions at the end of this period. It is argued that depictions of cattle-hunting relate to the raiding of the herds of other collectives by Knossos, most likely as part of a wider military campaign. Bull-leaping is an animal practice which came to define the territorial control of Crete by the Knossos palatial collective; cattle would have been rounded up and brought to Knossos or its outposts from across the island for stock-taking; various bull games provided an opportunity for the young men of the collective to show their physical prowess. The horn, hides and meat of butchered cattle were important markers of these activities and they are widely depicted. There are no depictions of cattle sacrifice until
later because it was the living cattle which defined the territorial extent of Knossos; the depiction of cattle heads and the deposition of cattle skulls commemorated the consumption, and perhaps also the hunting, of these important animals.

Chapter 4, ‘Butchering’, examines animal remains both in terms of traditional zooarchaeological approaches which identify them to genus or species and as animal things. Although some zooarchaeologists have discussed animal practices such as ploughing (Isaakidou 2008), traditional zooarchaeological reports consist of species lists and counts of specimens from which the diet of the human members of the collective can be inferred. When confronted with animal bones which do not appear to be economically useful, either less-meaty body parts like skulls or whole skeletons, archaeologists have tended to regard these as ritual deposits resulting from the animal practice of sacrifice. This practice was important in later Greece but is not depicted on Crete until the Final Palace period. By regarding animal skulls as trophies rather than symbols of sacrifice, the focus shifts to the significance of the animal remains. The importance of animal heads in earlier palatial material culture, including naturalistic animal-head rhyta, points instead to displayed heads being an index of consumption events. Whereas animal heads would have soon rotted to become skulls, naturalistic animal-head rhyta, used for pouring wine, preserved the animal head as it appeared in life; these animal things could be used repeatedly in communal gatherings. In Bronze Age Crete, animal heads were more likely to have been animal things related to the provision and consumption of animals. Such consumption events were central to the emergence and maintenance of the palatial collectives.

Whereas bull-leaping was depicted at the centre of the palatial collective on the walls of the Knossos palace, the animal things most closely related to the animal practice of hunting were the seals worn and used by individual human members of the collective. Chapter 5 focuses on these miniature animal depictions which have frequently been seen by archaeologists in terms of Western naturalism, encapsulated by the term ‘animal studies’. Among the most finely crafted seals are gold rings, such as the so-called Burgon ring. Instead of exercises in artistic skill and observation, they are argued to be tokens of membership of the palatial collective. When impressed on clay sealings, sometimes used to carry messages across the island, these rings showed how wild animal bodies, among many other entities, had become part of the collective in the Neopalatial period. The closely observed detail, often described as naturalistic, acted to demonstrate knowledge of the hunted animal and its behaviour. The hunting of animals has happened throughout the prehistory and history of Crete but only the hunting of certain animals is shown on sealstones. Hares, whose bones survive from Bronze Age contexts, are never depicted but wild goats are. It is suggested that the wall paintings in
palatial buildings, particularly the Ayia Triada ‘Park fresco’ and other depictions crafted in palatial workshops, such as metal rings, show the ideological basis, and also the reason, for the absorption of goat-hunting in particular. Upland commodities, particularly crocuses, and also goat horns, were important to the palatial collectives and the animal practice of hunting had defined interactions with the uplands since the Neolithic period. Depictions of elaborately dressed women wearing dyed textiles interacting with wild goats, and sometimes boar, established the involvement of the palatial collectives with this animal practice, and by extension the mountain terrain. It is not necessary to enter into the debate about whether these women are deities or priestesses, or the content of the Minoan belief system, in order to understand the way in which the palatial collective established control over the uplands of Crete.

Turning to fishing in Chapter 6, one of the most famous aspects of Minoan artistic production is the ‘Marine’ style, showing a variety of marine creatures, particularly those with writhing tentacles. Its naturalism or otherwise has been debated since the late nineteenth century since it captures the movement of underwater bodies without always depicting them accurately, at least by modern standards. Arthur Evans suggested that the Marine style of Late Minoan IB pottery could be traced back to the imitation of marine forms in earlier pottery, which was sometimes directly decorated using shells or sponges, a process Evans termed ‘nature-moulding’ or ‘nature-printing’. Importantly this draws attention to the indexicality of these depictions, the direct contact with marine forms. These underwater forms were brought into the palatial collective using these animal things in order to demonstrate the palatial collective’s extension over the sea. Fishing and shellfish-gathering, like hunting, has always been a subsistence activity on Crete. The Marine style instead focused on underwater forms (such as triton shells and octopuses) encountered by diving, as well as marine animals (such as argonauts, dolphins and flying fish) which were encountered while sailing across the sea. An analogy with hunting and upland Crete can be made; like crocuses, purple shells were an important source of dye for the textile industry and so the material culture of the palatial collective established control over the underwater world by incorporating these distinctive marine bodies. Textiles were an important commodity produced by the palatial collectives for overseas trade, in return for which they received raw materials such as metals. The deposit known as the Temple Repositories at Knossos includes both painted shells and faience marine forms, as well as depictions of crocuses, agrimia and women wearing elaborate textiles, including the so-called ‘Snake goddesses’; rather than interpret this deposit solely in terms of religious beliefs, it is possible to see how it connects the parts of the world which the palatial collective brought together at its centre.
The overseas world, increasingly connected to Crete by trade links over the course of the Bronze Age, was the source of new animal bodies collected in Chapter 7. Many of these first arrived as depictions on small portable objects; these bodies were incorporated into local and then palatial collectives using various types of material culture. Some bodies, like the cat, horse and monkey, became physically part of the palatial collective alongside their depiction when they arrived from overseas. Few physical traces of their presence in the form of animal remains have survived from the Bronze Age – none so far, in the case of monkeys – but depictions help show when they arrived and also the place they were given in the collective. Monkeys, for instance, became associated with the areas of the landscape the palatial collective extended across, shown on frescoes at Knossos both picking crocuses and stealing birds’ eggs in a rocky landscape. Other animals became part of the animal practice of hunting as the palatial collective of Knossos started to extend its connections to the mainland where lions and deer could be hunted; their pelts and remains were brought back to Crete as animal things, and there is evidence that live deer were brought to Crete to be hunted and consumed in the Neopalatial period. The interaction between Crete, the mainland and the Cyclades in this period resulted in what has been termed the ‘Aegean animal style’, which showed animal attack scenes. Through the movement of luxury objects and fresco painters this was absorbed into the ‘International style’ of the Late Bronze Age Eastern Mediterranean as Crete became part of a wider Aegean palatial collective, interacting with others overseas.

From the point of view of a naturalist ontology, the extent of the natural world can be defined as the animals, plants and other life forms which inhabit the planet. This excludes monsters such as griffins which do not exist and so, as products of the human imagination, belong to the domain of culture. As will be suggested in Chapter 7, regarding the griffin as a supernatural creature which is therefore different from existent animals such as the horse and lion is not a productive way to understand Bronze Age Crete. Like lions, griffins are shown hunting deer on Minoan sealstones; like horses (and wild goats), griffins are shown pulling chariots. These depictions show how the griffin was incorporated into the palatial collective by analogy with other exotic forms. Lions appeared on Cretan sealstones in the Prepalatial period but over the course of the Palatial period the increasingly detailed depictions of lions suggest that encounters with them had resulted in greater knowledge of their affordances. Depictions of griffins follow the same path, but their bodies always remained out of reach. Whereas horses could actually be seen on Crete in the Final Palace period pulling the chariots of the important human members of the palatial collective, griffins could be seen on the walls of the Throne Room at Knossos. Existing at the furthest edge of the palatial collective, griffins became the ideal
analogy for the extent of the collective centred on the human who sat on the throne.

Instead of a ruler-centred iconography in Bronze Age Crete there was an animal-centred iconography. As will be argued in this book, animal practices were an important part of the definition of palatial collectives, resulting in a wide variety of animal things. In Chapter 8, about the phenomenon Evans termed ‘the naturalistic spirit’, the changing style of animal depictions will be linked with the changing importance of animal practices. The peak of naturalism in style, around the start of the Neopalatial period, was associated with the growing influence of the palatial collective of Knossos over most of the island of Crete. Animal things were a way of capturing and disseminating the animal practices of this collective, which took place in different parts of the landscape: the cattle-grazing lowlands, the uplands inhabited by wild goats and the underwater world of octopuses and squid. Animal practices such as agriculture or coastal fishing were almost never shown. In order to maintain itself, particularly through participation in overseas trade, the Knossos palatial collective needed to extend into the productive parts of the landscape, particularly those involved in textile manufacture. It was not the authority of individual human rulers, wielding power across Crete, that secured these resources; instead these palatial animal practices helped to integrate these areas of Crete into the palatial collective at Knossos. The right to hunt or to round up cattle was reinforced by finely crafted animal things, but also almost certainly backed up by violence. As the palatial collective of Knossos was itself absorbed by those of the mainland, these animal things became more stylised and conventional, also crossing the sea to become part of the iconography of the mainland palatial collectives. By this time they had become symbols of the palace, barely related to the animal practices they arose from. The period of ‘brilliant naturalism’ noted by Arthur Evans was short-lived but cast a long shadow; this phenomenon is central to the understanding of the relationships between humans, animals and things in Bronze Age Crete.