DISSENT WITH MODIFICATION

Human Origins, Palaeolithic Archaeology and Evolutionary Anthropology in Britain 1859–1901

John McNabb

Archaeopress

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Cover image

Mesolithic/later Prehistoric tool, with a drawing by W.G. Smith sent to Benjamin Harrison in October 1895. Courtesy of the Maidstone Museum and Bentlif Art Gallery.

Dedicated to Helena, William, Emily, and Gem Thanks for everything

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PREFACE AND ACKNOWLEDGMENTS

This book has had a long evolution and I describe something of its history in the next chapter. It resulted in eight sets of anonymous comments from peer review. Six were unambiguously supportive, one guardedly so, and one negative. The latter I think from an historian of science who would have preferred me to approach the subject as an historian. However I am an archaeologist, and I have followed the accepted pattern for writing about the history of archaeology adopted by my peers and predecessors. I make no apologies for that.

The first publisher I approached offered a contract on the basis of the comments made by two referees. However, because of their feedback and the advice I had received from colleagues who kindly agreed to read the manuscript, I decided to shift the focus of the book. I would particularly like to thank Professor Mary Orr of the Department of Modern Languages at Southampton University for her extremely helpful advice at this stage of the book's history. So the first half of the book now became the last part of a new book. The next six reviews covered the new sections. I'd like to thank all eight of the anonymous peer reviewers. I thought long and hard about everything you said, and a great many of your comments and critiques are included in the text. I will not refer to these again (as, I believe, their positive influence has made it a better book). I will however briefly touch upon some of the comments I thought were very good, but for various reasons I did not take on board.

Inevitably with so many reviewers there were contradictory views, and negotiating my way around these was sometimes challenging. My writing style was often commented on. Most were more than happy with it, a few less so, and one reviewer hated it. The style of writing I have adopted was specifically tailored to the aims of the work. I wanted to write a book that incorporated original research with synthesis and overview, and at the same time presented original perspectives derived from my overall arrangement of the material. I wanted to target third year undergraduates, Masters students, and PhDs in the earlier phases of their research, while at the same time writing something that would be accessible to the non-academic reader who wanted to know more about the subject. I also wanted to write a book for professional colleagues covering the whole period 1859-1901, which has not been done before. The closest archaeological work to this one is the excellent Men Among the Mammoths by van Riper, which stops in the mid-1870s. So I adopted this style deliberately. One of the reviewers disliked the mixing of the first and third person in the text, and another suggested my comments and opinions on particular issues in the first person should be included as textboxes. After much thought I stuck to my guns; in the end one's writing style is a very personal thing. This book has the same approach and target audience as I adopted for my first book *The British Lower Palaeolithic; Stones in Contention*, published by Routledge. I will leave the reader to decide whether THIS ONE has been successful.

One very interesting critique that emerged from the review process focused on my source material. One reviewer, I presume a historian, wanted to know why I wasn't using original letters and manuscripts, as these represented primary sources. I have used, almost exclusively, the original publications from the middle and late Victorian period. For me, as an archaeologist, this is primary data. These published articles are the words and ideas that the people of that time contributed toward the development of debates. While published sources may not reveal someone's innermost thoughts, they nonetheless are the foundation upon which dialogue is based. The written word was what people were willing to be judged by. Although I have used some letters and primary archives, I maintain that published material is a primary resource. Arising from this, two reviewers would have liked to see the book set more within the realm of modern critical scholarship. They asked why I had not included modern explanations for the questions that the Victorians grappled with. Again I thought about this a lot, but in the end I stuck to my original aim. This was to write a history of the early phases of Palaeolithic archaeology and human origins research from the written perspectives of the original protagonists.

Several reviewers felt it was critical to discuss the pre-1859 developments in humanism at the beginning of the book, particularly those in Europe and post-Revolutionary France. After deliberation I decided against this. Not because I disputed the significance of these contributions to what happened after 1859, but rather because I felt the story I wanted to engage with started with the paradigm forming year of 1859 – with the publication of *Origin of Species* and the equally influential but less well known 'Antiquity of Man Debate'. From this point on, time depth, a Prehistoric ancestry and a naturalistic origin for our species, suffused scientific thought to an extent it had not done so before. Excellent introductions to the European pre-1859 period are provided by Rudwick (2007, 2008). I suggest Desmond (1982) for the British material.

Finally on the subject of peer review one referee wanted to see critique developed on the engagement of the Victorian public with the human origins debate, and with origins and ancestry in general. I agree this would be a fascinating topic for further research. Questions about where and in what form the public got its information emerged quite unexpectedly from my research. But that would be a whole new book. Within the aims I set out for this book I decided to identify and describe what those channels of information were. Analysing and critiquing their content will be a research project for the future. Having said this, in the chapters on Victorian science fiction, I have begun to explore this in a little more detail.

A great many people helped in the writing of this book in one way or another. In particular I would like to thank my partner Helena for being supportive throughout the process, and understanding that on a lot of sunny days my mind was elsewhere. Without her forbearance this book would never have been written. I would like to express my appreciation to the staff and

the directors of the Maidstone Museum and Bentlif Art Gallery for access to the Benjamin Harrison archives. I would also like to express a huge debt of gratitude to Angela Muthana an assistant curator at the museum whose patient researches into Harrison were a constant source of inspiration. In the British Museum Debbie Buck was, as always, brilliant, and I would like to express my gratitude to all the staff of the Department of Prehistory and Europe at the BM outstation at Franks House for facilitating access to their Harrison archive and for allowing me to photograph artefacts. Thanks to Nick Ashton for photographs and copyright permissions. My thanks go to Rob Kruszynski and the staff of the Palaeontology Department at the Natural History Museum for help in accessing and photographing more artefacts. I am especially grateful to the staff of the Hartley Library at Southampton, in particular Pam Wake, and in inter-library loans, Karin Jazosch whose refusal to give up on finding a resource located a whole journal run on the internet that otherwise I would never have been able to consult. I am especially grateful to Dr S. McLean for reading drafts of the science fiction chapters at short notice.

All of the editors in the various publishing houses I contacted were helpful and very supportive, none more so than the one publisher who, despite five positive reviews, could not accept the book because market conditions had sent his company down a different route in the publishing world. I felt his anguish; his very helpful advice was much appreciated. I would also like to express my deep gratitude to all at Archaeopress for taking the book on, and their patience during its production. You guys are just brilliant. I am especially grateful to Dr John de Vos at Netherlands Centre for Biodiversity Naturalis, Leiden, for a fascinating afternoon looking at the Dubois collection and for allowing me to photograph the reconstruction that Dubois made of *Pithecanthropus*; also for pointing out the significance of the von Max painting. Frances Clarke did a great job in editing and proof reading. I am also very grateful to Penny Copeland and to Dr Susan Hackenbeck for their imaginations and magic pens. Thanks.

This would have been a much better book had my old mentor Roger Jacobi not died prematurely. Somehow I would have persuaded him to read a draft. His copious marginalia, written in his distinctive blocky handwriting, would have improved the text considerably. He would have found all the mistakes I have missed, delivered his trademark admonishing sniff, and then encouraged me to have another go but to pay more attention to the details next time. He had been an enthusiastic eolith hunter when he was yong and we planned to have a long chat in the pub about it all. We put it off because there was plenty of time, and then suddenly there was no time left. You are much missed.

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Dr Francis Wenban-Smith

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- Harrison's sketch cross-section of the Darent Valley is reproduced courtesy of the Trustees of the Department of Prehistory and Europe, British Museum. From Harrison archive, Franks House archive.

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Figure 4.2. Handaxes from Flower 1872. The two implements on the left hand side of the figure are from Thetford and the gravels of the Little Ouse river. The two implements on the right hand side of the figure are from St Acheul gravels in northern France. The upper two are pointed forms and the lower two are ovates.

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Figure 4.4. The top image shows the cross section of the Cro-Magnon cave as given by Boyd Dawkins in 1874 and 1880. Letters B, D, F, H, and J are accumulations of debris representing occupation horizons. They contain charcoal fragments, flint implements and broken bones. The human bones are represented by lower case letters b and d. The letter a marked the tusk of an elephant, and the bedrock was at A. The crack in the rock shelter's overhang is clearly visible. The lower image is the rock shelter today with the broken face of the overhang very clear.

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Figure 5.3. After Lyell 1863 figure 27. His original caption and explanation reads as follows. 'Diagram to illustrate the general succession of the strata in the Norfolk cliffs extending several miles N.W. and S.E. of Cromer. A. Site of Cromer jetty; 1. Upper Chalk with flints in regular stratification; 2. Norwich Crag, rising from low water at Cromer, to the top of the cliffs at Weybourne, seven miles distant; 3. 'Forest Bed' with stumps of trees in situ and remains of Elephas meridionalis, Rhinoceros Etruscus, &c. This bed increases in depth and thickness eastward. No crag (No. 2) known east of Cromer Jetty; 3' Fluvio-marine series. At Cromer and eastward with abundant lignite beds and mammalian remains, and with cones of the Scotch and spruce firs and wood. At Runton, north-west of Cromer, expanding into a thick freshwater deposit, with overlying marine strata, elsewhere consisting of alternating sands and clays, tranquilly deposited, some with marine, others with freshwater shells; 4. Boulder clay of glacial period with far transported erratics, some of them polished and scratched, twenty to eighty feet in thickness; 5. Contorted drift; 6. Superficial gravel and sand with covering of vegetable soil.'

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JOURNEYS IN TIME AND SPACE Introduction and Aims of the Book

A man sits alone on a hill side. It is evening and the shadows are lengthening. All around him there are ominous rustlings in the undergrowth, as if creatures are stirring emboldened by the coming night. But he pays them no heed. He stares morosely out over a wide valley. In the distance a great river, burnished like polished metal by the setting sun, flows into an unknown distance. The Time Traveller (or so it will be convenient for us to call him) is consumed by melancholy. He has travelled more than eight hundred thousand years into the future. The scene before him is London, but not the dirty frenetic late-Victorian city of 1895 that he knows so well; nothing could be further from it. In its place is a landscaped garden-metropolis of great palaces, obelisks, and open parks. But this future London is quiet and all but deserted. The great buildings lie in ruins and they have been that way for a long time. What has become of the relentless press of humanity that inhabited the capital of the British Empire, the great super-power of the Victorian age? The London of 1895 was the concrete realization of Victorian optimism; build bigger, aim higher, push the envelope to its very limit - and then push a little more. But this future city is inhabited by a small child-like race. He cannot believe them capable of building anything. They seem to lack even that most basic Victorian quality, curiosity. They idle away their time in frivolous play and do nothing else.

The Time Traveller has met the Eloi. He sits on the top of his hill on a bench of strange yellow metal as the twilight gathers. Gloomily he ponders the evolutionary destiny of the human race. Night falls and soon he will meet the Morlocks.

A scene from H.G. Wells's *The Time Traveller* (2005) first published in book form in 1895, may seem like an odd place to begin a study of Palaeolithic archaeology between the time of Charles Darwin's *Origin of Species*, and the death of Queen Victoria. Actually it is very appropriate. Wells's story is about human evolution, or rather the fear that Victorians had about where evolution was taking our species. By the time that Wells wrote this story most people accepted a 'deep' ancestry for humanity, and one that was rooted in the natural world. Humans could no longer consider themselves as products of special creation. By the middle 1890s embryology and microscopy were beginning to reveal how new life was created, and explore the mysteries of heredity. But with new knowledge came new uncertainties. The Victorian man in the London street intuitively felt he was the pinnacle of the evolutionary process, as was his civilization. But was he? Some scientists claimed otherwise.

Were his comfortable certainties illusory; was his mastery of the Earth not guaranteed after all? Even more worryingly, could the process of evolutionary development actually be reversed? There were also scientists who claimed this could happen. Whether the Morlocks were an atavism, or a completely new evolutionary direction, they were nevertheless a prescient metaphor for Victorian fears about the future. What would have shocked the readers of the *Time Machine* was not the idea of the Morlocks themselves, but that they were an evolutionary possibility.

My original aim in writing this book was to chronicle the story of a very specific debate in human evolutionary studies that took place between the late 1880s and the 1930s. This was the eolith debate (McNabb, 2009; Ellen and Muthana, 2010). Eoliths were small natural stones whose shape and edges suggested to our earliest ancestors their use as tools, either as they were, or with a small amount of chipping to the stone's edge, a process called retouch. These were the most primitive of tools, thought to date to the very beginning of human cultural evolution, and therefore suited to our very earliest ancestors.

The more I researched this topic the more I realised that its explanation was rooted in a number of research questions which today we look at as separate subjects. Yet to the Victorian researcher these were all intimately connected with each other. The links were as follows; a view of time as being inherently linear (at least when viewed from a scale of events that made it seem so), evolutionary change as a process; that process being one of increasing improvement and sophistication over time; and the belief that passing time *should* therefore show progressive development. To the ordinary Victorian these were certainties and they were important; they were at the root of social confidence in the Victorian world view; they had replaced the teleological belief in a special creation. These certainties allowed humans to feel they were still on top of the tree, even if now it was an evolutionary tree and not a divine one. So a book about a forgotten Palaeolithic debate became a book that was just as much about Morlocks, stone tools, racial difference, and the Anthropological Society of London.

Today, the questions surrounding race and the reason why some humans have different skin colours, types of hair or differently shaped eyes, is the preserve of science and DNA. The same goes for the study of heredity, and why we sometimes resemble our parents and grandparents, but are not exact copies of them. Today we draw generalised distinctions between race and ethnicity (always keeping clearly focused the fact that such differences are not statements about the relative worth of one group of humans in comparison with another). The former is often thought of as skin colour and where in the world you were born. The latter is sometimes meant to imply differences between people who share the same skin colour but come from different regions in the same area or country. There is no real connection in modern scholarship between race and Palaeolithic stone tools. Race is not linked to geology, nor is geology often connected with questions of human sterility or inter-racial marriages. For the Victorians this was not the case. All of these were aspects of the same big question. It was not possible to parse one aspect and examine it without it impacting on all the rest.

For the Victorians the question was this. Why was human physical appearance so varied, and why did some groups (races in their terms) appear to be *always* more advanced than others? For many this question highlighted an even more important one. Was the apparent superiority of the European white race a given natural law that would always be guaranteed? Today science has answered that question from a variety of different standpoints, not the least of them genetic studies. All humans are the same, and the physical differences between us are very recent in evolutionary terms. No one group of people can use physical and mental evolution to claim superiority over anyone else. Since DNA and palaeontology show we are all brothers and sisters, and relative newcomers into the world as a species, the physical differences between us should be causes for wonder and delight, something to be celebrated.

But for the Victorians of course this was different. The more I researched eoliths and the background to that debate, the more I felt I needed to understand this huge question of the interconnectedness of the parts in Victorian origins debates. The book I ended up writing was very different from the one I started out to write. I was genuinely surprised at many of the directions that the research took me.

My themes for this book then are as follows:

- apart from interconnectivity itself, I look at the development of Palaeolithic archaeology, its relationship with the study of human physical anthropology in Britain and, to a much lesser extent, on the Continent
- · the links between these and the study of race and racial origins
- the question of human origins itself
- the link with geological developments in climate and glacial studies
- the public's perception of the whole origins question
- the public's relationship with race
- how the public got its information on origins related questions and in what form this was served up to them

I end up looking at the opening phase of the eolith debate (1889–1895/1896) as a logical extension of developments in a number of these areas. Victorian science fiction, or at least some of it, discussed at the end of the book, is another aspect of this.

Before going on, it is important to make clear a number of questions concerning Prehistoric chronology, particularly in the relationship between how the Victorians understood Prehistoric time and our appreciation of it today.

Chronology: Then and Now

It would seem self-evident that the Victorian understanding of the world's geological history was not as detailed or as nuanced as ours is today. Having said that, much of the basic sequence had been worked out by 1859 and still underpins contemporary understanding of the different geological periods in the history of the Earth. The left hand side of Table 1.1 presents the geological periods and their subdivisions as we understand them now. It also shows the dating, in years, for each of these sub-divisions. These dates have been established by a number of different lines of evidence, including radiometric dating techniques applied to the rocks themselves, and the relationship those rocks have to changes in the direction of the Earth's magnetic field (palaeomagnetism). Such precision would have astonished Victorian scientists, as would the duration of Earth's history.

Although there have been name changes, the debt that the modern sequence owes to Victorian (and earlier) science is clear. In their understanding of the post-Cambrian period, three phases of broad geological time could be discerned; these were the Primary, Secondary, and Tertiary periods. Originally these were defined on the stratigraphic super-positioning of certain types of rock (Rudwick, 1992), but by the middle of the nineteenth century they had also become associated with different groups of fossils and so with the Table 1.1. Chronostratigraphic table of the Earth's geological history. The left hand side shows the modern interpretation. The two sections to the right of this show Victorian interpretations. That on the far right represents a generalised middle and late Victorian outlook.

Modern geological timescale				Lyell 1863		Generalised late Victorian stratigraphic column		
Eon	Era	Period	Epoch	Begins millions of years ago	Roughly equivalent to modern era	Roughly equivalent to modern epoch	Roughly equivalent to modern era	Roughly equivalent to modern epoch
Phanerozoic	Cenozoic	Quaternary	Holocene	0.011	Post Tertiary	Recent		Recent
			Pleistocene	2.0/1.75		Post-Pliocene		Pleistocene
		Neogene	Pliocene Miocene	5 24	Tertiary	Newer and Older Pliocene	Tertiary	Pliocene
		Palaeogene	Oligocene	34		Upper and Lower Miocene		Miocene
			Eocene	55		Upper,		Eocene
			Palaeocene	65		Middle, Lower Eocene		
	Mesozoic Palaeozoic		Cretaceous	142	Undifferentiated	Divisions of	Secondary and	Further
			Jurassic	206	Secondary and	the	Primary	divisions of
			Triassic	248	Primary	Cretaceous,	stratigraphic	lower strata
			Permian	290	stratigraphic	Jurassic and	divisions	
			Carboniferous	354	divisions	lower strata.		
			Devonian	417				
			Silurian	443				
			Ordovician	495				
			Cambrian	545				
Pre- Cambrian Proterozoic				2500				
Pre-				4570				
Cambrian Archaean								

progress of life up the stratigraphic column. There was no overall agreement, but the following characterisation would at least have been recognizable to many students of the time. The Primary (today's Cambrian to Permian, although not all these sub-periods were recognised by the Victorians) was the first phase of geological history in which the Earth was formed, cooled, and a surface crust finally developed; in time this was covered by oceans and by land masses. It was a common belief that the earth had begun as a molten sphere in space and was cooling from the outer surface inwards toward the core.

The various subdivisions of the Primary saw the developments of plants, molluscs, and forests; there were trilobites and fish in the oceans. For some Victorians there were more complicated land animals in the later subdivisions of the Primary. The Secondary period (very roughly the equivalent of the modern term Mesozoic, although there has been some shifting of the Primary/Secondary boundary in terms of which subdivisions fall within which era in the modern sequence) was the period of the great terrestrial and marine reptiles. This was the age of the dinosaurs. The Tertiary saw the emergence of the mammals, though by the 1830s it was clear that a few smaller mammal species were present in some of the sub-divisions of the Secondary. Later investigators added a Quaternary at the top of the sequence to accommodate the modern fauna and humans. It was Charles Lyell (see Chapter 2) who re-named the subdivisions of the Tertiary as Eocene, Miocene, and Pliocene, based on groupings of snail species (Lyell, 1863a; Gould, 1987). He also coined the term Pleistocene, but applied it to his Newer Pliocene sub-division. Other researchers subsequently applied it to his post-Pliocene period, and the designation eventually stuck. This is also the modern usage of the label Pleistocene. Much of this book will be about the archaeology and geology of this Pleistocene period.

The middle and right hand columns of Table 1.1 show two variations on the Victorian understanding of the sequence. In the middle is Charles Lyell's version from the first edition of the *Antiquity of Man*, the popular name for his 1863 work which is discussed in more detail in later chapters. On the right hand side of the figure is a generic stratigraphic sub-division. Its generalised sub-divisions would have been recognisable to most Victorian scientists.

The modern conception of the Pleistocene as a geological period is depicted in Figure 1.1. It is often labelled as the Ice Age. We now know that the period is characterised by a long succession of glacials (even numbers in shaded blocks) and warmer interglacials (odd numbers in unshaded blocks), and it is against this background of cyclic climatic fluctuation that much of early human history has been played out. These alternating periods of cold and warm climate have been established from analysis of faunal and floral remains in marine deep sea cores, as well as ice cores drilled through the Greenland and Antarctic ice sheets. The information on the right hand side of Figure 1.1 maps the archaeological record of Palaeolithic human occupation of Britain against the geological record of Pleistocene climate

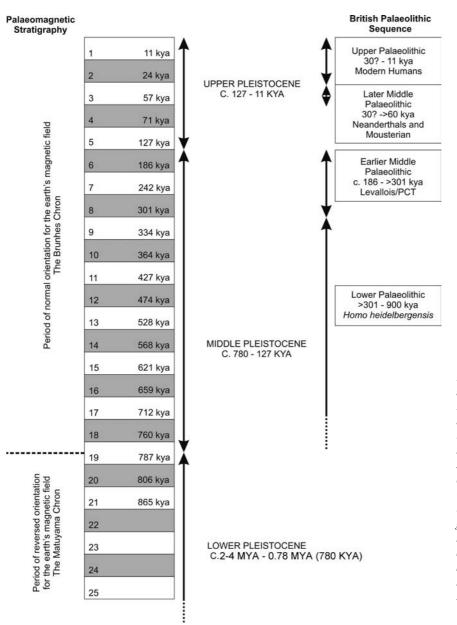


Figure 1.1. Modern interpretation of the Pleistocene period. The alternating white and dark blocks represent stages in the Marine Isotope Stage sequence. These are phases of climate (shaded block = cold/glacial; unshaded block = warmer/interglacial) reconstructed from minute animal remains recovered from deep sea cores drilled through Pleistocene sediments. After McNabb 2007.

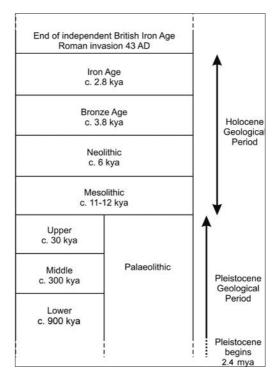
change. The Palaeolithic (Old Stone Age) is confined to the Pleistocene. It begins, at least in terms of the British sequence, with the earliest hominin occupation of Britain about 900 kya (kya=thousands of years ago). Hominin is a label that includes our ancestors but also incorporates related extinct fossil genera (such as Australopithecines) all of whom evolved after the split with the common hominin–ape ancestor. We do not know which hominin species were the earliest visitors to our shores. By 500 kya Britain was being

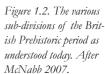
occupied by a species known as *Homo heidelbergensis*. This earliest phase of the Palaeolithic, the Lower Palaeolithic, ends about 300 kya, and is replaced by the first half of the Middle Palaeolithic. This first part of the Middle Palaeolithic sees the introduction of new stone tools and new ways of making them – the Levallois/prepared core technology. There then follows a long phase in which Britain is abandoned by hominins, possibly lasting more than 125 kya. Sometime before 60 kya the next hominin species to arrive in Britain, the Neanderthals, initiate the second half of the Middle Palaeolithic. At about 30 kya modern humans arrive carrying their Upper Palaeolithic culture. This phase ends about 11 kya. Marine Isotope Stage 1, beginning about this time is the equivalent of our own interglacial, and therefore equates with the Holocene in Table 1.1.

Of course this sequence was not known to the Victorians. As we shall see in the following chapters they (mostly) presumed the handaxes of the drift, what modern geologists would call Pleistocene deposits, were older than the stone tools found in the caves. They were able to further subdivide the different layers within the caves as well, but did not make the association between Middle Palaeolithic/Mousterian tools and the Neanderthals; or the conection between the later Upper Palaeolithic tools and modern humans; to be fair they were very close to it by 1901.

Within our own interglacial, the later Prehistoric period (as I shall define it here) sees the Mesolithic (Middle Stone Age), Neolithic (New Stone Age), and Bronze and Iron Ages, as shown in Figure 1.2. The existence of the Mesolithic only began to gain acceptance toward the end of the Victorian period. The Neolithic with its ground stone axes, domesticated animals, cereals, sedentary life style and ceramics, was therefore the earliest occupation of Britain as far as the early Victorians were concerned. The momentous year of 1859 (see Chapter 2) revealed otherwise. As this book will show, the history of human origins research in Britain was a slowly growing awareness of the Pleistocene as a complex geological and archaeological period. For the Victorians it began with the recognition that the drift, the surface geology of sands, gravels, silts and clays, contained evidence of ancient humans and extinct animals living in the same ice age world.

It is important to understand that geologically, as well as archaeologically, there were very few moments of widespread consensus. This extended to subdividing the Pleistocene as a period. At the beginning of the middle Victorian era (as I have defined it here, 1859/1860–1880), there was a widespread belief that there was only a single glacial phase during the Pleistocene. There was much discussion as to when within the Pleistocene it was, and how long it lasted. Two contrasting views are presented in Table 1.2. On the left hand side are the views of William Boyd Dawkins drawn from his book *Cave Hunting* in 1874. This is an example of one viewpoint on Pleistocene subdivision, in this case based on the presence of suites of mammals preserved in various sedimentary formations. This is discussed in more detail in later chapters. On





Boyd Da	A generic view of the Pleistocene in the middle and late Victorian periods		
later Pleistocene	Post-glacial Pleistocene	A post glacial later phase of the Pleistocene	
	Glacial phase of the		
	Pleistocene		
middle Pleistocene		A middle glacial phase of the Pleistocene	
	Long pre-glacial phase		
earlier Pleistocene		An earlier pre-glacial phase of the Pleistocene	

Table 1.2. Sub-divisions of the Pleistocene, called the drift period by the Victorians. On the left is that supported by William Boyd Dawkins. On the right a generalised middle and late Victorian perspective.

the right hand side of the table is another suggestion for the way a number of students of this period may have generalised the process of sub-dividing the Pleistocene in the late Victorian period (here taken as 1880–1901). In both of these schemes, Victorian researchers would have placed the Palaeolithic (drift and cave) in the post-glacial phase. Much of the debate examined in this book reflects changing views on these geological and archaeological sub-divisions, in particular whether or not humans were post-glacial in age, or earlier.

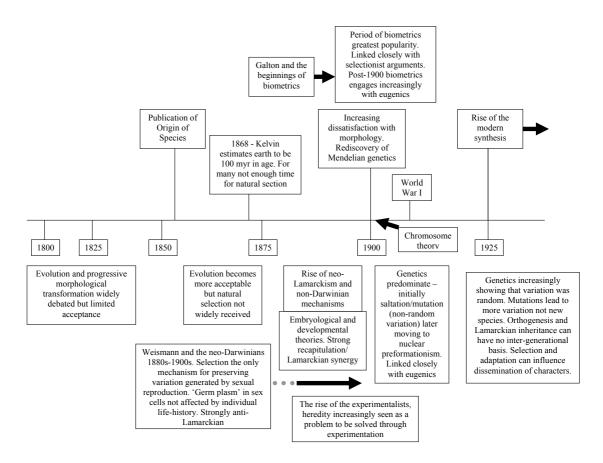
Figure 1.3. Development of ideas and approaches to studying human origins and related disciplines across the Victorian period. Based on Bowler 2003 with additions.

The Structure of the Book and the Big Picture

In this section I will present my overall conclusions for the book. These represent original views on my part generated from the order and structure through which I have presented the material, as well as my own interpretation of particular events. This will familiarise the reader with the main themes and how I believe them to be interwoven with each other. However, at the beginning of each chapter, I describe in more detail my conclusions for the topics developed within that chapter. As both an introduction and a description of what I believe are the main lessons to be drawn from the material discussed, I hope this will allow readers to evaluate my conclusions for themselves, and hopefully this will help them to formulate their own opinions on the significance of the data.

The argument I will develop in this book is as follows. It should be read in conjunction with Figure 1.3 which shows the broad development of various research themes over the middle and late Victorian era.

1859 was a momentous year, particularly for Palaeolithic archaeology, as it changed the whole course of debate on the origin of our species. Up until 1859



there was no widespread concept of deep time in relation to human antiquity; Prehistory began with the age of the polished stone axes, what today we call the Neolithic. This was the Stone Period for the early Victorians. Estimates on its age varied. The only real discussion on human origins in Britain prior to 1859 was the controversy surrounding the origin of the various human races as the Victorians saw them. Slavery had been the engine that drove this, and debate about the relative 'worth' of the non-white races continued even after 1859. The intellectual scaffolding necessary to conceive of human origins in a different way did not really exist (with the exception of a few far sighted individuals) prior to 1859. But the annus mirabilis changed all that. Darwin's work indirectly suggested a natural origin for humanity. If humans were a part of the natural world, like every other animal species, then our present condition was a result of descent with modification over long ages of time. Effectively, Darwin's work predicted a series of human ancestors reflecting differing developmental stages in evolutionary growth. Each stage would have to reflect a world to which that ancestor was successfully adapted and particularly suited.

The Antiquity of Man debate of 1859 revealed the physical reality of a previously unsuspected world. This was the Pleistocene. Although the drift, as it was called, was long known about, the fact that it was inhabited by ancient humans was not really suspected until the middle of the nineteenth century. Geology showed this world to be very ancient, the crucible from which putative human ancestors could have emerged. Others thought this would be earlier still. Palaeontology filled that world with extinct animal species or earlier forms of living ones. Archaeology peopled it by revealing the tools of its human inhabitants, even though they themselves remained elusive. The crudity and simplicity of these Palaeolithic tools suggested the stage of development these humans were at. So, if the pre-1859 debate on racial origins stood for an origins debate because there was no other context within which to set such a dialogue, then Darwin and the Antiquity of Man debate set the question of human origins squarely within the natural world.

Slowly, across the following decades, a true human origins debate began to emerge as racial origins became less and less relevant to physically understanding the human past. This is not to say the question of racial origins simply faded away, it didn't. It was kept alive across the decade and beyond for a number of reasons. These were partly political, and partly the broader Victorian interest in race itself.

After the first flush of excitement, the geological societies who had fronted the Antiquity of Man debate and explored the reality of the newly revealed Pleistocene lost world, returned to debating other matters. Most geologists did not consider the surface deposits and their contents to be real geology.

The two main societies who would have had a key role in exploring human ancestry in the 1860s, the Anthropological Society of London and the Ethnological Society of London, were the focus of much political manoeuvring between different interest groups. In particular the group of rising young scientists who marshalled themselves under the banner of evolutionism, sought to gain greater political control of science through institutions like the Ethnological Society and the British Association for the Advancement of Science.

One unintended consequence of embedding human origins within the older polemics of the Anthropological and Ethnological societies was that although the Antiquity of Man debate began as a geological and archaeological question, in the decade following 1859 it became an anthropological one. This accompanied a shift away from descriptive accounts of stone tools found in ice age river gravels, to a more interpretative approach which tried to anthropomorphise the 'Palaeolithic period' as it was becoming known. The framework for this more theoretical phase was an emerging discipline now labelled 'Evolutionary Anthropology'. 1859 paved the way for this emergence; in a sense 1859 rendered evolutionary anthropology inevitable. The broad evolutionary perspective of progressive time (McNabb, 1996) unintentionally structured ways of thinking that crept into most of the natural sciences. It created synergies between different disciplines, particularly those that incorporated the element of time. Whereas Darwin merely suggested that passing time resulted in more physical variation in populations, evolutionary anthropology explicitly stated that biological evolution was paralleled by a series of incrementally progressive cultural stages, each built on its predecessor, and each characterised by unique signatures in material culture and social institutions. Evolutionary anthropology explicitly linked time with progress, and in so doing allied it to a common misconception about evolution, namely that evolutionary change implied improvement. This was something Darwin had never said. As a discipline, evolutionary anthropology located and contextualised the different periods of Prehistory, placing them in a relative developmental order. It set the Palaeolithic at the very beginning of this sequence.

The anthropologists' use of ethnological parallels to reflect the different archaeological periods automatically lent Prehistory a recognizable and human face. However it was not successful in doing this for the Palaeolithic of the drift. This was too old and too remote. There were no viable analogues here. This partly explains why the Victorians thought of the makers of the handaxes as essentially modern human beings. They didn't really know how else to visualise them. This is a key point. The handaxes and the levels of dexterity required to make them did not suggest some brutish half formed ape-like creature. Quite the opposite, but there was nothing on which to base a visualisation (and hence reconstruction/interpretation) of such a remote ancestor. I use the term human in the text in place of the more technically accurate modern term hominin, in order to reflect this Victorian perception.

But evolutionary anthropology carried its own interpretative difficulties. It couldn't readily explain how and why cultures evolved, merely that they did. This combined with disputes between the learned societies, and a lack of human fossils from the British Palaeolithic, served to hold British Palaeolithic archaeology in something of a stasis in the late 1860s and early 1870s. By comparison the European record was very rich. Belgian and French caves were revealing a whole series of what appeared to be different Palaeolithic cultures, associated with distinct suites of faunal remains that allowed for their placement in a relative chronological sequence of development. A chronology for the Palaeolithic was emerging, and human remains were being increasingly discovered in these deposits. In turn this allowed for the tentative recognition of different Palaeolithic human races. This was the beginning of a racial anthropology for the Palaeolithic that European scholars would attempt to link with the later Prehistoric races thought to be present in the Neolithic burial mounds and Bronze Age tumuli.

Extensive search in British caves and open air sites failed to discover comparable sequences. There was no shortage of British later Prehistoric remains, so British race scientists tended to focus their attentions on this. A gulf between British and Continental Palaeolithic research began to open. This may well have been expressed in a stronger emphasis in Britain on the development of more theoretical perspectives (philosophical as the Victorians would have called it), and evolutionary anthropology may be seen as a reflection of this. Again, it is possible that the lack of British Pleistocene skeletal material led to the emphasis on world ethnology prevalent in the journals of the ethnologists and anthropologists in the 1860s – although this is also accounted for by the interests of administering a global empire.

The 1870s represents a pivotal time in which many things changed. Aspects of human origins research already in flux across the 1860s settled into new directions. With the Darwinians in power in the new Anthropological Institute, human origins finally shed the mantle of racial origins (although individual papers on this topic and its relationship with human origins continued to appear). But the prominence of evolutionary anthropology also began to diminish as the interests of its main advocates were diverted elsewhere. One of them, E.B. Tylor, became more concerned with kinship, mythology, and what would now be considered as straightforward social anthropology. Although he maintained his evolutionary credentials, after the formation of the Folklore Society in 1878 his interests gravitated away from questions immediately relevant to human antiquity. The other main proponent of an evolutionary anthropological approach was John Lubbock. His political career began in earnest during this decade. He was Liberal MP for Maidstone in 1870 and 1874. He maintained a life-long interest in human origins research, but he was increasingly concerned with social reform and natural history. These two men had been at the forefront of the anthropological interpretation of Prehistory. The vacuum that began to open behind Lubbock was filled by John Evans, a hero of the 1859 Antiquity of Man debate.

While Evans engaged with ethnological parallels on occasion, his strongly

descriptive and non-interpretative style of archaeology did not lend itself to the broader contextualisation and interpretative stances that evolutionary anthropology offered. With no other theoretical framework available within which to discuss human origins, and Evans unwilling to do so, Palaeolithic archaeology returned to the more geologically orientated descriptive subject it had been between 1859 and 1863. Whether or not this served to encourage the research questions that dominated the 1870s, or *vice versa*, is a moot point. Evans himself became Britain's most senior Prehistoric archaeologist. His prominence afforded his work the status of 'an establishment position' (although to be fair he was unlikely to have been aware of this).

One of the signals of change in the 1870s was the rise of new geological models for the Pleistocene. Alongside Evans, Joseph Prestwich was the other senior player in the Antiquity of Man debate and his interpretation of a post-glacial Pleistocene date for the Palaeolithic (Table 1.2) came as close to being an establishment viewpoint as anything could have done, particularly where chronology was concerned. But it was enmeshed within a particular view of the geological history of the glacial phase of the Pleistocene, that of submergence of large areas of Britain under the glacial ocean. A new glacial/ terrestrial interpretation was being increasingly promoted whose developing polemic over the 1870s and 1880s began to offer more credible explanations for the evidence of flint tools in what appeared to be glacial-aged Pleistocene deposits. These were predicated on new views of Pleistocene climate, which offered ages in real years for climatic events. These new ideas frame-worked the potential for discussing inter-glacial and even pre-glacial human occupation in Britain, which the post-glacial hypothesis simply precluded. Inter-glacial and pre-glacial occupation became a key topic whose solution was geological and not anthropological. These debates preface the eolith controversy of the late 1880s and 1890s which were a direct extension of them.

There can be little doubt that the reputation of Joseph Prestwich contributed to the success of the eoliths as an enduring dialogue. In fact it is unlikely that eoliths would have had much of a hearing without his support. The British academic environment was very different to that in Germany, and especially France. Abroad, there was strong institutional and government support for anthropology. The ever growing collection of skeletons from the Reindeer Age caves, and the strong Continental emphasis on probing for long racial lineages lent the subject a contemporary relevance. Continental scholars were not slow in linking race to the political difficulties of European international politics. Race was seen as a motivator in national behaviour. Britain, with its small skeletal database and inability to move back beyond the Neolithic could only look on in parochial envy. There was a real need for an indigenous English origins debate. Most of the work of the British race scientists in the 1870s and 1880s went into analysing current racial health; Francis Galton for example, worried over the dilution of the British as a people.

So part of the success of the eolith controversy as a debate, was that it

fulfilled the role of a British origins debate. Prestwich advocated a Palaeolithic date for the eoliths; they were the earliest and first stage in the evolution of stone tools. But this stage was still Pleistocene, probably dating to the early Pleistocene/pre-glacial phase – Table 1.2. A number of his collaborators, like Benjamin Harrison, believed the eoliths were much older, Tertiary in age. The debate raised huge questions. Where had these earliest tool makers come from, and when did they arrive in Britain? Were they evolving in Britain? I characterise this first phase of the eolith debate (the second phase moved to East Anglia in the post-Victorian period) as a 'Second Antiquity of Man Debate' (McNabb, 2009).

But even the British eolith question had a parochial feel about it. The debate was initiated through three papers; two delivered to the Geological Society and one to the Anthropological Institute. It was rooted in Prestwich's geological interpretations of the North Downs and Kentish Chalk Escarpment. But Prestwich's geology was out of date. He was in effect writing up his unpublished notes on sites and sections from previous decades and not taking into account new work. At this time he was suggesting that the Kentish landscape was a result of sculpting by glacial ice. However, no direct evidence for this had ever been discovered in Kent. He was also positing a new glacial episode which post-dated the main glacial Pleistocene (mooted in the second eolith paper). The evidence for this was very controversial. He was even suggesting a major phase of European oceanic submergence in between the end of the Palaeolithic and the beginning of the Neolithic. He would suggest that this was a possible origin for Biblical flood myths. If it hadn't been for Prestwich's prestige, it is to be wondered how far much of this would have been taken. As it was, the eolith debate soon became mired in a lack of new evidence and the entrenched position of the debaters. Old questions could not be answered and new approaches and lines of evidence were not forthcoming. After Prestwich's death in 1896 the debate fossilised.

But eoliths were being discovered everywhere, and interest in them reached an international level. At the heart of this was Benjamin Harrison. He was a central node in a correspondence web which reached out, even to the British dominions overseas. He exemplifies the interconnectedness of Victorian science, in this case spanning the divide between professional and amateur (although the latter was not a label that any Victorian would have recognised). The eoliths even prompted a minor revival in the flagging fortunes of evolutionary anthropology and the use of ethnological parallels. For once, direct connections could be drawn, based on the character of the eoliths. E.B. Tylor revisited earlier work of his which highlighted (as he saw it) the very primitive nature of Tasmanian society. He suggested that the tools these people had made were very similar in concept and limited design to the eoliths of Kent. Conceptually, the eoliths sat at the very root of all evolutionary development in material culture. Archaeologists began to develop long multiperiod sequences of typological evolution with eoliths at the base of the tree. In so doing they highlighted the still poor British Palaeolithic skeletal record. Stone tool development implied that continuity between the Palaeolithic and later periods should be discernable. But where was the skeletal evidence? The discovery of *Pithecanthropus* in Java in the middle 1890s provided a potential maker of the eoliths. The creature was primitive enough for some researchers, but not primitive enough for others. Did such a creature roam the English Downs? Or had the eolith makers evolved from something like Java man on their long journey into the West?

Throughout the book, but particularly after Chapter 5, I have noted the many ways the general public were kept aware of the various arguments concerning human origins. I show that the general public had unprecedented access to detailed knowledge and polemic as scientists fought out their differences of opinion in various journals and periodicals which had wide public readership. The various societies were open to all, and their meetings were another venue for practising scientists and other interested parties to exchange views. Museums ran public lecture series, as did the various education colleges and institutions. The British Association for the Advancement of Science met annually to debate the cutting edge research of the day. All of this meant that there was a widespread availability of information, which I suspect has not been equalled until the advent of the modern internet. Human origins, and the various debates surrounding it, were very much in the public's eye.

I conclude the book with two chapters on science fiction in the late Victorian period. At first this may seem odd, even though I have focused on those works which had a human origins or Palaeolithic theme. Firstly, this allows me to continue developing the concept of public access to information on human evolution. Secondly, it provides me with a vehicle through which to engage in some of the debates of the time in far greater detail than was possible in earlier chapters. Finally it allows me to introduce the question of reconstructing the Palaeolithic, something that has been conspicuous by its absence up to this point.

An objection to all of this this could be that fictional narrative does not reflect scientific interpretation. True, but then I have chosen H.G. Wells as the theme for Chapter 12 as his work did reflect scientifically informed debate. Others who used fiction as a vehicle to engage with science and its presentation to the public, such as Grant Allen, would also have been suitable. But of course not every fiction writer would have been as concerned as these two were with scientific accuracy. These writers are discussed in Chapter 13. Here my point is simple. These story tellers were not really bothered with scientific accuracy, they drew on common understandings (folk psychology) of human antiquity. They gave the public what it expected, and at the same time reinforced that expectation. Effectively, fiction writers were providing the interpretations of what it was like to live in the Palaeolithic, while the scientists who described it, were mostly unwilling or unable to do so. Reconstructions were especially popular in France where a rich tradition of prehistoric fiction grew up around an equally rich Palaeolithic data base. To some extent, the reconstructions of Palaeolithic lifestyles disseminated via folk psychology substituted for evolutionary anthropology after the 1860s, and fictional writing, sparse enough in Britain, fed and reinforced its vision. I suspect this fed back to the scientists and archaeologists, who were in turn influenced by the fiction writers and the public's perception of the Palaeolithic.

Perhaps this is not so surprising at the end of the Victorian period. The evolutionary paradigm continued to exert a powerful influence on how ideas and data were structured. But evolutionary anthropology, once having described something, and allocated its position in the evolutionary sequence, could do little else with it. Anthropology itself had moved to a more social based anthropology in which societies and their institutions became the focus of study. But this could not work for the Palaeolithic, because the data with which to do this was just not there. I get the impression that Palaeolithic archaeologists were stuck with a theoretical framework which seemed relevant, but wasn't particularly helpful – it described but didn't really explain. Not surprising then that it was the fiction writers who seemed to be providing the public with an anthropology of the Palaeolithic.