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978-1-107-02962-0 - Metals, Culture and Capitalism: An Essay on the Origins of the Modern World

Jack Goody

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Metals, Culture and Capitalism

An Essay on the Origins of the Modern World

Metals, Culture and Capitalism is an ambitious, broad-ranging account of the search for metals in Europe and the Near East from the Bronze Age to the Industrial Revolution and the relationship between this and economic activity, socio-political structures and the development of capitalism. Continuing his criticism of Eurocentric traditions, a theme explored in *The Theft of History* (2007) and *Renaissances* (2009), Jack Goody takes the Bronze Age as a starting point for a balanced account of the East and the West, seeking commonalities that recent histories overlook. Considering the role of metals in relation to early cultures, the European Renaissance and 'modernity' in general, Goody explores how the search for metals entailed other forms of knowledge, as well as the arts, leading to changes that have defined Europe and the contemporary world. This landmark text, spanning centuries, cultures and continents, promises to inspire scholars and students across the social sciences.

JACK GOODY is Emeritus Professor of Social Anthropology in the University of Cambridge and a Fellow of St John's College. Recently knighted by Her Majesty The Queen for services to anthropology, Professor Goody has researched and taught all over the world, is a Fellow of the British Academy and in 1980 was made a Foreign Honorary Member of the American Academy of Arts and Sciences. In 2004 he was elected to the National Academy of Sciences and he was elected Commandeur des Arts et Lettres in 2006.

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JACK GOODY

St John's College, Cambridge



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*This book is dedicated to the Master and Fellows of
St John's College on their five hundredth anniversary
(2011) for the help so many of them have given me,
now and since I came up.*

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12. A statue of Queen Boadicea of the Iceni standing on her chariot (Photo by Hulton Archive/Getty Images) © Getty Images

Preface

Mining is a highly dangerous occupation, involving its workers spending many hours underground in ‘inhumane’ conditions, subject to falls of tunnels and to the invasion of gas or of water. It is work that free men rarely wanted to do and so the Pharaohs found slaves and convicts to go there. In later times, men were forced to do this, either for money or also because they had no land, no other job. Mining has virtually disappeared in Britain (and Europe) during my lifetime and the search for metals has been largely transferred to ‘developing’ countries, just as in the early days Europe was the continent to be plundered, and ‘developed’ in the process. This book, which is an account of that search, is humbly dedicated to these miners, who formed their own community, as the work of Clancy Segal and of Slaughter and Henriques has brought out.¹ While my own trajectory led me to a different, and more comfortable, existence, my life has been much influenced by the Hunger Marches of the miners of my youth, by my serving in a regiment of Nottinghamshire miners in the war, by friends as ‘Bevin Boys’ on my return, by the work of the Tavistock Institute in the coalfields after the war, of the political activity of workers in the Fife coalfields, and by the attempts of Arthur Scargill and others to fight to keep the industry in this country.

This work was written because various scholars from abroad (including those at the Muslim College) had asked me to contribute a lecture for them and for CRASSH, the Centre for Arts and Humanities at Cambridge, so they could link their European studies with their homes in the east; but in the end I gave something different and got down to writing the book.

So it is about the development of society in Europe and the Near East from the Bronze Age on, when the urban civilisations had little or no metal and therefore had to search among other peoples and in other places. And so the situation remained in the Near East. But the fact that the book is largely about metals should not make us forget the other aspects of urban civilisation, the spread of literacy and of written religions. All these are linked together and it is a mistake completely to separate off the two spheres, as so many do, both

¹ See Segal 1960 and Slaughter and Henriques 1956.

scientists and humanists. Given the frequent use in the humanities of the dichotomy between sciences (and technology) and the arts (and communication), I must stress that I am not seeking to exclude one or the other (nor yet the religious or the secular) but to trace the connections in a rounded (anthropological) view.

I have not given as much attention to China and the east, nor yet to the Americas, as I should have done, but my reason is that I began with the question of Europe and the Near East – and that remains very much the focus. The former did develop an Age of Metals, possibly stimulated by the Near East but with a different history until recently. In Meso-America similarities existed at the level of urbanisation but metallurgy as distinct from metal-working (in gold) was little advanced before the coming of Europeans.

I am aware that arguments have gone on about the ‘diffusionist’ approach; in an essay Wengrow writes of ‘the collapse of diffusionism’ and offers an ‘interactionist’ approach instead.² Rather than drawing a line between ‘civilised’ (Bronze Age) and ‘barbarian’, he himself prefers ‘interactionism’ and would rather make a distinction between ‘archival’ and ‘sacrificial’ economies, the first associated with a complex administration, the second not. I can see some tendencies to different uses that can be so described but nothing like a dualism. One does not exclude the other. In looking at metals, we have almost certainly to take a modified ‘diffusionist’ approach, which is not the answer to every question and certainly does not exclude local invention. In the Early Bronze Age cultures, we find ‘sacrificial’ hearths although the use of metals was present in warfare and in peace; there is nothing contradictory here.

I have concentrated upon iron as it seemed to have the most immediate consequences for the history of long-term development. But this has meant a certain neglect of the precious metals which have been so significant for the exchange and booty economies, and which were often mined together with others – not so much with iron which was usually plentiful on or near the surface, but with copper and lead. And the search, in which I am especially interested, often took place more for them than for those of the less valuable, more utilitarian kind.

I have consistently used the themes ‘civilised’ and ‘barbarian’, in a technical archaeological way. I do not wish to indicate a permanent, mental difference. That my work on writing would immediately discount. When he came to London, my colleague, Kum Gandah, who helped collect and translate the later versions of the long Bagre myth of the LoDagaa, became a computer

² Wengrow 2009.

expert and statistician as the result of his schooling. The transition was quite comprehensible and the situation entirely contextual; he (and to some extent I) could operate in both modes. The terms refer to ways of living.

So, stimulated by students from Asia, this book began as an attempt to bring closer together their work and interest in Europe and the Near East and the other countries they came from. The Bronze Age had always fascinated me as a focus for a balanced account of the east and the west, a common origin rather than the divisive versions of many recent historians. Comparative advantage was to be found in both at different times. But in exploring the early lead of China in metallurgy, paper, printing and other fields, one also wanted to account for the later achievement of Europe, both economically and intellectually (for they do intersect). This could be best done by concentrating on the fact that the Bronze Age civilisations had few indigenous metals and that those had to be searched for among the ‘barbarians’ at the ‘periphery’, a process that eventually led to their own advancement. Europe was one of those latter areas, inhabiting the ‘Eurasian metallogenic zone’ formed by the clashing of tectonic plates. It continued to be a source of metals for the Near East, although most trade disappeared after the decline of the Roman Empire. That was especially so when Venice took up the role of intermediary between the Levant on the one hand and the Germans and others to the north, who had specialised in iron-working since the Hallstatt period – and in copper before that. This renewal of the exchange of metals for Asian ‘luxuries’ led to the spectacular achievements made in Europe during the modern Iron Age, particularly in later medieval and subsequent times, eventually leading to what we know as the Industrial Revolution. That change included the achievements in the realm of knowledge, in the arts, which were now able to expand in a secular direction as the result of their release from Abrahamistic hegemony, as well as in the use of metals. Many of the prerequisites of those developments, of gunpowder and cast iron, as well as of porcelain, the compass, of silk textiles, first took place in China – as did much early science. A considerable contribution was also made by other written civilisations. But my question here is different. How did Europe itself take off after the Renaissance to produce what has been called ‘capitalism’?

What especially interests me here is the role of metals not only in relation to early cultures but to the European Renaissance and to ‘modernity’ in general. The search for those materials entailed one for other forms of knowledge (including those about the underworld and even the other world) as well as the arts, leading up to the changes that have occurred in Europe and the contemporary world.

I start with the Bronze Age area that was so central to the beginning of civilisation in the sense of the culture of cities. It also saw the invention both

of writing and of the plough. But the river valleys where it occurred had no copper to make the bronze nor did they have other metals. These had to be sought from the dwellers in the hill country, the 'barbarians' who, in the course of this search for and supply of metals, changed their way of life.

Literacy was all-important in this exchange that developed, inside between the urban centres and the plough farmers, outside with the 'barbarian' hill tribes, in the first place as a record-keeping device. Subsequently it became a tool for more complex language use and spread in all directions as the search for metals extended further into the Mediterranean, the Eurasian plateau and into Europe, not only to the centre but also to Spain, and to the west, as well as to Greece and subsequently Rome. But that expansion was in the Iron Age, when the production of the metal largely centred on southern Germany and Austria. The collapse of the Empire in the west saw the decline of trade to the Near East, even though local iron-working continued, especially for swords and protective armour. However exchange with the east, for its spices, textiles and other 'luxuries' was virtually discontinued, not to be restarted in a major way until Islam, Byzantium and others took it up again in the new millennium. For in the Near East, exchange with Asia had never ceased and led to the development of a bourgeois culture that has been compared with later Italy. But the Near East was always short of metals at a time of increasing usage. Their metals came from various parts but mainly from Central Europe and the exchange of goods with the north was essential to the development of trade in Venice and other Italian towns. It was this activity that involved the birth of Renaissance culture and then to its extension to the north. The Germans had been experts in metals from the Hallstatt period and developed and transmitted that expertise. It was they who were called to Britain to modernise the mines and the whole production of metals so needed by Elizabeth in her struggle with the Spanish, who were themselves bringing precious metals across the Atlantic. The English industry, with its plentiful and available supplies of iron and coal (for coke) then took off with the help of German mining engineers and metallurgists as well as of local contributors. These resources the valleys of the Near East hardly ever had and Europe took over the industries they had developed and brought them into the modern iron age.

In this discussion, I am pursuing the theme of the alternation, which was at the same time a spiralling, in the movement of the east and west towards 'modernisation', which constituted another view of Eurasian history, especially to those notions expressed in works written following the Industrial Revolution, the period of hegemonic European dominance. This was a sphere in which 'progress' was clear, unlike others, and it is the transfer of the notion to other fields that has so often blighted the consideration of the past. This and the failure to appreciate

the common roots of the economies and cultures of Eurasia and their continuing interaction, as well as the to and fro movement in European as well as Eurasian societies, means that we need to discount much 'essentialist' history that assumes that 'modernisation' and 'capitalism' were inventions of Englishmen, or even Europeans, flattering to our egos as that idea has been.

In this piece I have covered a long period of time and will undoubtedly have got some things wrong, although I hope my references will usually bear me out. On few, perhaps none, of the subjects am I expert, but the expert does not always see the wood for the trees. One reason for my taking a long time-span is that historians have taken a much too restricted view of their subject and this has prevented them from going back to the commonalities which join us both to the Near and the Far East of what is essentially one continent. For this reason I would question the history cultivated in part of that region, in Europe since the eighteenth, but especially the nineteenth and twentieth centuries when the west led the way in many things. They emphasised the development of 'capitalism' as a new mode of production in Europe (an idea not limited to Marxism) and have therefore overlooked the commonalities of which I have spoken. Undoubtedly something happened in the west in the 'modern' period but this development should be seen within the context of 'alternation' and of the occurrence of similar activities in other parts of the world. If I have moved around chronologically, it is partly to emphasise the process of development over the long term, of the similarities in many respects of accountancy, trading and exchange, as with early eastern colonies in the western Mediterranean, of Europeans in the east, and of the foundation of the Turks in Vienna. These were structural similarities which over-ride considerations of time or place.

I have tried to take the analysis up nearly to the present day in the belief that anthropologists (and prehistorians) do not explicitly consider the relationship of what they do to the contemporary world and that historians (and sociologists) rarely look far enough back or beyond their own shores. So it is an attempt to counter those approaches from the angle of the social (and broadly human) sciences.

The general approach has some political implications in the context of contemporary life. It means that 'capitalist' or 'socialist' no longer define alternative political systems. Most economies are 'capitalist' in that they involve exchange, accumulation and all that that implies. All such systems are also influenced by some social considerations, although this occurs in varying degrees. So all political programmes are composite in this sense, with varying emphases in one tendency or another, in particular on equality or differentiation, both aspects of all systems.

Acknowledgements

In writing this book I realise how much I have come to depend on others, especially owing to my age. For the manuscript, I have had enormous help from Melanie Hale and Mark Offord who have to decipher my handwriting, then there is support from Susan Mansfield in the College Office of St John's and Peter Hutton in the Library, Dora Kemp in the McDonald Institute (for the maps), together with the porters and staff of the College, and that of the mairie of Bouzigues as well as A. Mertens of Micro 34. There are a considerable number of colleagues at Cambridge and elsewhere, especially the late John Alexander, Mauro Ambrosoli, Graeme Barker, Hélène Bras, Christian Bromberger, Pat Boyd, Peter Burke, Jim Charles, Peter Garnsey, Ariane Gastambide, Richard Goody, Chris Hann and his students, Charles Higham, Deborah Howard, Stephen Hugh-Jones, Gilbert Lewis, Peter Linehan, Jo MacDermott, David McMullen, Vanessa Maher, Preston Miracle and his students, Basim Musallam, Mark Nichols, Jean-Marie Privat, Xavier Ribes, Colin Renfrew, Jacques Roman, Ulinka Rublack, Richard Tapper and Tony Wrigley. Their help has been especially important in the many fields in which I am certainly no 'expert'. I am also grateful to Peter Goddard and the members of the Institute of Advanced Study at Princeton for giving me such a pleasant place to complete the manuscript in early 2011. Then there is the debt owed to my former students, Cesare Poppi of the Veneto and Paul Sant Cassia of the University of Malta. But especially thanks go to Juliet Mitchell, who started me off and wanted me to turn what began as an essay into a book. So here it is. She lived for better (and worse) with it from start to finish, reading every word. Meanwhile there were other family to keep me going and encouraging me in various ways, Jeremy, Joanna, Jane, Mary, Rachel and Polly.

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In this enquiry I have not only been dependent on many friends and relatives but also especially upon several central books, on Gordon Childe's *What Happened in History* and subsequent works, on David Clarke's account of trade in prehistoric Europe, on Ashtor on the economy of the Near East, on Agricola for activities on mining, on Lane and Braudel for contacts of Venice with the North and East, Klingender on the Industrial Revolution,¹ on Tylecote and Aitchison on metallurgy in general, on Chernykh for Eurasia, on Needham, Wagner and Barnard for China and on the various other references that I have used in earlier books.

But above all I remember the earlier help of my mother, Lilian Rankine Goody of Turriff (she always retained her maiden name) and of my father, Harold Ernest Goody of Fulham, both of whom left school at sixteen but developed their own interests in work and education and were so pleased when their two sons obtained sizarships and later PhDs (without loans) at St John's College, Cambridge, later becoming Fellows of the college, as they also would have been when they both subsequently became members of the National Academy of the USA. It was they who introduced us to the College, to which I offer this book in its five hundredth year. It has not only educated me but has given me a room to work in as well as helping me in many ways to produce my work. I also thank my family past and present for their varied support and of those people, mainly women, who have enabled me to continue my work.

¹ Who has an excellent description of the development of industry in Britain.

Chronology

c. 6000–4000 BCE	Chalcolithic period using copper
c. 3300–1200 BCE	Bronze Age in the Near East
c. 3000–1000 BCE	Bronze Age in India
c. 2300–600 BCE	Bronze Age in Europe
c. 2000–700 BCE	Bronze Age in China
c. 1500 BCE	Replacement of chariot by warhorse
c. 1500 BCE	High-fired stoneware in China
c. 1300–300 BCE	Spread of use of iron in the Near East
c. 800–600 BCE	China develops wrought iron
700–600 BCE	Hallstatt culture (first Iron Age in Europe)
500–100 BCE	La Tène culture (second Iron Age in Europe)
fifth century BCE	Heavy use of iron by Greece and Rome
c. 300–200 BCE	China develops cast iron
91 BCE	Earliest recorded blast furnace in China
55–54 BCE	First Roman invasion of Britannia by Julius Caesar
43–84 CE	Second Roman invasion and conquest of Britannia
c. 410	Withdrawal of Roman Empire from provinces begins, leading to reduction in the use of iron
c. 780	Revival of metallurgy in Europe
793–1012	Viking and Norse raids and invasions of Britain
ninth–seventeenth centuries	Prominence of Venice as a centre of international trade, importing metal from the north and exporting to the east
c. 1000	Large-scale mining of metals in Europe resumes
c. 1150–1350	Possible making of cast iron by blast furnaces in Sweden
thirteenth–sixteenth centuries	Germany continues at the forefront of metallurgy and mining
1326	First cannon in Europe, using Chinese powder
1340	First blast furnace in Europe at Namur
thirteenth–fifteenth centuries	First water-powered bloomeries in Europe
c. 1454	The gun comes into general use in Europe
fifteenth century	Development of <i>Stückofen</i> blast furnace in Germany
1556	Publication of <i>de re metallica</i> by Georgius Agricola

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1698	Thomas Savery in France invents the atmospheric steam engine
seventeenth century	Development of the indirect process of making wrought iron in Europe
1709	Abraham Darby smelts iron using coke
1722	Newcomen steam pump first used in mining
eighteenth century	Cast iron becomes widely deployed in England
1779	Building of the first cast iron bridge at Coalbrookdale
1784	Puddling process of iron production invented in England
1855	Bessemer process for making steel patented in England

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