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# Morelli, Freud and Sherlock Holmes: Clues and Scientific Method\*

by Carlo Ginzburg

INTRODUCTION by Anna Davin

*This article by an Italian comrade and historian is very different from anything we have included in History Workshop Journal before. It unselfconsciously draws on philosophy, quotes Latin, and ranges across societies and periods in a way which is extraordinary – even shocking – to the English reader. (How can anyone feel confident to discuss not only the disparate areas suggested by the title, but also neolithic hunters, Babylonian diviners, renaissance scientific thought, the origins of fingerprints and so on?) In Italy, though still impressive, the range might seem less startling. There, familiarity with the literature and history of ancient Greece and Rome – ‘the classical tradition’ – along with philosophy remains more largely part of basic academic grounding, taught (as in France) even to schoolchildren. It is not, as here, associated chiefly with the educational institutions and political power of a privileged elite, the irrelevant preserve of the English gentleman, the specialism of the few in their ivory tower. Philosophy there is still centrally part of political theory (as it was for Marx and other nineteenth-century thinkers), and the Italian historian can make political interventions within philosophy and the classical tradition. The larger, longer perspective this brings also perhaps gives greater confidence for generalising, for theorising, and for speculation. This aspect of the continental marxist tradition is something which still seems quite strange to many English marxists, in spite of attempts (for instance by New Left Review) to introduce and integrate it here.*

*In this article as in his other work (mostly not translated), Ginzburg is centrally concerned with how people see the world, how knowledge is acquired and organised, the frameworks into which they fit information, beliefs, or observations, and the social structure which contains, influences and is influenced by these aspects of knowledge. He examines the relationship between ‘formal’ and ‘informal’ knowledge, ‘high’ and ‘low’, lore and science. His concern, in short, is historical epistemology – the history and theory of the construction of knowledge. In spite of the wide range of time covered here, the key point is the late 16th and early 17th centuries, the period during which the word ‘science’ lost its general sense, of knowledge, and acquired the narrower meaning we give it now. In an earlier article (‘High and Low: the theme of forbidden knowledge in the late 16th and 17th centuries’, Past and Present 73, Nov. 1976) Ginzburg suggested that for many centuries the opposition between ‘high’ and ‘low’ – one of the basic polarities around which human beings organise their perceptions of the world, like ‘light and dark’, or ‘hot and cold’ – was used to classify knowledge, and in particular to define forbidden knowledge, cosmic, religious and*

\*This translation is by Anna Davin; the first sections, however, owe a great deal to Susanna Graham-Jones’s translation of an earlier, shorter version of the article, which she kindly made available.

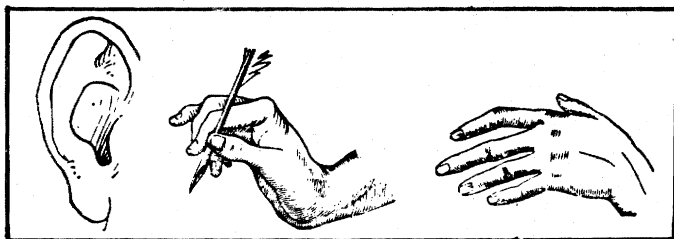
*political mysteries which ordinary people must not aspire to understand, let alone challenge. This of course 'tended to maintain the existing social and political hierarchy . . . and . . . to reinforce the power of the Church'. The discussion in the present article partly relates to that: here he is looking at 'low' knowledge, the kind 'which exists everywhere in the world, without geographic, historical, ethnic, gender or class exception', but which nevertheless is peculiarly the property of those who within a given society are not in a position of power. It is informal knowledge, orally transmitted, based on everyday experience (often including the accumulated experience of forebears and elders) and careful observation, which allows the observer to understand much more than can be directly seen. He characterises it as 'conjectural' or 'divinatory' knowledge.*

*Sometimes such knowledge is devalued – dismissed as trivial or unscientific – by the definitions of the elite, who at the same time may use its association with the powerless to devalue both them and their knowledge ('womanly intuition' is an obvious example). Sometimes on the other hand the knowledge is expropriated, as he suggests happened in a number of fields in the 18th century, with the writing down and codification of folk traditions and practice in, for instance, the use of herbs, or the care of animals. By following (and presenting) clues, he shows us how in the late 19th century the conjectural approach itself acquired a new academic respectability (and usefulness to the ruling classes and the capitalist state), after long subordination to the methods of experimental science as developed by Galileo and others in the late 16th and early 17th centuries, which demanded that every piece of evidence be directly observable and repeatable.*

*But he also casts much further back, and looks at knowledge in relation to power – the emergence of groups controlling particular kinds of knowledge: Mesopotamian diviners holding the secret of written communication, lawyers with their command of case-law and precedent, and doctors able through their familiarity with symptoms and the behaviour of disease to make diagnosis and prognosis. These were later joined by academics and experts of many kinds, and by those exercising state power, like the British official in India who expropriated the idea of using fingerprints for identification and turned it to the advantage of the colonial state. Herein lies some of the interest of his discussion of the rise of 'disciplines' – specialisations of knowledge like medicine or law or philology (the study of language), or palaeology (the study of ancient writing) and connoisseurship (expertise in the attribution of paintings).*

*These disciplines are also discussed in terms of the different paradigms of knowledge which he sets up, the different approaches, conjectural on the one hand, and rigorously scientific on the other. This is of particular interest to historians, for often, as he suggests, 'the historian's knowledge . . . is indirect, based on signs and scraps of evidence, conjectural'; yet there is always the urge to achieve recognition as scientific. The contradiction between the qualitative and the quantitative nags: the demand for more statistics, more proof, and less speculation or conjecture or indeed imagination, is one familiar to us all.*

*So Ginzburg's forays into the theory and history of knowledge – in any case fascinating – are also political, and they relate to issues of special significance for the historian. In our society the status of science is higher than that of conjecture. Without abandoning or denigrating the scientific approach, Ginzburg shows that there is an alternative, with its own history and validity, deeply rooted in popular experience even if sometimes misappropriated, complementing and extending the knowledge obtained through science.*



Ears and hands by Botticelli, from Morelli's *Italian painters* (1892).

The borderline between natural sciences and human sciences (or as it is sometimes seen, between science and everything else – social sciences, arts, humanities) has long been a difficult area, and is likely to remain so. The following pages attempt a fresh approach to the problem. In particular we shall discuss a theoretical model, or paradigm, for the construction of knowledge, which quietly emerged towards the end of the 19th century in the sphere of social sciences, and which has still not received the attention it deserves. Examining this paradigm, which came into use without ever being spelled out as a theory, can perhaps help us go beyond the sterile contrasting of 'rational' and 'irrational'.

## CLUES

### *Clues: the art historian*

Between 1874 and 1876 a series of articles on Italian painting was published in the German art history journal *Zeitschrift für bildende Kunst*. They bore the signature of an unknown Russian scholar, Ivan Lermolieff, and the German translator was also unknown, one Johannes Schwarze. The articles proposed a new method for the correct attribution of old masters, which provoked much discussion and controversy among art historians. Several years later the author revealed himself as Giovanni Morelli, an Italian (both pseudonyms were adapted from his own name). The 'Morelli method' is still referred to by art historians.<sup>1</sup>

Let us take a look at the method itself. Museums, Morelli said, are full of wrongly-attributed paintings – indeed assigning them correctly is often very difficult, since often they are unsigned, or painted over, or in poor repair. So distinguishing copies from originals (though essential) is very hard. To do it, said Morelli, one should abandon the convention of concentrating on the most obvious characteristics of the paintings, for these could most easily be imitated – Perugino's central figures with eyes characteristically raised to heaven, or the smile of Leonardo's women, to take a couple of examples. Instead one should concentrate on minor details, especially those least significant in the style typical of the painter's own school: earlobes, fingernails, shapes of fingers and toes. So Morelli identified the ear (or whatever) peculiar to such masters as Botticelli and Cosmé Tura, such as would be found in originals but not in copies. Then, using this method, he made dozens of new attributions in some of the principal galleries of Europe. Some of them were sensational: the gallery in Dresden held a painting of a recumbent Venus believed to be a copy by Sassoferrato of a lost work by Titian, but Morelli identified it as one of the very few works definitely attributable to Giorgione.

Despite these achievements – and perhaps because of his almost arrogant assurance when presenting them – Morelli’s method was very much criticised. It was called mechanical, or crudely positivistic, and fell into disfavour.<sup>2</sup> (Though it seems likely that many who spoke disparagingly of it went on quietly using it in their own attributions.) We owe the recent revival of interest in his work to the art historian Edgar Wind, who suggests it is an example of a more modern approach to works of art, tending towards an appreciation of detail as well as of the whole. If we are to believe Wind, Morelli had become exasperated with the unthinking cult of genius so current in romantic circles in the Berlin of his youth.<sup>3</sup> But this is unconvincing. Morelli was not tackling problems at the level of aesthetics (indeed this was held against him), but at a more basic level, closer to philology. The implications of his method lay elsewhere, and were much richer, though Wind did, as we shall see, come close to perceiving them.

### *Clues: the detective*

Morelli’s books [writes Wind] look different from those of any other writer on art. They are sprinkled with illustrations of fingers and ears, careful records of the characteristic trifles by which an artist gives himself away, as a criminal might be spotted by a fingerprint . . . any art gallery studied by Morelli begins to resemble a rogue’s gallery . . .<sup>4</sup>

This comparison was brilliantly developed by an Italian art historian, Enrico Castelnuovo, who drew a parallel between Morelli’s methods of classification and those attributed by Arthur Conan Doyle only a few years later to his fictional creation, Sherlock Holmes.<sup>5</sup>

The art connoisseur and the detective may well be compared, each discovering, from clues unnoticed by others, the author in one case of a crime, in the other of a painting. Examples of Sherlock Holmes’s skill at interpreting footprints, cigarette ash and so on are countless and well-known. But let us look at ‘The Cardboard Box’ (1892) for an illustration of Castelnuovo’s point: here Holmes is as it were ‘morellising’. The case starts with the arrival of two severed ears in a parcel sent to an innocent old lady. Here is the expert at work:

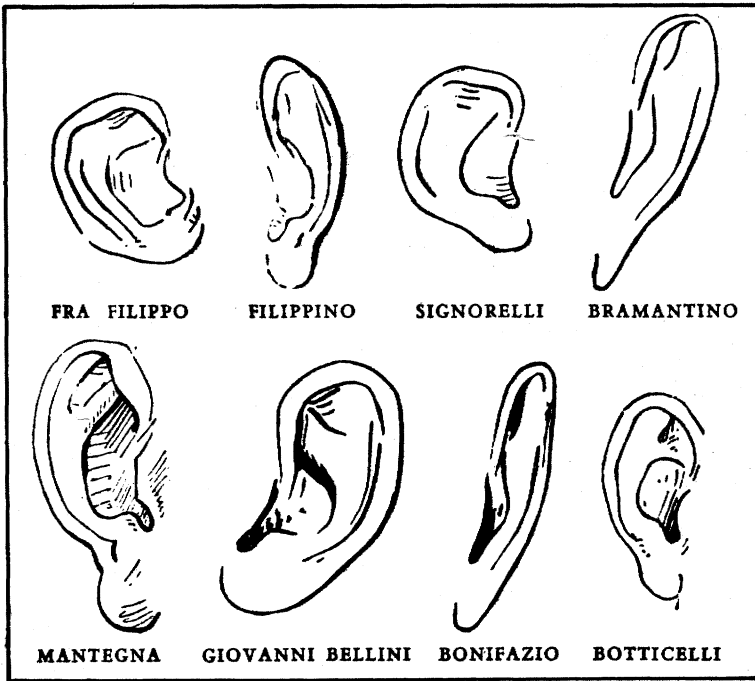
[Holmes] was staring with singular intentness at the lady’s profile. Surprise and satisfaction were both for an instant to be read upon his eager face, though when she glanced round to find out the cause of his silence he had become as demure as ever. I [Watson] stared hard myself at her flat grizzled hair, her trim cap, her little gilt ear-rings, her placid features, but I could see nothing which would account for my companion’s evident excitement.

Later on Holmes explains to Watson (and to the reader) the lightning course of his thoughts:

As a medical man, you are aware, Watson, that there is no part of the human body which varies so much as the human ear. Each ear is as a rule quite distinctive, and differs from all other ones. In last year’s *Anthropological Journal* you will find two short monographs from my pen upon the subject. I had, therefore, examined the ears in the box with the eyes of an expert, and had carefully noted their anatomical peculiarities. Imagine my surprise then, when, on looking at Miss Cushing, I perceived that her ear corresponded exactly with the female ear which I had just inspected. The matter was entirely beyond coincidence. There was the same

shortening of the pinna, the same broad curve of the upper lobe, the same convolution of the inner cartilage. In all essentials it was the same ear.

Of course, I at once saw the enormous importance of the observation. It was evident that the victim was a blood relation, and probably a very close one...<sup>6</sup>



Typical ears, from *Italian painters*.

#### *Clues: the psychoanalyst*

We shall shortly see the implications of this parallel.<sup>7</sup> Meanwhile we may profit from another of Wind's helpful observations.

To some of Morelli's critics it has seemed odd 'that personality should be found where personal effort is weakest'. But on this point modern psychology would certainly support Morelli: our inadvertent little gestures reveal our character far more authentically than any formal posture that we may carefully prepare.<sup>8</sup>

'Our inadvertent little gestures' – we can here without hesitation replace the general term 'modern psychology' with the name of Sigmund Freud. Wind's comments on Morelli have indeed drawn the attention of scholars<sup>9</sup> to a neglected passage in Freud's famous essay, 'The Moses of Michelangelo' (1914). At the beginning of the second section Freud writes:

Long before I had any opportunity of hearing about psychoanalysis, I learnt that a Russian art-connoisseur, Ivan Lermolieff, had caused a revolution in the art galleries of Europe by questioning the authorship of many pictures, showing how to distinguish copies from originals with certainty, and constructing hypothetical artists for those works of art whose former authorship had been discredited. He

achieved this by insisting that attention should be diverted from the general impression and main features of a picture, and by laying stress on the significance of minor details, of things like the drawing of the fingernails, of the lobe of an ear, of halos and such unconsidered trifles which the copyist neglects to imitate and yet which every artist executes in his own characteristic way. I was then greatly interested to learn that the Russian pseudonym concealed the identity of an Italian physician called Morelli, who died in 1891. It seems to me that his method of inquiry is closely related to the technique of psychoanalysis. It, too, is accustomed to divine secret and concealed things from despised or unnoticed features, from the rubbish-heap, as it were, of our observations.<sup>10</sup>

'The Moses of Michelangelo' was first published anonymously: Freud acknowledged it only when he included it in his collected works. Some have supposed that Morelli's taste for concealing his authorship behind pseudonyms somehow also affected Freud; and several more or less plausible attempts have been made to explain the coincidence. There is in any case no doubt that under the cloak of anonymity Freud declared, explicitly but also in a sense covertly, the considerable influence that Morelli had exercised on him long before his discovery of psychoanalysis. To confine this influence to 'The Moses of Michelangelo' essay alone, as some have done, or even just to the essays connected with art history, improperly reduces the significance of Freud's own comment, 'It seems to me that his method of enquiry is closely related to the technique of psychoanalysis'. In fact, the passage quoted above assures Giovanni Morelli of a special place in the history of psychoanalysis. We are dealing here with a documented connection, not merely a conjectured one as in many of the claims of 'antecedents' or 'precursors' of Freud; moreover, as we have shown, Freud came across Morelli's writings before his work on psychoanalysis. Here we have an element which contributed directly to the crystallisation of psychoanalysis, and not (as with the passage on the dream of J. Popper 'Lynkeus' which was inserted in later editions of *The Interpretation of Dreams*) just a coincidence noticed later on, after his discoveries.

### *Freud and Morelli*

Before we try to understand what Freud took from his readings of Morelli, we should clarify the precise timing of the encounter – or rather, from Freud's account, of the two encounters, 'Long before I had any opportunity of hearing about psychoanalysis I learnt that a Russian art-connoisseur, Ivan Lermolieff . . .'; 'I was then greatly interested to learn that the Russian pseudonym concealed the identity of an Italian physician called Morelli . . .'

The first of these can only be dated very roughly. It must have been before 1895, (when Freud and Breuer published their *Studies on Hysteria*); or 1896 (when Freud first used the term psychoanalysis);<sup>11</sup> and after 1883, when Freud (in December) wrote his fiancée a long letter about his 'discovery of art' during a visit to the Dresden Gallery. Before that he had had no interest in painting; now, he wrote, 'I have thrown off my philistinism and begun to admire it'.<sup>12</sup> It is hard to imagine that before this date Freud could have been attracted by the writings of an unknown art historian; but it is perfectly plausible that he should start reading them after this letter – especially as the first collected edition of Morelli's essays (Leipzig 1880) contained those which dealt with the Italian old masters in the galleries of Munich, *Dresden*, and Berlin.<sup>13</sup>

Freud's second encounter with Morelli's writings can be dated with more confidence, though still presumptively. Ivan Lermolieff's real name was made public for the first time on the title-page of the English translation of the collection, which came out in 1883; later editions and translations, from 1891 when Morelli died, carried both name and pseudonym. A copy of one of these volumes could possibly have been seen by Freud earlier or later, but it was most likely in September 1898, browsing in a Milan bookshop, that he came upon Lermolieff's real identity. In Freud's library, which is preserved in London, there is a copy of Giovanni Morelli (Ivan Lermolieff's book, *Della pittura italiana: studii storico critici – Le gallerie Borghese e Doria Pamphili in Roma* (Critical historical studies in Italian painting: the Borghese and Doria Pamphili Galleries in Rome), published in Milan in 1897. A note in the front records its acquisition: Milan 14 September.<sup>14</sup> Freud's only visit to Milan was in the autumn of 1898. At that time, moreover, Morelli's book would have a particular interest for Freud. He had been working for several months on lapses of memory – shortly before this, in Dalmatia, he had had the experience (later analysed in *The Psychopathology of Everyday Life*) of being unable to recall the name of the painter of the Orvieto frescoes. Both that painter, Signorelli, and Botticelli and Botraffio, whose names kept substituting themselves, were mentioned in Morelli's book.<sup>15</sup>

But what significance did Morelli's essays have for Freud, still a young man, still far from psychoanalysis? Freud himself tells us: the proposal of an interpretative method based on taking marginal and irrelevant details as revealing clues. Here details generally considered trivial and unimportant, 'beneath notice', furnish the key to the highest achievements of human genius. The irony in this passage from Morelli must have delighted Freud:

My adversaries are pleased to call me someone who has no understanding of the spiritual content of a work of art, and who therefore gives particular importance to external details such as the form of the hands, the ear, and even, *horribile dictu* [how shocking], to such rude things as fingernails.<sup>16</sup>

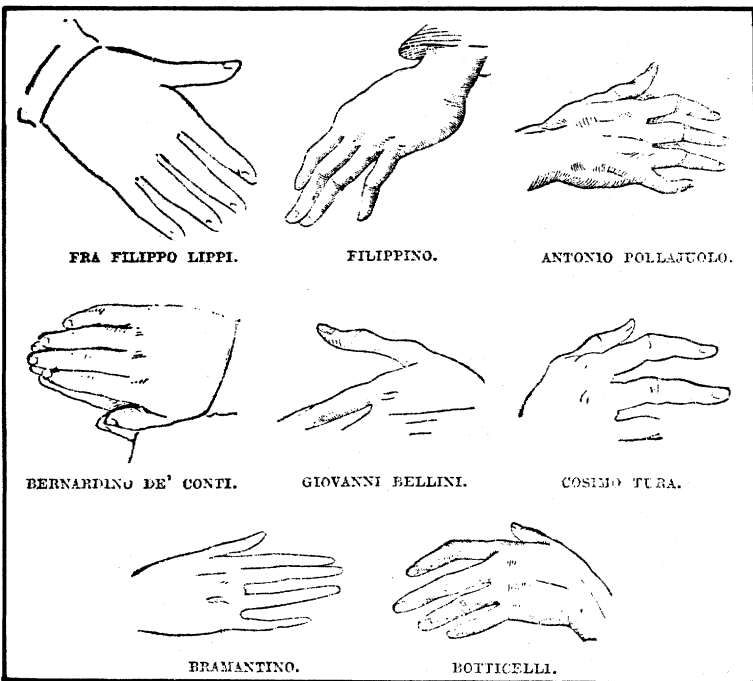
Morelli could have made good use of the Virgilian tag so dear to Freud, which he chose as the epigraph for *The Interpretation of Dreams*, 'Flectere si nequeo Superos, Acheronta movebo' ('And if Heaven I cannot bend, then Hell shall be unleashed'). Furthermore, these marginal details were revealing, in Morelli's view, because in them the artist's subordination to cultural traditions gave way to a purely individual streak, details being repeated in a certain way 'by force of habit, almost unconsciously'. Even more than the reference to the unconscious – not exceptional in this period – what is striking here is the way that the innermost core of the artist's individuality is linked with elements beyond conscious control.

### *The Triple Analogy: diagnosis through clues*

We have outlined an analogy between the methods of Morelli, of Holmes, and of Freud. We have mentioned the connection between Morelli and Holmes, and that between Morelli and Freud. The peculiar similarities between the activities of Holmes and Freud have been discussed by Steven Marcus.<sup>17</sup> In all three cases tiny details provide the key to a deeper reality, inaccessible by other methods. These details may be symptoms, for Freud, or clues, for Holmes, or features of paintings, for Morelli.<sup>18</sup>



How do we explain the triple analogy? There is an obvious answer. Freud was a doctor; Morelli had a degree in medicine; Conan Doyle had been a doctor before settling down to write. In all three cases we can invoke the model of *medical semiotics*, or symptomatology – the discipline which permits diagnosis, though the disease cannot be directly observed, on the basis of superficial symptoms or signs, often irrelevant to the eye of the layman, or even of Dr Watson. (Incidentally, the Holmes-Watson pair, the sharp-eyed detective and the obtuse doctor, represents the splitting of a single character, one of the youthful Conan Doyle's professors, famous for his diagnostic ability.)<sup>19</sup> But it is not simply a matter of biographical coincidences. Towards the end of the 19th century (more precisely, in the decade 1870-80), this 'semiotic' approach, a paradigm or model based on the interpretation of clues, had become increasingly influential in the field of human sciences. Its roots, however, were far more ancient.



Typical hands, from *Italian painters*.

## ROOTS OF THE CONJECTURAL MODEL

### *Hunters and diviners*

For thousands of years mankind lived by hunting. In the course of endless pursuits hunters learned to construct the appearance and movements of an unseen quarry through its tracks – prints in soft ground, snapped twigs, droppings, snagged hairs or feathers, smells, puddles, threads of saliva. They learnt to sniff, to observe, to give meaning and context to the slightest trace. They learnt to make complex calculations in an instant, in shadowy wood or treacherous clearing.

Successive generations of hunters enriched and passed on this inheritance of knowledge. We have no verbal evidence to set beside their rock paintings and artefacts, but we can turn perhaps to the folk tale, which sometimes carries an echo – faint and distorted – of what those far-off hunters knew. Three brothers (runs a story from the middle east told among Khirgiz, Tartars, Jews, Turks and so on)<sup>20</sup> meet a man who has lost a camel (or sometimes it is a horse). At once they describe it to him: it's white, and blind in one eye; under the saddle it carries two skins, one full of oil, the other of wine. They must have seen it? No, they haven't seen it. So they're accused of theft and brought to be judged. There follows the triumph of the brothers: they immediately show how from the barest traces they were able to reconstruct the appearance of an animal they'd never set eyes on.

The three brothers, even if they are not described as hunters, are clearly carriers of the hunters' kind of knowledge, their lore. Its characteristic feature was that it permitted the leap from apparently insignificant facts, which could be observed, to a complex reality which – directly at least – could not. And these facts would be ordered by the observer in such a way as to provide a narrative sequence – at its simplest, 'someone passed this way'. Perhaps indeed the idea of a narrative, as opposed to spell or exorcism or invocation, originated in a hunting society, from the experience of interpreting tracks. Obviously this is speculation, but it might be reinforced by the way that even now terms used in the grammatical deciphering of speech draw on hunters' methods – the part for the whole, the cause for the effect – relating to the narrative pole of metonymy (as defined in a well-known essay by Jakobson)<sup>21</sup> and excluding the alternative pole of metaphor. The hunter could have been the first 'to tell a story' because only hunters knew how to read a coherent sequence of events from the silent (though not imperceptible) signs left by their prey.

This 'deciphering' and 'reading' of the animals' tracks is metaphorical. But it is worth trying to understand it literally, as the verbal distillation of a historical process leading, though across a very long time-span, towards the invention of writing. The same connection is suggested in a Chinese tradition explaining the origins of writing, according to which it was invented by a high official who had remarked the footprints of deer in a sandy riverbank.<sup>22</sup> Or abandoning the realms of myth and hypothesis for that of documented history, there are undoubtedly striking analogies between the model we have been developing for hunters, and the model implicit in the texts of Mesopotamian divination, which date from at least 3,000 years BC.<sup>23</sup> Both require minute examination of the real, however trivial, to uncover the traces of events which the observer cannot directly experience. Droppings, footprints, hairs, feathers, in the one case; animals' innards, drops of oil in water, stars, involuntary movements, in the other. It is true that the second group, unlike the first, could be extended indefinitely, since the Mesopotamian diviners read signs of the future in more or less anything. But to our eyes another difference matters more: the fact that divination pointed towards the future, while the hunters' deciphering was of what had actually happened, even if very recently. Yet in terms of understanding, the approach in each case was much alike; the intellectual stages – analysis, comparison, classification – identical, at least in theory. But only of course in theory: the social contexts were quite different. In particular, it has been observed that the invention of writing must have had a great effect on Mesopotamian divination.<sup>24</sup> It gave the gods (besides divinity and their other advantages) the power of communication with their subjects through written messages – on stars, human bodies, everywhere – which the diviners had the task of deciphering. (This was an idea which in turn over thousands of years would flow into

the image of 'the book of nature'.) And the identification of prophecy with the deciphering of characters divinely inscribed was reinforced in real life by the pictographic character of this early writing, 'cuneiform'; it too, like divination, conveyed one thing through another.<sup>25</sup>

The footprint represents a real animal which has gone past. By comparison with the actuality of the footprint, the pictogram is already a huge advance towards intellectual abstraction. But the capacity for abstract thought implied by the introduction of the pictogram is in its turn small indeed beside that required for the transition to a phonetic script. In fact pictographic and phonetic elements survived together in cuneiform writing, just as in the literature of the Mesopotamian diviners gradual intensification of the tendency to generalise from their basic facts did not cancel out their tendency to infer cause from effect.<sup>26</sup> This also explains why the language of Mesopotamian divination was infiltrated by technical terms from the law codes, and also the presence in their texts of fragments relating to the study of physiognomy (judging character from appearance) and of medical symptoms (medical semiotics).<sup>27</sup>

So after a long detour we come back to the questions of symptoms, to medical semiotics – diagnosis from signs or symptoms. We find it in a whole constellation of disciplines (an anachronistic terms of course) with a common character. It might be tempting to distinguish between 'pseudo-sciences' like divination and physiognomy, and 'sciences' like law and medicine, and to explain their differences by the great distance in space and time from the society which we have been discussing. But it would be a superficial explanation. There was a real common ground amongst these Mesopotamian forms of knowledge (if we omit divination through inspiration, which was based on ecstatic possession):<sup>28</sup> an approach involving analysis of particular cases, constructed only through traces, symptoms, hints. Again, the Mesopotamian legal texts do not just list laws and ordinances, but discuss a body of actual cases.<sup>29</sup> In short, there was a basic model for explanation or divination which could be oriented towards past or present or future, depending on the form of knowledge called upon. Towards future – that was divination proper; towards past, present and future – that was the medical science of symptoms, with its double character, diagnostic, explaining past and present, and prognostic, suggesting the likely future; and towards past – that was jurisprudence, or legal knowledge. But lurking behind this model for explanation or prophecy one glimpses something as old as the human race: the hunter crouched in the mud, examining a quarry's tracks.

### *The growth of disciplines based on reading the evidence*

What we have said so far should explain why a Mesopotamian divination text might include how to diagnose an earlier head wound from a bilateral squint;<sup>30</sup> or more generally, the way in which there emerged historically a group of disciplines which all depended on the deciphering of various kinds of signs, from symptoms to writing. Passing on to the civilisations of ancient Greece, we find this group of disciplines changes considerably, with new lines of study developing, like history and philology, and with the newly acquired independence (in terms both of social context and of theoretical approach) of older disciplines like medicine. The body, speech and history were all for the first time subjected to dispassionate investigation which from the start excluded the possibility of divine intervention. This decisive change characterised the culture of the Greek city-states, of which we of course are the heirs. It is less obvious that an important part of this change was played by a model which may be seen as

based on symptoms and signs.<sup>31</sup> This is clearest in the case of Hippocratic medicine, which based its methods on the central concept of the symptom. (The Greek word was *semeion*, whence our semiotics.) Followers of Hippocrates argued that just by carefully observing and registering every symptom it was possible to establish precise histories of each disease, even though the disease as an entity would remain intangible. Their insistence on the evidential nature of medicine almost certainly stemmed from the distinction (expounded by the Pythagorean doctor, Alcmeon) between the certainty of divine knowledge, and the provisional, conjectural nature of human knowledge. If reality was not necessarily clear, then by implication it was right to proceed by building up knowledge of the whole from the parts, using the *conjectural paradigm* which we have been describing, and this was in fact the usual approach in a number of spheres of activity: physicians, historians, politicians, potters, joiners, mariners, hunters, fishermen, and women in general – were held, among others, to be adept in the vast areas of conjectural knowledge.<sup>32</sup> Such territory (significantly the domain of the goddess Metis, first wife of Jove, who represented divination by means of water) was marked off with words like ‘conjecture’, ‘judge by the signs’ (*tekmor, tekmairesthai* – Greek words whose meaning shifts interestingly between boundary, sign, pledge, conjecture). But this evidential approach, this semiotic paradigm, continued to be merely implicit – it was completely overshadowed by Plato’s theory of knowledge, which held sway in more influential circles and had more prestige.<sup>33</sup>

#### *Galileo and the new scientific writing*

Parts of the Hippocratic writings have a surprisingly defensive tone, suggesting that even in the 5th century BC the fallibility of doctors was already under attack. That this battle is not over is presumably because relations between doctor and patient (especially the inability of the latter to check or control the skills of the former) have in some respects not changed since the time of Hippocrates. But what has changed over these 2,500 years is how the debate is conducted, along with changes in concepts like ‘rigour’ and ‘science’. Here of course the decisive shift is the emergence of a new scientific paradigm, based on (but outliving) Galileian physics. Even if modern physics finds it hard to define Galileian (while not rejecting Galileo), the significance of Galileo (1564-1642) for science in general, both in terms of theory of knowledge (epistemology) and as a symbol, remains undiminished.<sup>34</sup> Now it is clear that none – not even medicine – of the disciplines which we have been describing as evidential, conjectural, based on the reading of signs, would meet the criteria of scientific inference essential to the Galileian approach. They were above all concerned with the qualitative, the individual case or situation or document in itself, which meant there was always an element of chance in their results: one need only think of the importance of conjecture (a word whose Latin origin lies in divination)<sup>35</sup> in medicine or philology, let alone in prophetic divination. Galileian science was altogether different – it could have taken over the scholastic saying ‘*individuum est ineffabile*’ (‘we can say nothing about the individual’). Using mathematics and the experimental method involved the need to measure and to repeat phenomena, whereas an individualising approach made the latter impossible and allowed the former only in part. All of which explains why historians have never managed to work out a Galileian method. In the 17th century, on the contrary, the new growth of antiquarian methods among historians indicated indirectly the remote and long-hidden origins of history in the conjectural model. This fact about its source cannot be hidden, in spite of the ever-closer bonds linking it to the social sciences. History always remains a science of a very

particular kind, irremediably based in the concrete. Historians cannot help sometimes referring back (explicitly or by implication) to comparable series of phenomena; but their strategy for finding things out, like the volumes in which they present their work, is basically about particular cases, whether concerning individuals, or social groups, or whole societies. In this way history is like medicine, which uses disease classifications to analyse the specific illness of a particular patient. And the historian's knowledge, like the doctor's, is indirect, based on signs and scraps of evidence, conjectural.<sup>36</sup>

But the contrast I have suggested is an over-simplification. Among the 'conjectural' disciplines one – philology, and particularly textual criticism – grew up to be, in some ways at least, atypical. Its objects were defined in the course of a drastic curtailing of what was seen to be relevant. This change within the discipline resulted from two significant turning points: the invention first of writing and then of printing. We know that textual criticism evolved after the first, with the writing down of the Homeric poems, and developed further after the second, when humanist scholars improved on the first hasty printed editions of the classics.<sup>37</sup> First the elements related to voice and gesture were discarded as redundant; later the characteristics of handwriting were similarly set aside. The result has been a progressive dematerialisation, or refinement, of texts, a process in which the appeal of the original to our various senses has been purged away. A text needs to exist in physical form in order to survive; but its identity is not uniquely bound up in that physical form, nor in any one copy. All this seems self-evident to us today, but it is not at all. Take for example the decisive role of the voice in oral literature, or of calligraphy in Chinese poetry, and it becomes clear that this very notion of a 'text' is itself the result of a cultural choice whose significance is incalculable. And the example of China shows that the choice was not an inevitable consequence of printing replacing handwriting, since there the invention of the press did not sever the ties between literary text and calligraphy. (We shall see shortly that historical discussion of pictorial 'texts' raises quite different problems.)

This thoroughly abstract notion of a text explains why textual criticism, even while remaining to a large degree divinatory, could (and during the 19th century did) emerge as rigorously scientific.<sup>38</sup> The radical decision to exclude all but the reproducible (in writing, or, after Gutenberg, in print) features of a text made it possible, even while dealing with individual examples, to avoid the qualitative, that prime hazard of the humanities. It is surely significant that Galileo, while laying the foundations of modern natural science by a similarly drastic conceptual reduction, himself turned to philology. The traditional mediaeval comparison between world and book assumed that both lay open ready to be read. Galileo emphasised, however, that 'we cannot hope to understand the philosophy written in this great book standing open before our eyes (and by this I mean the universe) unless we learn first to understand its language and to know the characters written there', that is, 'triangles, circles, and other geometric figures'.<sup>39</sup> For the natural philosopher, as for the philologist, the text is an entity, deep and invisible, to be reconstructed through and beyond the available sense data: 'figures, numbers and movements, but not smells or tastes or sounds, which cannot be separated from the living animal except as mere words'.<sup>40</sup>

Galileo here set the natural sciences firmly on a path they never left, which led away from anthropocentrism and anthropomorphism (from an approach explaining everything in relation to human beings), and continued to widen the gap between the fields of knowledge. Certainly there could be no greater contrast than between the Galileian physicist, professionally deaf to sounds and forbidden to taste or smell, and the physician of the same period, who ventured his diagnosis after listening to a wheezy chest, or sniffing faeces, or tasting urine.

*A seventeenth-century connoisseur and physician; problems of identity*

One such physician was Giulio Mancini, from Siena, chief medical man to Urbano VIII (Pope from 1623 to 1644). It does not seem that he knew Galileo well, but the two did probably meet, since they moved in the same circles in Rome, from the Papal Court to the Lincei Academy,\* and had common friends, from Federico Cesi to Giovanni Ciampoli to Giovanni Faber. A vivid sketch of Mancini by Nicio Eritreo, alias Gian Vittorio Rossi, describes his atheism, his extraordinary diagnostic skill (detailed in words straight out of the divinatory texts), and his interest in meeting anyone with a reputation for great intelligence.<sup>41</sup> Mancini wrote a book called *Alcune considerazioni appartenenti alla pittura come di diletto di un gentiluomo nobile e come introduzione a quello che si deve dire* (Some considerations concerning painting as an amusement for a noble gentleman, and introducing what needs to be said), which had a wide circulation in manuscript.<sup>42</sup> As its title says, it was aimed at noble amateurs rather than at painters – at those dilettanti who in ever greater numbers flocked to the Pantheon for the annual exhibition of paintings old and new.<sup>43</sup> Certainly the most original part of Mancini's *Considerazioni* is that devoted to 'the recognition of paintings', which sets out a method for identifying fakes, for telling originals from copies, and so on.<sup>44</sup> This would never have been written before. So this first attempt to establish connoisseurship, as it was to be called a century later, was made by a doctor famous for his brilliant diagnoses, who on visiting a patient 'could divine' (*divinabat*) with one rapid glance the seat of the disease.<sup>45</sup> We may surely see more than coincidence in this double skill, in his combination of the doctor's and the connoisseur's perceptions.

But before examining Mancini's views more closely, we should go into an assumption shared by him, the gentlemen he wrote for, and ourselves. It is an assumption not declared, since (wrongly) it is taken to be obvious: it is that between a canvas by Raphael and any copy of it (painted, engraved, or today photographed) there is an ineradicable difference. The implications of this for the market – that a painting is by definition unique, impossible to repeat<sup>46</sup> – are plain, and they are connected with the emergence of the connoisseur. But the assumption arises from a cultural choice which must not pass unremarked, especially as a different one was made in the case of written texts. (The presumed eternal worth of the paintings or writings is not part of this argument.) We have already seen how historical developments gradually stripped the written text of features not considered relevant. In the case of paintings this denuding has not taken place (so far at least). This is why we think that while manuscript or printed copies of *Orlando Furioso* can exactly reproduce the text Ariosto intended, a copy of a Raphael portrait never can.<sup>47</sup>

The differing status of the copy in painting and in literature explains why Mancini could not make use of the techniques of criticism when developing the methods of the connoisseur, though he was basically establishing an analogy between the act of painting and the act of writing. But because he started with this analogy, he had to turn for help to other disciplines, which were still taking shape.

Mancini's first problem concerned the dating of paintings. To do this, he said, you had to acquire 'a certain experience in recognising the painting of particular periods, just as antiquarians and librarians have for scripts, so that they can tell when something was written.' The allusion to recognising scripts almost certainly refers to

\*The Lincei Academy, founded by Federico Cesi in 1603, was the centre of a thriving intellectual group at this time in Rome.

the methods worked out in these same years by Leone Allacci, librarian at the Vatican for dating Greek and Latin manuscripts – methods which were taken up again and developed half a century later by Mabillon, the founder of palaeography (as the study of ancient writing came to be called).<sup>48</sup> But ‘besides the common characteristics of the time’, continues Mancini, ‘there are the characteristics peculiar to the individual’, just as ‘we see among handwritings that they have their distinctive characteristics’. So the analogy between writing and painting is made first at the general level (the period), and then renewed at the other end of the scale (the individual). For this range the proto-palaeographic methods of an Allacci would not work. But there was in these years one solitary attempt to apply analysis to individual handwriting for a new purpose. Mancini, in his capacity as physician, quoting Hippocrates, said that an impression of character (the ‘spirit’) could be drawn from what it produced (its ‘works’), all being rooted in the ‘characteristics’ of the individual body. ‘For this reason some fine intellects of our age have written arguing that it is possible to reveal a person’s intellect and mind through that person’s way of writing and through their handwriting.’ One of these ‘fine intellects’ was in all probability Camillo Baldi, a doctor from Bologna, who included in his *Trattato come da una lettera missiva si conoscano la natura e qualita dello scritte* (Treatise on how to tell from a letter the nature of its writer), a chapter which is probably the first European text on graphology. ‘What meanings’ – the chapter heading runs – ‘may one read in the shaping of the letters?’ (*nella figura del carattere*). The word used here for ‘letter’ is ‘character’, meaning the shape of the letter as it is drawn with the pen on the paper.<sup>49</sup> But in spite of the words of praise quoted above, Mancini was not interested in the claims of this burgeoning graphology to reconstruct writers’ personalities by establishing their ‘characters’ (in the psychological sense) from their ‘characters’ (the shapes of their letters). (Yet again the origins of the double meaning may be traced back to an originally shared disciplinary context.) He was struck, however, by one proposition in the new discipline, that is, the variety of different handwritings and the impossibility therefore of imitating them. By identifying the elements in painting which were equally impossible to imitate, he would achieve his aim of telling originals from fakes, the hand of the master from that of the copyist or the follower. Hence his advice to check with each painting:

whether the hand of the master can be detected, especially where it would take much effort to sustain the imitation, as in hair, beards or eyes. Curls and waves of hair, if they are to be reproduced exactly, are very laborious to do; this will show in the painting, and if the copyist fails to get them right they will lack the perfection of the master’s version. And these parts of a painting are like strokes of the pen and flourishes in handwriting, which need the master’s sure and resolute touch. The same care should be taken to look for particularly bold or brilliant strokes, which the master throws off with an assurance that cannot be matched; for instance in the folds and glints of drapes, which may have more to do with the master’s bold imagination than with the truth of how they actually hung.<sup>50</sup>

So the parallel between painting and writing, which Mancini has already made in various contexts, is here given a new twist, and one which previously had only been hinted at, in a work by the architect Filarete (see below), which Mancini may not have known.<sup>51</sup> The analogy is reinforced by the use of technical terms current in contemporary treatises on writing, like ‘boldness’, ‘strokes’, ‘flourishes’.<sup>52</sup> Even the dwelling on speed has the same origin: with new bureaucratic developments an elegant cursive

legal hand needed also to be fast if it were to succeed in the copyists' market. In general, the stress Mancini placed on decorative features is evidence of careful attention to the characteristics of handwriting models prevalent in Italy in the late 16th and early 17th centuries.<sup>53</sup> Studying how letters were formed led him to conclude that the master's touch could most confidently be identified in parts of the painting which (i) were swiftly executed, and (ii) tended not to be close representations of the real thing (details of hair, draperies whose folds had 'more to do with the master's bold imagination than with the truth of how they actually hung'). We shall come back to the rich implications of these two points, which Mancini and his contemporaries were not yet in a position to develop.

### *Character and individuality*

'Characters' (*caratteri*). The word more or less as we use it goes back to about 1620. It occurs in the writings of the founder of modern physics, on the one hand, and on the other, of the originators respectively of palaeography, graphology and connoisseurship. Of course, it is only a metaphorical relationship that links the insubstantial 'characters' which Galileo with the eyes of the intellect saw in the book of nature, and those which Allacci, Baldi or Mancini deciphered on actual paper or parchment or canvas. But the use of identical terms makes it all the more striking that the disciplines we have assembled should be so diverse. How scientifically they were used (in the Galileian sense) varies too, declining swiftly from the universal 'characters' of geometry, through the literary features constituting the 'common character of a period', to the individual 'character' of a style of painting or even writing.

This decreasing level of scientific content reinforces the argument that the real difficulty in applying the Galileian model lay in the degree to which a discipline was concerned with the individual. The more central were features to do with the individual, the more impossible it became to construct a body of rigorously scientific knowledge. Of course the decision to ignore individual features would not of itself guarantee that the methods of mathematics and physics indispensable to adopting the Galileian model were actually going to be applied, but on the other hand it would not exclude them altogether.

### *Scientific generalisation versus the particular*

At this point, then, there were two possible approaches: to sacrifice understanding of the individual element in order to achieve a more or less rigorous and more or less mathematical standard of generalisation; or to try to develop, however tentatively, an alternative model based on an understanding of the individual which would (in some way yet to be worked out) be scientific. The first approach was that taken by the natural sciences, and only much later on by the so-called human or social sciences. The reason is obvious. The likelihood of obliterating individual features relates directly to the emotional distance of the observer. Filarete, in a page of his *Trattato di architettura* (Treatise on Architecture), after arguing that it is impossible to build two completely identical buildings, since whatever the first impression there would always be differences of detail (just as 'Tartar snouts all look the same, or Ethiopian ones all black, but when you look more carefully they are all different as well as alike'), goes on to admit that there are 'some creatures which are so alike, as with flies, ants, worms, frogs, and many fish, that they cannot be told apart'.<sup>54</sup> So for a European architect, the slight differences between two (European) buildings were important, those between Tartar or Ethiopian faces were not, and those between two worms or two ants



simply didn't exist. A Tartar architect, an Ethiopian unversed in architecture, or an ant would rank things differently. Knowledge based on making individualising distinctions is always anthropocentric, ethnocentric, and liable to other specific bias. Of course even animals or minerals or plants can be examined for their individual properties, for instance in the context of divination;<sup>55</sup> especially with cases which show abnormalities. But in the first decades of the 17th century the influence of the Galileian model (even where not direct) would lead towards study of the typical rather than the exceptional, towards a general understanding of the workings of nature rather than particularistic, conjectural knowledge. In April 1625 a calf with two heads was born near Rome. The naturalists from the Lincei Academy took an interest. It was the subject of a discussion amongst a group in the Vatican Belvedere Gardens: it included Giovanni Faber, the Academy's secretary, and Giovanni Ciampoli (both, as we have noted, friends of Galileo), Mancini, Cardinal Agostino Vegio, and Pope Urbano VIII. Their first question was whether the two-headed calf should count as one animal or as two. For the physicians, the feature distinguishing the individual was the brain; for followers of Aristotle, the heart.<sup>56</sup> As Mancini was the only physician present, we may assume that Faber's report of the physicians' standpoint brings us the echo of his contribution. In spite of his astrological interests<sup>57</sup> he considered the specific character of the monster-birth with the object not of revealing the future, but of arriving at a more accurate definition of what was normal – and therefore repeatable – for the individual of the species. Mancini will have examined the anatomy of the two-headed calf with the same close attention he customarily gave to paintings. But that is where the analogy with the connoisseur must stop. To some extent a figure like Mancini represents the point of contact between the divinatory approach (in his activities as diagnostician and connoisseur), and the generalising model (as anatomist and naturalist). But he also encapsulates the differences between them. Contrary to what it might seem, the dissection of the calf so precisely described by Faber, with the tiny incisions made so as to reveal the internal organs of the creature,<sup>58</sup> was done with the aim of establishing not the 'character' peculiar to that particular animal, but 'the common character' (turning from history to natural history) of the species as a whole. It was a continuation and refinement of the tradition of natural history – founded by Aristotle. Sight, symbolised by the sharp eye of the lynxes in the crest of Federico Cesi's Lincei Academy, was the central organ in these disciplines, which were not allowed the extra-sensory eye of mathematics.<sup>59</sup>

### *The human sciences – anchored in the qualitative*

These included – apparently at least – the human or social sciences (as we would define them today). This might be expected, perhaps, if only because of their stubborn anthropocentrism, which we have already illustrated in the graphic quotation from Filarete. But there were attempts to apply the mathematical method even to the study of human phenomena.<sup>60</sup> It is not surprising that the first and most successful of these concerned political arithmetic, and took as its subject the most pre-determined – biologically speaking – of human activities: birth, procreation and death. This drastically exclusive focus permitted rigorous investigation; and at the same time satisfied the military or fiscal purposes of absolute states, whose interest, given the limits of their operations, was entirely in numbers. But if the patrons of the new science, statistics, were not interested in qualitative as opposed to quantitative factors, this did not mean that it was totally cut off from the world of what we have been calling the conjectural

(or divinatory) disciplines. Calculations concerning probability (as in the title of Bernoulli's classic *The Art of Conjecture* (Ars Conjectandi, 1713, posthumous)), tried to give rigorous mathematical formulation to the same problems as – in a totally different way – had been tackled by conjecture and divination.<sup>61</sup>

Still, the group of human sciences remained firmly anchored in the qualitative – though not without misgiving, especially in the case of medicine. Although progress had been made, its methods still seemed uncertain, its results unpredictable. Such a text as *The Certitude of Medicine*, by the French ideologue Cabanis, which appeared at the end of the 18th century,<sup>62</sup> admitted this lack of rigour, while at the same time insisting that medicine was nevertheless scientific in its own way. There seem to have been two basic reasons for medicine's lack of certainty. In the first place, descriptions of particular diseases which were adequate for their theoretical classification were not necessarily adequate in practice, since a disease could present itself differently in each patient. In the second place, knowledge of a disease always remained indirect and conjectural: the secrets of the living body were always, by definition, out of reach. Once dead of course it could be dissected, but how did one make the leap from the corpse, irreversibly changed by death, to the characteristics of the living individual?<sup>63</sup> Recognising this double difficulty inevitably meant admitting that even the efficacy of medical procedures could not be proved. Finally, the proper rigour of the natural sciences could never be achieved by medicine, because of its inability to quantify (except in some purely auxiliary aspects); the inability to quantify stemmed from the impossibility of eliminating the qualitative, the individual; and the impossibility of eliminating the individual resulted from the fact that the human eye is more sensitive to even slight differences between human beings than it is to differences between rocks or leaves. The discussions on the uncertainty of medicine provided early formulations of what were to be the central epistemological problems in the human sciences.

### *The expropriation of common knowledge*

Between the lines of Cabanis's book there shines through an impatience which is not hard to understand. In spite of the more or less justified objections to its methods which could be made, medicine for all that remained a science which received full social recognition. But not all the conjectural disciplines fared so well in this period. Some, like connoisseurship, of fairly recent origin, held an ambiguous position on the borders of the acknowledged disciplines. Others, more embedded in daily practice, were kept well outside. The ability to tell an unhealthy horse from the state of its hooves, a storm coming up from a shift in the wind, or unfriendly intentions from the shadow in someone's expression, would certainly not be learnt from treatises on the care of horses, or on weather, or on psychology. In each case these kinds of knowledge – of lore – were richer than any written authority on the subject; they had been learnt not from books but from listening, from doing, from watching; their subtleties could scarcely be given formal expression – they might not even be reducible to words; they might be a particular heritage, or they might belong to men and women of any class. A fine common thread connected them: they were all born of experience, of the concrete and individual. That concrete quality was both the strength of this kind of knowledge, and its limit – it could not make use of the powerful and terrible tool of abstraction.<sup>64</sup>

From time to time attempts would be made to write down some part of this lore, locally-rooted but without known origin or record or history,<sup>65</sup> to fit it into a strait-

jacket of terminological precision. This usually constricted and impoverished it. One need only think of the gulf separating the rigid and schematic treatises of physiognomy (judging character or mood from the appearance) from its perceptive and flexible practice by a lover or a horse-dealer or a card-player. It was perhaps only with medicine that the codifying and recording of conjectural lore produced a real enrichment; but the story of the relation between official and popular medicine has still to be written. In the course of the 18th century things changed. In a real cultural offensive the bourgeoisie appropriated more and more of the traditional lore of artisans and peasants, some of it conjectural, some not; they organised and recorded it, and at the same time intensified the massive process of cultural invasion which had already begun, though taking different forms and with different content, during the counter-reformation. The symbol and crucial instrument of this offensive was the French *Encyclopédie*. But one would also have to analyse such small but revealing incidents as when Winckelmann (the 18th century archaeologist) learnt from an unnamed Roman mason that the mysterious unidentified little stone concealed in the hand of a statue discovered at Porto d'Anzio was 'the stopper or cork of a little bottle'.

The systematic collecting of such 'little insights', as Winckelmann called them elsewhere,<sup>66</sup> was the basis of fresh formulations of ancient knowledge during the 18th and 19th centuries, from cookery to water resources to veterinary science. As the number of readers grew, so access to specific experience was increasingly had through the pages of books. The novel provided the bourgeoisie with a substitute, on a different level, for initiation rites, that is for access to real experience altogether.<sup>67</sup> And indeed it was thanks to such works of imagination that the 'conjectural model' in this period had a new and unexpected success.

### *Hunter to detective*

In connection with the hypothetical origin of the conjectural model among long-ago hunters, we have already told the story of the three brothers who by interpreting a series of traces reconstruct the appearance of an animal they have never seen. This story made its European debut in a collection by Sercambi.<sup>68</sup> It subsequently reappeared as the opening to a much larger collection of stories, presented as translations into Italian from Persian by an Armenian called Christopher, which came out in Venice in the mid-16th century under the title *Peregrinaggio di tre giovani figliuoli del re di Serendippo* (Travels of the three young sons of the king of Serendippo). This book went through a number of editions and translations – first into German, then, during the eighteenth-century fashion for things oriental, into the main European languages.<sup>69</sup> The success of this story of the sons of the king of Serendippo was what led Horace Walpole in 1745 to coin the word 'serendipity', for the making of happy and unexpected discoveries 'by accidents and sagacity'.<sup>70</sup> Some years before, Voltaire, in the third chapter of *Zadig*, reworked the first volume of *Travels*, which he had read in the French translation. In his version the camel of the original becomes a bitch and a horse, which *Zadig* is able to describe in detail by deciphering their tracks. Accused of theft and taken at once before the judges, *Zadig* proves his innocence by recounting the mental process which had enabled him to describe the animals he had never seen:

I saw in the sand the tracks of an animal, and I judged without difficulty that it was a small dog. Long shallow furrows across mounds in the sand, between the paw-prints, told me that it was a female with sagging teats, who had therefore recently given birth . . .<sup>71</sup>

In these lines and in those which follow lies the embryo of the detective story. They inspired Poe and Gaboriau directly, and perhaps indirectly Conan Doyle.<sup>72</sup>

The extraordinary success of the detective story is well-known; we shall return to some of the reasons for it. But for the moment it is worth remarking that it is based on a cognitive model which is at once very ancient and very new. We have already discussed its ancient roots. For its modern elements we shall quote Cuvier's praise in 1834 for the methods and successes of the new science of palaeontology:

Today, someone who sees the print of a cloven hoof can conclude that the animal which left the print was a ruminative one, and this conclusion is as certain as any that can be made in physics or moral philosophy. This single track therefore tells the observer about the kind of teeth, the kind of jaws, the haunches, the shoulder, and the pelvis of the animal which has passed: it is more certain evidence than all Zadig's clues.<sup>73</sup>

More certain perhaps, but of a very comparable kind. The name of Zadig came to stand for so much that in 1880 Thomas Huxley, in a series of lectures aimed at publicising the discoveries of Darwin, defined as 'Zadig's method' the procedure common to history, archaeology, geology, physical astronomy and palaeontology: that is, the making of retrospective predictions. These disciplines, being deeply concerned with historical development, could scarcely avoid falling back on the conjectural or divinatory model (Huxley indeed made explicit reference to prophecy directed towards the past),<sup>74</sup> and abandoning the Galileian model. When causes cannot be repeated, there is no alternative but to infer them from their effects.

## USES OF THE CONJECTURAL MODEL

### *Its complex character*

This inquiry may be compared to following the threads in a piece of weaving. We have now reached the point where they can be seen to make a composite whole, a homogeneous and closely woven cloth. To check the coherence of the pattern we cast an eye along different lines. Vertically, this gives us the sequence Serendippo – Zadig – Poe—Gaboriau—Conan Doyle. Horizontally: the juxtaposition at the beginning of the 18th century by Dubos, the literary critic, in order of increasing reliability, of medicine, connoisseurship, and identification through handwriting.<sup>75</sup> Last, diagonally – passing from one historical context to another: like Gaboriau's detective hero, Monsieur Lecocq, who felt he was crossing 'an unknown territory, covered with snow', marked with the tracks of the criminal, like 'a vast white page on which the people we are searching for have left not only footprints and traces of movements but also the prints of their innermost thoughts, the hopes and fears by which they are stirred',<sup>76</sup> here we see filing past us the authors of treatises on physiognomy, Babylonian seers intent on reading the messages written in heaven and earth, and neolithic hunters.

The cloth is the paradigm which we have summoned up from way back, out of various contexts – hunting, divining, conjectural, or semiotic. These are obviously not synonyms, but alternative descriptions, which nevertheless refer back to a common epistemological model, worked out for a number of disciplines, themselves often linked by borrowed methods or key words. Now between the 18th and the 19th

century, with the emergence of the ‘human sciences’, the constellation of conjectural disciplines changed profoundly: new stars were born, which (like phrenology)<sup>77</sup> were soon to fall, or which (like paleontology) would achieve great things, but above all it was medicine which confirmed its high status, both socially and in the standing of its theory. It became the reference point, explicit or by implication, of all the human sciences. But what area of medicine? Around the middle of the 18th century two alternatives became visible: the anatomical model, and the semiotic. The metaphor of ‘the anatomy of the state’, used in a critical passage by Marx,<sup>78</sup> expresses the aspiration for a system of knowledge, at a time when the last great system of philosophy – Hegelianism – was already crumbling. But in spite of the great success of Marxism, the human sciences ended up by more and more accepting (with an important exception which we shall come to) the conjectural paradigm of semiotics. And here we return to the Morelli-Freud-Conan Doyle triad where we began.

### *From nature to culture*

So far we have been using the term conjectural paradigm-(and its variants) broadly. It is time to take it to pieces. It is one thing to analyse footprints, stars, faeces (animal or human), colds, corneas, pulses, snow-covered fields or dropped cigarette ash; and another to analyse writing or painting or speech. The distinction between nature (inanimate or living) and culture is fundamental – certainly much more important than the far more superficial and changeable distinctions between disciplines. Now Morelli’s idea was to trace out within a culturally determined sign-system the conventions of painting, signs which like symptoms (and like most clues) were produced involuntarily. Not just that: in these involuntary signs, in the ‘tiny details – a calligrapher would call them flourishes’ such as the ‘favourite words and phrases’ which ‘most people, whether talking or writing, make use of without meaning to and without noticing that they do so’, Morelli located the most certain clue to artistic identity.<sup>79</sup> Thus Morelli inherited (even if indirectly)<sup>80</sup> and developed the methodological principles formulated so long before by his predecessor, Giulio Mancini. The time at which these principles came after so long to fruition was perhaps not altogether random. It coincided with the emergence of an increasingly clear tendency for state power to impose a close-meshed net of control on society, and once again the method used, as we shall see, involved attributing identity through characteristics which were trivial and beyond conscious control.

### *Identification of the individual in society*

Every society needs to distinguish its members, but the ways of meeting this need vary with place and time.<sup>81</sup> There is, first of all, the name; but the more complex the society, the less satisfactorily a name can represent the individual’s identity without confusion. In Egypt during the Graeco-Roman period, for instance, a man who came to a notary wanting to get married or to carry out some financial transaction would have to set down not only his name but also brief details of his appearance, including any scars or other particular marks.<sup>82</sup> But even so the chances of mistake or of fraudulent impersonation remained high. By comparison, a signature at the bottom of a contract was much better: at the end of the 18th century the abbot Lanzi, in a passage of his *Storia pittorica* (History of Painting) which discussed the methods of the connoisseur, maintained that the impossibility of imitating handwriting was intended by nature for the ‘security’ of ‘civil society’ (that is to say bourgeois society).<sup>83</sup> Even signatures

could of course be faked; and above all, they provided no check on the illiterate. But in spite of these shortcomings, European societies over centuries felt no need for more reliable or practical means of identification – not even when large-scale industrial development, the social and geographical mobility which it produced, and the rapid growth of vast urban concentrations had completely changed the fundamentals of the problem. But in this kind of society it was child's play to cover one's tracks and reappear with a new identity – and not only in London or Paris. Yet it was only in the last decades of the 19th century that new systems of identification – competing with each other – began to be put forward. This followed on contemporary developments in class struggle: the setting up of an international workers' association, the repression of working-class opposition after the Paris Commune, and refinements in the definition of crime.

In England from about 1720 onwards,<sup>84</sup> in the rest of Europe (with the Napoleonic code) a century or so later, the emergence of capitalist relations of production led to a transformation of the law, bringing it into line with new bourgeois concepts of property, and introducing a greater number of punishable offences and punishment of more severity. Class struggle was increasingly brought within the range of criminality, and at the same time as a new prison system was built up, longer sentences were imposed.<sup>85</sup> But prison produces criminals. In France the number of further offences was rising steadily from 1870, and towards the end of the century was about half of all cases brought to trial.<sup>86</sup> The problem of identifying previous offenders, which developed in these years, was the bridgehead of a more or less conscious project of keeping a complete and general check on the whole of society.

For this identification of previous offenders it was necessary to show (i) that a person had previously been convicted, and (ii) that the person in question was the same as the one previously convicted.<sup>87</sup> The first problem was resolved by the setting up of police files. The second was more difficult. The ancient punishments which had involved marking or mutilating an offender for life had been abolished. The lily branded on Milady's shoulder had allowed D'Artagnan (in Dumas's *The Three Musketeers*, set in the 17th century) to recognise her as a poisoner already in the past punished for her misdeeds – whereas in his *The Count of Montecristo*, or in Hugo's *Les Misérables*, the escaped prisoners Edmond Dantes and Jean Valjean were able to reappear on the social scene respectable in false identities. These examples should convey the hold which the old offender had on the 19th century imagination.<sup>88</sup> Bourgeois respectability required some identifying sign which would be as indelible as those imposed under the Ancien Regime, but less bloodthirsty and humiliating.

The idea of an immense photographic archive was at first rejected because it posed such huge difficulties of classification: how could separate components be isolated in the continuum of images?<sup>89</sup> The path of quantification seemed easier and more rigorous. From 1879 onwards an employee at the prefecture of Paris, Alphonse Bertillon, developed an anthropometric method (which he set out in various writings)<sup>90</sup> based on careful measuring of physical details, which were then combined on each person's card. Obviously a miscarriage of justice could result (theoretically) from a mistake of a few millimetres; but there was a still more serious defect in Bertillon's anthropometric system, the fact that it was purely negative. It permitted the elimination of those whose details on examination did not match up, but it could not prove that two sets of identical details both referred to the same person.<sup>91</sup> The elusive quality of individuality could not be shut out – chased out through the door by quantification, it came back through the window. So Bertillon proposed combining the

anthropometric method with what he called a word-portrait, that is, a verbal description analysing particular details (nose, eyes, ears and so on) which altogether was supposed to reconstitute the image of the whole person, and so to allow identification. The pages of ears presented by Bertillon<sup>92</sup> irresistably recall the illustrations which in the same years accompanied Morelli's writings. There may not have been a direct connection, yet it is striking how Bertillon, also an expert on handwriting, took as sure indices of forgery the idiosyncratic details which the forger could not reproduce, however close he got to the original.

As will be obvious, Bertillon's method was incredibly complicated. We have already noted the difficulties posed by measurement. The 'word-portrait' made things still worse. What was the difference between a protuberant hooked nose and a hooked protuberant nose? How did you classify the exact shade of blue-green eyes?<sup>93</sup>

But a method of identification which made both the collection and the classification of data much easier was put forward in 1888 by Galton, in a memoir which was later revised and expanded.<sup>94</sup> This, as is well-known, was based on fingerprints. As Galton himself quite properly admitted, he was not the first to suggest it.

The scientific analysis of fingerprints began in 1823 with a work by Purkyně, the founder of histology [the study of organic tissues], called *Commentatio de examine physiologico organi visus et systematis cutanei* (Commentary on the physiological examination of the organs of sight and the skin system).<sup>95</sup> He distinguished and described nine basic types of line in the skin, but argued that no two individuals ever had identical combinations in their fingerprints. The practical implications of this were ignored, though not the philosophical, which were taken up in a chapter called 'De cognitione organismi individualis in genere' ('On the general recognition of individual organisms'). Knowledge of the individual was central to medical practice, he said, starting from diagnosis—symptoms took different forms in different individuals, and therefore equally required different treatment for their cure. Some modern writers, he said (without naming them), had defined practical medicine as 'the art of individualising' (*die Kunst des Individualisierens*).<sup>96</sup> But it was the physiology of the individual that was really fundamental to this art. Here Purkyně, who as a youth had studied philosophy at Prague, echoed the most central themes of Leibniz's thought. The individual, 'the being in every way determined (*ens omnimodo determinatum*)', has an identity which can be recognised in his every characteristic, even the most imperceptible and slightest. Neither circumstance nor outside influence are enough to explain it. It has to be supposed that there is an internal norm or 'typus' which maintains the variety of each species within its limits: knowledge of this norm (as Purkyně prophetically affirmed) 'would reveal the hidden understanding of individual nature'. The mistake of physiognomy had been to subject individual variation to preconceptions and hasty conjectures: this had made it impossible till then to establish a scientific descriptive study of faces. Abandoning the study of palms to the 'useless science' of chiromancy, Purkyně focusses his own attention on something much less obvious: it was the lines on thumb and fingertips which provided him with the hidden proof of individuality.

Let us leave Europe for the moment and look at Asia. Unlike their European counterparts, and quite independently, Chinese and Japanese diviners had taken an interest in these scarcely visible lines which criss-cross the skin of the hand. And in Bengal, as well as in China, there was a custom of imprinting letters and documents with a fingertip dipped in ink or tar:<sup>97</sup> this was probably a consequence of knowledge derived from divinatory practice. Anyone who was used to deciphering mysterious

messages in the veins of stone or wood, in the traces left by birds, or in the shell of a tortoise,<sup>98</sup> would find it easy to see a kind of message in the print of a dirty finger. In 1860 Sir William Herschel, District Commissioner of Hooghly in Bengal, came across this usage, common among local people, saw its usefulness, and thought to profit by it to improve the functioning of the British administration. (The theoretical aspects of the matter were of no interest; he had never heard of Purkyně's Latin discourse, which had already lain unread for half a century.) But really, as Galton was to observe, there was a great need for some such means of identification: in India as in other British colonies the natives were illiterate, disputatious, wily, deceitful, and to the eyes of a European all looked the same. In 1880 Herschel announced in *Nature* that after 17 years of tests, fingerprints had been officially introduced in the district of Hooghly, and since then had been used for three years with the best possible results.<sup>99</sup> The imperial administrators had taken over the Bengalis' conjectural knowledge, and turned it against them.

Herschel's article served Galton as starting-point for a systematic reorganisation of his thought on the whole subject. His research had been made possible by the convergence of three separate elements: the discoveries of a pure scientist, Purkyně; the concrete knowledge, tied in with everyday practice, of the Bengali populace; and the political and administrative acumen of Sir William Herschel, faithful servant of Her Britannic Majesty. Galton acknowledged the first and the third of these. He also tried to trace racial characteristics in fingerprints, but did not succeed. He hoped, however, to pursue his research among some Indian tribes, expecting to find among them 'a more monkey-like pattern'.<sup>100</sup>

Galton not only made a crucial contribution to the analysis of fingerprints, he also, as we have said, saw the practical implications. In a very short time the new method was introduced in England, and thence gradually to the rest of the world (one of the last countries to give in to it was France). Thus every human being – as Galton boastfully observed, taking for himself the praise which had been bestowed on his rival, Bertillon, by a colleague in the French Ministry of the Interior – acquired an identity, was once and for all and beyond all doubt constituted an individual.<sup>101</sup>

In this way what to the British administrators had seemed an indistinguishable mass of Bengali faces (or 'snouts', to recall Filarete's contemptuous words) now became a series of individuals each one marked by a biological specificity. This extraordinary extension of the notion of individuality happened because of the relationship between the state and its administrative and police forces. Every last inhabitant of the meanest hamlet of Europe or Asia thus became, thanks to fingerprints, possible to identify and check.

### *Understanding society through clues*

But that same conjectural paradigm, in this case used to develop still more sophisticated controls over the individual in society, also holds the potential for understanding society. In a social structure of ever-increasing complexity like that of advanced capitalism, befogged by ideological murk, any claim to systematic knowledge appears as a flight of foolish fancy. To acknowledge this is not to abandon the idea of totality. On the contrary; the existence of a deep connection which explains superficial phenomena can be confirmed when it is acknowledged that direct knowledge of such a connection is impossible. Reality is opaque; but there are certain points – clues, signs – which allow us to decipher it.



This idea, which is at the heart of the conjectural or semiotic paradigm, has made itself a place in a wide range of intellectual contexts, most deeply affecting the human sciences. Minute graphic characteristics have been used to reconstruct cultural shifts and transformations (in direct line from Morelli, settling a debt owed by Mancini to Allacci almost three centuries earlier). The flowing robes of Florentine paintings in the 15th century, the linguistic innovations of Rabelais, the healing of the king's evil (scrofula) by French and English monarchs (to take a few of many possible examples), have each been taken as small but significant clues to more general phenomena: the outlook of a social class, or of a writer, or of an entire society.<sup>102</sup> The discipline of psychoanalysis, as we have seen, is based on the hypothesis that apparently negligible details can reveal deep and significant phenomena. Side by side with the decline of the systematic approach, the aphoristic one gathers strength—whether through a Nietzsche or an Adorno. Even the word aphoristic is revealing. (It is an indication, a symptom, a clue: there is no getting away from our paradigm.) *Aphorisms* was the title of a famous work by Hippocrates. In the 17th century collections of 'Political Aphorisms' began to appear.<sup>103</sup> Aphoristic literature is by definition an attempt to formulate opinions about man and society on the basis of symptoms, of clues; a humanity and a society that are diseased, in crisis. And even crisis is a medical term, dating from Hippocrates.<sup>104</sup> In literature too it can easily be shown that the greatest novel of our time – Marcel Proust's *A la Recherche du Temps Perdu* – is clearly a rigorous example of the application of this conjectural paradigm.<sup>105</sup>

### 'Elastic rigour'

But is rigour compatible with the conjectural paradigm? The quantitative and anti-anthropocentric direction taken by the natural sciences since Galileo has posed an awkward dilemma for human sciences: should they achieve significant results from a scientifically weak position, or should they put themselves in a strong scientific position but get meagre results? Only linguistics has succeeded (during the course of this century) in escaping this dilemma, and so offers itself as a model for other disciplines, which to a greater or less extent they have followed.

But the doubt creeps in as to whether this kind of rigour is not perhaps anyway both unattainable and undesirable, because of the form taken by the knowledge most closely bound up with everyday experience – or to be more precise, with every context in which the unique and irreplaceable character of its components seems critical to those involved. It was once said that falling in love meant over-valuing the tiny ways in which one woman, or one man, differed from others. This could of course be extended to works of art or to horses.<sup>106</sup> In such contexts the elastic rigour (to use a contradictory phrase) of the conjectural paradigm seems impossible to eliminate. It's a matter of kinds of knowledge which tend to be unspoken, whose rules, as we have said, do not easily lend themselves to being formally articulated or even spoken aloud. Nobody learns how to be a connoisseur or a diagnostician simply by applying the rules. With this kind of knowledge there are factors in play which cannot be measured: a whiff, a glance, an intuition. Until now we have carefully avoided this tricky word, intuition. But if it is going to be used, as another way of describing the instantaneous running through of the thought process, then we must make a distinction between *low* intuition and *high*.

Ancient Arab physiognomy was based on 'firasa': a complex notion which generally speaking meant the capacity to leap from the known to the unknown by

inference (on the basis of clues).<sup>107</sup> The term was taken from the vocabulary of Sufi philosophy; it came to be used both for mystic intuition, and for the kinds of penetrating shrewdness which were attributed to the sons of the king of Serendippo.<sup>108</sup> In this second sense, 'firasa' is neither more nor less than the organ of conjectural knowledge.<sup>109</sup>

This 'low intuition' is rooted in the senses (though it goes beyond them) – and as such it has nothing to do with the extra-sensory intuition of various nineteenth- and twentieth-century irrationalisms. It exists everywhere in the world, without geographic, historical, ethnic, gender or class exception; and this means that it is very different from any form of 'superior' knowledge, which is always restricted to an elite. It was the heritage of the Bengalis whom Sir William Herschel expropriated; of hunters; of mariners; of women. It forms a real link between the human animal and other animal species.

Translator's note:

As far as possible, references are to the English editions of works where available: unfortunately there has not been time to check page numbers for all these references.

A much shorter version of this article appeared in *Rivista di storia contemporanea* 7, 1978, and (translated by Marta Sofri Innocenti) in *Theory and Society/De gids* 7, 1979. The longer version given here appeared in *Ombre Rosse* (Red Shadows) 39, June 1979; and is also included in a new collection of essays edited by A. Gargani, *Crisi della Ragione* (Crisis of Reason), Turin 1979.

1 On Morelli, see first of all Edgar Wind, *Art and Anarchy*, 1963, pp.32-51, and the sources he quotes. On Morelli's life, add M. Ginoulhiac, 'Giovanni Morelli. La Vita' in *Bergomum* XXXIV, 1940; for a re-examination of his method R. Wollheim, 'Giovanni Morelli and the origins of scientific connoisseurship', *On Art and the Mind: Essays and Lectures*, 1973; H. Zerner 'Giovanni Morelli et la science de l'art', *Revue de l'Art* 40-1, 1978; G. Previtali 'A propos de Morelli', *Revue de l'Art* 42, 1978. See also references below, note 9. Unfortunately there is no general study of Morelli. It would be useful to analyse, besides his writings on art history, his early scientific education, his relationship with the German intellectual milieu, his friendship with the great Italian literary critic Francesco De Sanctis, his engagement in politics. (Morelli proposed De Sanctis for the chair of Italian literature in Zurich: see F. De Sanctis, *Lettere dall'esilio 1853-1860*, ed. B. Croce, Bari 1938, and the new edition of his *Epistolario*, being published by Einaudi in Turin.) On Morelli's political engagement see passing references in G. Spini, *Risorgimento e protestanti*, Naples 1956. And for the European resonance of his work see his letter to Marco Minghetti from Basel, 22 June 1882: 'Old Jacob Burckhardt, whom I visited last night, was extremely kind to me, and insisted on spending the whole evening with me. He is a very original man, both in his behaviour and in his thinking; you, and especially Donna Laura, would like him. He talked about Lermolieff's book, as if he knew it by heart, and used to ask me a lot of questions – which flattered me a great deal. This morning I am going to meet him again . . .' (Biblioteca Comunale di Bologna, Archiginnasio, Carteggio Minghetti, XXIII, 54.).

2 See for instance R. Longhi, *Saggi e ricerche: 1925-8*, Florence 1967, who on p.234 compares Morelli unfavourably to the 'great' Cavalcaselle, and suggests that 'materialist indications' rendered 'his method shallow and useless from the aesthetician's point of view'. Or again G.C. Argan and M. Fagiolo, *Guida alla storia dell'arte*, Florence 1974, pp.97, 101.

3 Wind, *Art and Anarchy*, pp.42-4.

4 Wind, *Art and Anarchy*, pp.40-1.

5 E. Castelnuovo, 'Attribution', *Encyclopaedia Universalis* II, 1968, p.782. Arnold Hauser makes a more general comparison between Freud's 'detective' methods and Morelli's in his *The Philosophy of Art History*, 1959 (see also note 9 below).

6 A. Conan Doyle, 'The Cardboard Box', *The Complete Sherlock Holmes*, pp.932 and 937 (and for another striking example 'The Boscombe Valley Mystery', pp.92-5). 'The Cardboard Box' first appeared in *The Strand Magazine* V, Jan.-June 1893. From *The Annotated Sherlock Holmes*, ed. W.S. Baring-Gould, 1968, we learn (p.208) that *The Strand* several months later published an unsigned article on the varieties of the human ear ('Ears: a chapter on', *Strand Magazine* VI, July-Dec. 1893). Baring-Gould thinks the author likely to have been Conan Doyle, publishing Holmes's anthropological treatise on ears. But 'Ears' followed an earlier article on 'Hands', which was signed Beckles Wilson (*The Strand Magazine* V, Jan.-July 1893), and was presumably by the same writer. Nevertheless, the page illustrating possible shapes of ears does irresistibly recall illustrations to Morelli's work, which at least confirms that the notion was in common circulation during these years.

7 It is just possible that the parallel was more than a coincidence. An uncle of Conan Doyle's, Henry Doyle, painter and art critic, was made Director of the Dublin Art Gallery in 1869 (see P. Nordon, *Sir Arthur Conan Doyle, the man and his work*, Paris 1964). In 1887 Morelli met Henry Doyle, and wrote about him to Sir Henry Layard: 'What you say about the Dublin Gallery interests me very much, and all the more since in London I had the good fortune to meet with the splendid Mr Doyle, who made the best possible impression on me. . . . Alas, rather than Doyles, what persons do you usually find in charge of galleries in Europe?' (British Museum, Add. Ms. 38965, Layard Papers vol.XXXV c. 120 v). Doyle's acquaintance with the Morelli method is proved (though it could have been assumed in an art historian) by the 1890 *Catalogue of the Works of Art in the National Gallery of Ireland*, which he edited, and which made use of Kugler's manual, which was thoroughly reworked by Layard in 1887 under the guidance of Morelli. The first English translation of Morelli appeared in 1883 (see bibliography in *Italianische Malerei der Renaissance im Briefwechsel von Giovanni Morelli und Jean Paul Richter - 1876-1891*, J. and G. Richter, Baden-Baden 1960). The first Holmes story (*A Study in Scarlet*) was published in 1887. This does allow the possibility that Conan Doyle was, through his uncle, familiar with the Morelli method. But in any case such a supposition is not essential, since Morelli's writings were certainly not the only vehicle for these ideas.

8 Wind, *Art and Anarchy*, p.40.

9 Hauser, *The Philosophy of Art History*. See also J.J. Spector, 'Les méthodes de la critique de l'art et la psychanalyse freudienne', *Diogenes* 66, 1969; H. Damisch, 'La partie et le tout', *Revue d'esthétique* 2, 1970, and 'Le gardien de l'interprétation', *Tel Quel* 44, Winter 1977; R. Wollheim, 'Freud and the Understanding of Art', *On Art and the Mind*, 1973.

10 Sigmund Freud 'The Moses of Michelangelo', *Collected Works*, Standard Edition, vol.XIII p.222. See also in B. Nelson (ed.), *Freud on Creativity and the Unconscious*, New York 1958. R. Bremer, 'Freud and Michelangelo's Moses', *American Image* 33, 1976 discusses Freud's interpretation of 'Moses' but does not touch on Morelli. I have not been able to see K. Victorius, 'Der "Moses des Michelangelo" von Sigmund Freud', in A. Mitscherlich (ed.), *Entfaltung der Psychoanalyse*, Stuttgart 1956.

11 See M. Robert, *The Psychoanalytic Revolution: Sigmund Freud's Life and Achievement*, 1966.

12 See E.H. Gombrich, 'Freud's Aesthetics', *Encounter* XXVI, 1966. It is curious that Gombrich does not here refer to Freud's passage on Morelli.

13 I. Lermolieff, *Die Werke italienischer Meister in den Galerien von München, Dresden und Berlin. Ein kritischer Versuch. Aus dem Russischen übersetzt von Dr Johannes Schwarze*, Leipzig 1880.

14 See H. Trosman and R.D. Simmons, 'The Freud Library', *Journal of the American Psychoanalytic Association* 21, 1973. I am very grateful to Pier Cesare Bori for pointing this out to me.

15 Ernest Jones, *Life of Freud*, vol.1, 1953; Robert, *The Psychoanalytic Revolution*.

16 Morelli, *Della Pittura Italiana*, p.4.

17 See his introduction to A. Conan Doyle, *The Adventures of Sherlock Holmes. A facsimile of the stories as they were first published in the Strand Magazine*, New York 1976 pp.x-xi. See also the bibliographical appendix to N. Mayer, *The Seven per cent solution*, an undeservedly successful novel where Holmes and Freud appear together as characters.

18 For distinctions between symptoms and signs or clues, see C. Segre, 'La Gerarchia dei Segni', in A. Verdiglione (ed.), *Psicanalisi e semiotica*, Milan 1975, p.33; T.A. Sebeok, *Contributions to the Doctrine of Signs*, Bloomington 1976.

19 See A. Conan Doyle, *The Annotated Sherlock Holmes*, introduction ('Two doctors and a detective: Sir Arthur Conan Doyle, John A. Watson MD, and Mr Sherlock Holmes of Baker Street'), p.7 and after, on John Bell, the physician who inspired the character of Holmes. See also Conan Doyle, *Memories and Adventures*, 1924, pp.25-6, 74-5.

20 A. Wesselofsky, 'Eine Märchengruppe', *Archiv für slavische Philologie* 9, 1886, pp.308-9, with bibliography. For the story's later history see below.

21 R. Jakobson and M. Halle, *Fundamentals of Language*, The Hague 1956, pp.55-87.

22 See E. Cazade and Ch. Thomas, 'Alfabeto', in *Enciclopedia* 1, Turin 1977 (and also Etiemble, *La Scrittura*, Milan 1962, pp.22-3, where he argues, convincingly if paradoxically, that humans learnt first to read and then to write). On this subject more generally, see Walter Benjamin, 'On the mimetic faculty' (Italian translation in *Angelus Novus*, Turin 1962, especially pp.70-1).

23 Here I am making use of the excellent essay by I. Bottéro, 'Symptômes, Signes, écritures' in J.P. Vernant and others, *Divination et Rationalité*, Paris 1974.

24 Bottéro (see note 23), p.154 and after.

25 Bottéro, p.157. On the links between writing and divination in China see J. Gernet, 'La Chine: aspects et fonctions psychologiques de l'écriture' in *L'Écriture et la psychologie des peuples*, Paris 1963, especially pp.33-8.

26 The reference is to the kind of inference which Peirce defined as presumptive or 'abductive', distinguishing it from simple induction. C.S. Peirce, 'Deduzione, induzione e ipotesi' in *Caso, amore e logica*, Turin 1956, and 'La logica dell' abduzione' in *Scritti di filosofia*, Bologna 1978. Bottéro on the other hand (see note 23) stresses (p.89) the deductive elements in Mesopotamian divination. This definition oversimplifies (to the point of distorting it) the complicated trajectory which Bottéro himself reconstructs so well (p.168 onwards). The simplification seems to result from a narrow and one-sided definition of 'science' (p.190), belied however by his significant analogy between divination and medicine, a discipline with almost no deductive character (p.132). The parallel suggested here between the two tendencies in Mesopotamian divination and the mixed character of cuneiform writing stems from some of Bottéro's observations (pp.154-7).

27 Bottéro (see note 23), pp.191-2.

28 Bottéro, pp.89 and following.

29 Bottéro, p.172.

30 Bottéro, p.192.

31 See the essay by H. Diller in *Hermes* 67, 1932, especially p.20 and those following. His counterposing of the analogical and the semiotic approach has been modified by the reinterpreting of the semiotic method as an 'empirical use' of analogy. See E. Melandri, *La linea e il circolo*, Bologna 1968, pp.25 and following. See also discussion in J.P. Vernant, 'Parole et signes muets', in *Divination et Rationalité* (see note 23).

32 The inclusion of women in this list is because they were associated with the goddess Metis and therefore with divination and conjecture. But there remains an important and unresolved problem, which I shall be returning to, which centres on so-called 'feminine intuition'. Why are women so often credited with superior powers of insight and intuition, even while denied access to the domain of 'male rationality'? Is it a contrast invented by male chauvinism? Or does it reflect the sexual division of roles over thousands of years? In any case it seems to link with the polarity between high and low, and the relegation of intuition to the low category.

33 On all this see the rich study by M. Detienne and J.P. Vernant, *Les ruses de l'intelligence. La Metis des grecs*, Paris 1974. The divinatory characteristics of Metis are discussed (pp.104 and following), but see also, for the connections between the various types of knowledge listed here and divination, pp.145-9 (mariners), and pp.270 and following. On medicine, see from p.297; on relations between the followers of Hippocrates and Thucydides, see M. Vegetti's Introduction to the works of Hippocrates, and Diller (note 31) pp.22-3. The links between medicine and historiography can be explored the other way round, see the studies on 'autopsy' recorded by Arnaldo Momigliano in 'Storiographica greca', *Rivista storica italiana* LXXXVII, 1975 p.45. The presence of women in the domain of Metis is discussed in Detienne and Vernant pp.20 and 267, and will be taken up in the final version of this work.

34 P.K. Feyerabend, *I problemi dell'empirismo*, Milan 1971, pp.105 and following; and his *Against Method*, London 1975, throughout; and also the controversial remarks of P. Rossi *Immagini della scienza*, Rome 1977, pp.149-50.

35 The *conioctor* was a priestly soothsayer or diviner. Here and elsewhere I draw on S. Timpanaro, *The Freudian Slip*, London 1976, though so to speak turning it inside out. Very briefly, Timpanaro thinks psychoanalysis is too close to magic to be acceptable, while I am

suggesting that not only psychoanalysis but most of the so-called human or social sciences are rooted in a divinatory approach to the construction of knowledge (see the last section of this article). The individualising tendency of magic, and the individualising character of the two sciences of medicine and philology were pointed out by Timpanaro in *The Freudian Slip*.

36 There is a memorable passage on the 'probable' (i.e. not certain) character of historical knowledge in M. Bloch *The Historian's Craft*, Manchester 1954. Its indirect nature, relying on traces or clues, is stressed by K. Pomian, 'L'histoire des sciences et l'histoire de l'histoire', in *Annales ESC* 30, 1975, pp.935-52, a rich and thoughtful article. On the connection between medicine and historical knowledge see M. Foucault *Microfisica del potere. Interventi politici*, Turin 1977 p.45. But for another point of view see G.G. Granger, *Pensée formelle et sciences de l'homme*, Paris 1967 pp.206 and following: His insistence on the individualising character of historical knowledge has a suspicious ring to it, because too often it goes with the attempt to identify historical knowledge with empathy, or the equating of history with art, and so on. Of course these pages are written with an altogether different intention.

37 On the repercussions of the invention of writing see J. Goody and I. Watt, 'The consequences of literacy', in *Comparative Studies in Society and History* V, 1962-3, and now J. Goody, *The Domestication of the Savage Mind*, Cambridge 1977. See also E.A. Havelock, *Cultura orale e civiltà della scrittura. Da Omero a Platone*, Bari 1973. For the history of textual criticism after the invention of the printing press see E.J. Kenney, *The Classical Text: Aspects of Editing in the Age of Printed Books*, Berkeley 1974.

38 See S. Timpanaro, *La genesi del metodo del Lachmann*, Florence 1963.

39 G. Galilei, *Il Saggiatore*, ed. L. Sosio, Milan 1965, p.38. And see E. Garin 'La nuova scienze e il simbolismo del "libro"', in *La Cultura filosofica del Rinascimento italiano: Ricerche e documenti*, Florence 1961, pp.451-65, where he discusses the interpretation of this and other passages from Galileo from a point of view close to mine here.

40 Galilei, *Il Saggiatore*, p.264. On this point see also J.A. Martinez, 'Galileo on primary and secondary qualities', *Journal of the History of Behavioural Sciences* 10, 1974 pp.160-9. In the passages quoted from Galileo the italics are mine.

41 J.N. Eritreo (G.V. Rossi), *Pinacotheca imaginum illustrium, doctrinae vel ingenii laude, virorum...* Lipsiae 1692, vol.II pp.79-82. Like Rossi, Naude too called Mancini a thoroughgoing atheist ('grand et parfait Athee'): R. Pintard, *Le libertinage érudit dans la première moitié du xvii<sup>e</sup> siècle*, vol. I, Paris 1943, pp.261-2.

42 It was first printed only twenty odd years ago: G. Mancini, *Considerazioni sulla pittura*, ed. A. Marucchi, 2 vols., Rome 1956-7. The importance of Mancini as a 'connoisseur' is stressed by D. Mahon in his *Studies in Seicento Art and Theory*, London 1947, pp.279 and following. J. Hess, 'Note manciniane', in *Münchener Jahrbuch der bildenden Kunst*, third series, XIX 1968, is full of good references but too reductive in his conclusions.

43 F. Haskell, *Patrons and Painters: a study in the relations between Italian art and society in the age of the baroque*, New York 1971, p.126 and the chapter on The Private Patrons.

44 Mancini, *Considerazioni*, vol.I pp.133 and following.

45 Eritreo, *Pinacotheca* (see note 41), pp.80-1. On p.82 he tells how, not long before, a diagnosis by Mancini which proved to be correct (the patient was Pope Urbano VIII) was called second sight or prophecy ('seu vaticinatio, seu praedictio').

46 Engravings obviously pose a different problem from paintings. Generally speaking one tendency today is away from the unique work of art ('multiples' are an obvious example); but there are other tendencies too, which confirm the importance of the unrepeatable, as with performances, or with 'body art' and 'land art'.

47 All of this relies of course on W. Benjamin, 'The work of art in the age of mechanical reproduction', in *Illuminations*, London 1973, pp.219-53. But he only discusses works of figurative art, more likely – especially paintings – to be unique, E. Gilson, *Peinture et réalité*, Paris 1958 p.93 and especially pp.95-6 contrasts the reproducibility of literary texts. (I owe this reference to Renato Turci). But Gilson treats it as an intrinsic difference, not a historical one, as I try to suggest. A case like that of the painter De Chirico 'faking' his own works, shows how today's belief in the absolutely unique character of a given work of art tends to elbow aside the idea of the artist's own biological individuality.

48 Here are my reasons for suggesting Allacci. In another passage, like the one quoted here, Mancini refers to 'librarians, particularly at the Vatican', able to date ancient manuscripts both Greek and Latin (p.106). Neither of these passages figures in the brief version, known as the *Discorso di pittura*, which Mancini finished before 13 November 1619 (see *Considerazioni*, p.xxx; the text of the *Discorso*, pp.291 and following; the part on 'recognising' paintings

pp.327-30). Now Allacci was appointed 'scriptor' at the Vatican in the middle of 1619 (J. Bignami Odier, *The Vatican Library from Sixtus IV to Pius IX*, Vatican 1973, p.129; recent studies on Allacci are listed pp.128-31). And anyway, in Rome at this time there was no-one except Allacci skilled in Latin and Greek manuscripts as Mancini describes. On the importance of Allacci's ideas on paleography see E. Casamassima, 'Per una storia delle dottrine paleografiche dall' Umanesimo a Jean Mabillon', *Studi medievali*, s.III, v. 1964, p.532, no.9, which also mentions the Allacci-Mabillon link, though it promises further reference in a sequel which never appeared. In the collection of Allacci's letters in the Vatican Library there is no indication of contact with Mancini, but they were undoubtedly part of the same intellectual circle, as their respective friendships with G.V. Rossi show (see Pintard, *Libertinage*, in note 41 above). For the friendship between Allacci and Maffeo Barberini before he became pope (Urbano VIII, whose librarian Allacci then became), see G. Mercati, *Note per la storia di alcune biblioteche romane nei secoli xvi-xix*, Vatican 1952, p.26 n.1.

49 Mancini, *Considerazioni* p.107; C. Baldi, *Trattato* . . . , Carpo 1622 pp.17-18 and following. Baldi also wrote on physiognomy and divination; see the entry in *Dizionario biografico degli italiani* 5, Rome 1963, pp.465-7.

50 Mancini, *Considerazioni*, p.134.

51 A. Averlino, known as Filarete, *Trattato di architettura*, ed. A.M. Finoli and L. Grassi, Milan 1972, vol.1, p.28 (but see generally pp.25-8). The passage is referred to as presaging 'the Morelli method' in J. Schlosser Magnino, *La Letteratura artistica*, Florence 1977, p.160.

52 See for example M. Scalzini, *Il segretario*, Venice 1585, p.20; G.F. Cresci, *L'Idea* . . . , Milan 1622, p.84.

53 See E. Casamassima, *Trattati di scrittura del Cinquecento italiano*, Milan 1966, pp.75-6.

54 Filarete, *Trattato* (see note 51), pp.26-7.

55 See Bottéro, *Symptômes* (see note 23), p.101, though he attributes the less frequent use in divination of the mineral or vegetable or even to some extent animal, to their presumed 'formal poverty' as well as, more simply, to anthropomorphism.

56 See *Rerum medicarum Novae Hispaniae Thesaurus seu plantarum animalium mineralium Mexicanorum Historia ex Francisci Hernandez novi orbis medici primarii relationibus in ipsa Mexicana urbe conscriptis a Nardo Antonio Reccho . . . collecta ac in ordinem digesta a Ioanne Terrentio Lynceo . . . notis illustrata*, Rome 1651, pp.599 and following (these pages are part of a section by Giovanni Faber, which is not clear from the title page). There is an excellent discussion of this volume, stressing its importance, by E. Raimondi, *Il romanza senza idillio. Saggio sui Promessi Sposi*, Turin 1974, p.25.

57 Mancini, *Considerazioni*, vol.1, p.107, where he refers to a text by Francesco Giuntino on the horoscope of Dürer. (The editor of the *Considerazioni* II, p.60, n.483 does not identify the text; but see F. Giuntino, *Speculum astrologiae*, Lugduni 1573, p.269v.)

58 *Rerum medicarum* (see note 56), pp.600-27. It was Pope Urbano himself who insisted that the illustrated account should be printed, see p.599. On the interest of this group in landscape painting see A. Ottani Cavina, 'On the theme of landscape II: Elsheimer and Galileo', *The Burlington Magazine* 1976, pp.139-44.

59 See Raimondi's interesting essay 'Verso il realismo', in *Il romanza* (see note 56) – even if, following Whitehead, he tends to underrate the opposition between the two paradigms, the abstract-mathematical and the concrete-descriptive. On the contrast between Baconian and classical science see T.S. Kuhn, 'Tradition mathématique et tradition expérimentale dans le développement de la physique', *Annales ESC* 30, 1975, pp.975-98.

60 See for example 'Craig's Rules of Historical Evidence 1699', *History and Theory – Beiheft* 4, 1964.

61 On this subject, here scarcely touched on, see the very rich book by I. Hacking, *The Emergence of Probability. A Philosophical Study of Early Ideas about Probability, Induction and Statistical Inference*, Cambridge 1975. Also quite useful is M. Ferriani, 'Storia e "preistoria" del concetto di probabilità nell'età moderna', *Rivista di filosofia*, 10, Feb. 1978.

62 P.J.G. Cabanis, *La certezza nella medicina*, ed. S. Moravia, Bari 1974.

63 On this point see M. Foucault, *Birth of the Clinic*, London 1973 and *Microfisica* (see n.36) pp.192-3.

64 See also the author's *Il formaggio e i vermi. Il cosmo di un mugnaio del '500*, Turin 1976, pp.69-70.

65 Here I am taking up, though in a rather different sense, points considered by Foucault in *Microfisica* (see n.36), pp.167-9.

66 See J.J. Winckelmann, *Briefe*, ed. H. Diepolder and W. Rehm, vol.II, Berlin 1954, p.316 (letter 30 April 1763 to G.L. Bianconi in Rome) and note on p.498. 'Little insights' are referred to in *Briefe* vol.1, Berlin 1952, p.391.

67 This is not only true of novels about early life and development ('Bildungsromanen'). From this point of view the novel is the real successor to the fable. See V.I. Propp, *Le radici storiche dei racconti di fate*, Turin 1949.

68 E. Cerulli, 'Una raccolta persiana di novelle tradotte a Venezia nel 1557', in *Atti dell'Accademia Nazionale dei Lincei*, CCCLXXII 1975, Memorie della classe di scienze morali etc, s.VIII, vol.XVIII, no.4, Rome 1975 (on Sercambi see pp.347 and following). Cerulli's article on the origins and diffusion of the *Travels* is combined with what is known on the eastern origins of the story (see note 20 above), and its later indirect (through Zadig) outcome in the detective story (see below).

69 Cerulli mentions translations into German, French, English (from the French), Danish (from the German). This list may be checked and perhaps extended, in a book which I have not been able to see: *Serendipity and the three princes: from the Peregrinaggio of 1557*, ed. T.G. Remer, Norman (Oklahoma) 1965, which on pp.184-90 lists editions and translations. (See W.S. Heckscher, 'Petites Perceptions: an account of sortes Warburgianae', *The Journal of Mediaeval and Renaissance Studies* 4, 1974 p.131, n.46.)

70 Heckscher, 'Petites Perceptions', pp.130-1 developing a point made in his 'Genesis of Iconology', *Stil und Ueberlieferung in der Kunst des Abendlandes* vol.III, Berlin 1967 (Akten des XXI. Internationalen Kongresses für Kunstgeschichte in Bonn 1964), p.245 n.11. These two articles by Heckscher are extremely rich in ideas and references; they examine the origins of Aby Warburg's method from a point of view which is close to mine in this article. In a later version I plan to follow up the Leibnizian trail which Heckscher suggests.

71 Voltaire 'Zadig ou la destinée' in *Romans et Contes*, ed. R. Pomeau, Paris 1966, p.36.

72 See in general R. Messac, *Le 'Detective Novel' et l'influence de la pensée scientifique*, Paris 1929 (excellent though now a bit out of date). On the connection between the *Travels* and *Zadig* see p.17 and following; also pp.211-12.

73 Messac *Le 'Detective Novel'*, pp.34-35 (quoting G. Cuvier, *Récherches sur les ossements fossiles*, vol.1, Paris 1834, p.185).

74 See T. Huxley, 'On the Method of Zadig: Retrospective Prophecy as a Function of Science', in *Science and Culture*, London 1881, pp.128-48. (This was a lecture given the previous year. My attention was drawn to it by a reference in Messac, *Le 'Detective Novel'*.) On p.132 Huxley explains that 'even in the restricted sense of "divination" it is obvious that the essence of the prophetic operation does not lie in its backward or forward relation to the course of time, but in the fact that it is the apprehension of that which lies out of the sphere of immediate knowledge; the seeing of that which to the natural sense of the seer is invisible'. And see E.H. Gombrich, 'The Evidence of Images' in C.S. Singleton (ed.), *Interpretation*, Baltimore 1969, pp.35 and following.

75 See (J.B. Dubos) *Réflexions critiques sur la poésie et sur la peinture*, vol.II, Paris 1729, pp.362-5 (quoted in part by Zerner, 'Giovanni Morelli', see note 1 above, p.215 n.).

76 E. Gaboriau, *Monsieur Lecoq* vol.1: *L'Enquête*, Paris 1877, p.44. On p.25 the 'young theory' of the youthful Lecoq is contrasted with the 'old practice' of the old detective Gévol, 'champion of the positivist police' (p.20) who stops short at what he can see and therefore risks seeing nothing.

77 On the long-lived popular support for phrenology in England (when official science despised it) see D. de Giustino, *Conquest of Mind. Phrenology and Victorian Social Thought*, London 1975.

78 'My research reached the conclusion . . . that the anatomy of civil society must be sought in political economy.' Karl Marx, Preface (1859) to *A Contribution to the Critique of Political Economy*.

79 Morelli, *Della Pittura* p.71. Zerner (article cited in note 1 above) argues on the basis of this passage that Morelli made distinctions at three levels: (a) the general characteristics of the school of painting, (b) the characteristic details of the individual painter, betrayed in hands, ears etc, and (c) mannerisms unintentionally introduced. In fact (b) and (c) might combine, as with Morelli's point about the 'too bright flesh on the thumbs of men's hands' which recurs in paintings by Titian, and which copyists avoided. (*Le opere dei maestri*, p.174.)

80 Some echoes of the pages of Mancini discussed here may have reached Morelli through F. Baldinucci's *Lettera . . . nella quale risponde ad alcuni quesiti in materie di pittura*, Rome 1681, pp.7-8, and Lanzi's history of Italian art (see note 83). As far as I know, Morelli never referred to Mancini's *Considerazioni*.

- 81 (Various authors) *L'Identité. Seminaire interdisciplinaire dirigé par Claude Lévi-Strauss*, Paris 1977.
- 82 A. Caldara, *L'indicazione dei connotati nei documenti papiracei dell' Egitto greco-romano*, Milan 1924.
- 83 L. Lanzi, *Storia pittorica dell'Italia . . .*, ed. M. Capucci, Florence 1968, vol.I, p.15.
- 84 E.P. Thompson, *Whigs and Hunters. The Origin of the Black Act*, London 1975.
- 85 Michel Foucault, *Discipline and Punish. The birth of the prison*, London 1977.
- 86 M. Perrot, 'Délinquance et système pénitentiaire en France au xix<sup>e</sup> siècle', *Annales ESC* 30, 1975, pp.67-91 (esp. p.68).
- 87 A. Bertillon, *L'Identité des récidivistes et la loi de relégation*, Paris 1883; E. Locard, *L'identification des récidivistes*, Paris 1909. In 1885 the Waldeck Rousseau law decreed prison for old offenders with a long record, and expulsion for those considered irredeemable. See Perrot, 'Délinquance', p.68 (as in note 86 above).
- 88 Branding was abolished in France in 1832. *The Count of Montecristo* dates from 1844, like *The Three Musketeers* (both by Alexandre Dumas); Victor Hugo's *Les Misérables* from 1869. The list of literary convicts from this period could be extended both for France (Vautrin etc.), and from English novels, especially Dickens.
- 89 See the difficulties discussed by Bertillon, *L'identité*, p.10.
- 90 On Bertillon see A. Lacassagne, *Alphonse Bertillon: L'homme, le savant, la pensée philosophique*; E. Locard, *L'Oeuvre d'Alphonse Bertillon*, Lyon 1914 (taken from *Archives d'anthropologie criminelle, de médecine légale et de psychologie normale et pathologique*, p.28).
- 91 Bertillon, *L'identité*, p.11.
- 92 A. Bertillon, *Identification anthropométrique. Instruction signalétique*, new ed., Melun 1893, p.xlviii: 'But where the ear is most clearly superior for identification purposes, is in cases where the court requires an assurance that a particular old photograph "beyond doubt represents the person here before us" . . . there are no two identical ears and . . . if the ear corresponds that is a necessary and sufficient proof that the identity does too' except in the case of twins. And see Bertillon's *Album*, Melun 1893 (which accompanied the other work), plate 60b. For Bertillon's admiration of Sherlock Holmes, see F. Lacassin, *Mythologie du roman policier*, vol.1, Paris 1974, p.93 (which also quotes the passage on ears just quoted, in note 8).
- 93 See Locard, *L'oeuvre* (as in note 90), p.27. Because of his skill as a handwriting expert Bertillon was called in during the Dreyfus case, to pronounce on the authenticity of the famous memorandum. Because his verdict definitely favoured the case against Dreyfus, his career (so the biographies insist) suffered. Lacassagne, *Alphonse Bertillon* (see note 90), p.4.
- 94 F. Galton, *Finger Prints*, 1892: it lists previous publications on the subject.
- 95 J.E. Purkyně, *Opera Selecta*, Prague 1948, pp.29-56.
- 96 Purkyně, p.31.
- 97 Galton, *Finger Prints*, pp.24 and following.
- 98 See L. Vandermeersch, 'De la tortue a l'achillée', in *Divination et Réalité* (see note 23), pp.29 and following; J. Gernet, 'Petits écarts et grands écarts', in same collection, pp.52 and following.
- 99 Galton, *Finger Prints*, pp.27-8 (and see the acknowledgement on p.4). On pp.26-7 he also refers to a precedent which never took practical form: a San Francisco photographer who had proposed facilitating identification of members of the Chinese community by the use of fingerprints.
- 100 *Finger Prints*, pp.17-8.
- 101 *Finger Prints*, p.169. For the comment which follows see Foucault 'Microfisica' (see note 36), p.158.
- 102 The reference here is to L. Traube, 'Geschichte der palaeographie', *Zur Palaeographie und Handschriftenkunde*, ed. P. Lehmann, vol.1, Munich 1965 (based on edition of 1909) – this point has been brought out by A. Campana, 'Palaeographia oggi. Rapporti, problemi e prospettive di una "coraggiosa disciplina"', *Studi urbinati* XLI, 1967, new series B, Studi in onore di Arturo Massolo, vol.II, p.1028; A. Warburg, *La rinascita del paganesimo antico*, Florence 1966 (the first essay dates from 1893); L. Spitzer, *Die Wortbildung als stilistisches Mittel exemplifiziert an Rabelais*, Halle 1910; M. Bloch, *The royal touch; sacred monarchy and scrofula in England and France*, London 1973 (first published 1924). The examples could be multiplied: see G. Agamben, 'Aby Warburg e la scienza senza nome', *Settanta* July-Sept. 1975, p.15 (Warburg and Spitzer are quoted, and Traube mentioned, on p.10).
- 103 Besides Campanella's *Political Aphorisms*, which originally appeared in Latin as part of *Realis Philosophia* (De politica in aphorismos digestata), see G. Canini, *Aforismi politici cavati*



dall' *Historia d'Italia di Francesco Guicciardini*, Venice 1625 (see T. Bozza, *Scrittori politici italiani dal 1550 al 1650*, Rome 1949, pp.141-3, 151-2). And see entry under Aphorisms in the *Dictionnaire Littré*.

104 Even if it was originally used in law; for a brief history of the term see R. Koselleck, *Critica illuminista e crisi della società borghese*, Bologna 1972, pp.161-3.

105 The point will be further developed in the final version of this work.

106 Compare Stendhal, *Ricordi di egotismo*, Turin 1977, p.37: 'Victor (Jacquemont) strikes me as an exceptional man: recognisable as a connoisseur . . . spots a fine horse in a four-month-old colt still unsteady on its legs' (Stendhal excuses himself for using the French word *connoisseur* in the sense it had acquired in English).

107 See Y. Mourad's splendid and penetrating book, *La physiognomonie arabe et la 'Kitab Al-Firasa' De Fakhr Al-Din Al-Razi*, Paris 1939, pp.1-2.

108 See the extraordinary adventure attributed to Al-Shafi'i (in the 9th century AD of the Christian calendar) in *Physiognomonie*, pp.60-1, which is like something from Borges's writings. The link between 'firasa' and the deeds of the king of Serendippo's sons is raised, appropriately, by Messac, *Le 'Detective Novel'* (see note 72 above).

109 Mourad, *La Physiognomonie*, p.29, classifies the branches of physiognomy as follows from the treatise by Tashkopru Zadeh (1560 AD): (1) the lore of moles and blemishes (2) chiromancy – the reading of hands (3) scapulomancy – divination using shoulder blades (4) divination through tracks (5) genealogical lore involving examination of limbs and skin (6) the art of finding the way in the desert (7) water-divining (8) the art of finding where metal lay (underground) (9) the art of foretelling rain (10) prediction using events of the past and present (11) prediction using the body's involuntary movements. From p.15 Mourad is proposing a very interesting comparison, which will be followed up, between the Arab study of physiognomy and research on perceptions of individuality by the Gestalt psychologists.

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