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Information Age—A Critique

I would like to start by making a few remarks about artefact-rich thematic exhibitions in general. My reason for doing so is that I will later voice some reservations about the ability of *Information Age* to 'speak through its artifacts,' and I would not like it to be thought that these reservations apply to *Information Age* alone. Indeed, looking critically at *Information Age* has pointed up the problems that afflict any exhibition trying to use artefacts as a communication medium. So in criticising *Information Age* I am questioning not so much an individual exhibition as the common beliefs from which it emerged.

The idea that you can use artefacts to tell a story enjoys widespread currency. But there are at least two obstacles in the way of those who, equipped with a storehouse of artefacts and impassioned by the knowledge of their history, would use the artefacts to communicate the passion. The first of these obstacles is the invisibility of unfamiliar artefacts, or at least the unfamiliar parts of unfamiliar artefacts: people find it difficult to see what they have never seen before. The second is that, even if an artefact is clearly seen, to use it in a story you have to use it as a sign, 'something which stands to somebody for something in some respect or capacity,'[1] and the meaning of any sign is socially determined. Neither of these obstacles exists for artefacts in common circulation; but these are the very artefacts that museums, as repositories of the exotic or the forgotten, tend to exclude.

If we cannot see what we have not already seen, how do we ever learn to see anything? As long ago as 1878 the German polymath Hermann von Helmholtz, who anticipated much of modern vision theory, drew attention to the role of knowledge in vision and offered an explanation of the way in which the seemingly impossible might be accomplished:

> If the similar traces, which are often left behind in our memories by repeated perceptions, increase, then it is precisely the law-like that repeats itself most regularly in a similar manner, while fortuitous change is eliminated. By this means there develops in the loving and attentive observer an intuitive image of the typical behaviour of the artefacts which interest him, of which he subsequently knows just as little as to how it came about as a child knows by which examples he has learnt the meanings of words.[2]

In the same lecture, Helmholtz went on to point out the necessity of this prior learning for vision, explaining that 'In present perception, the newly appearing sense impression forms the minor premise to which is

applied the rule imprinted through earlier observations.' More recent theorists such as Richard Gregory likewise support the view that vision requires a knowledge base, however acquired.[3]

Everyday experience confirms this. Once you have looked at a few impressionist paintings, you see shadows on a cloudless day as blue. Before this experience, the same shadows seemed black. The battles surrounding those 19th-century painters who first saw blue shadows suggest that this new seeing was not straightforward. Indeed, anyone with formal art education will recognise the hours of painful effort that had to pass before they began to see artefacts with the completeness required for their convincing representation.

Most museum visitors arrive equipped only with the knowledge they need for seeing the familiar things of their world. Confronted with an artefact from outside it, say a siphon recorder,[4] they will see it only in their own terms. They will see the part that the curator (the epitome of Helmholtz's 'loving and attentive observer') sees as the siphon, for example, simply as a curiously shaped glass tube; they may not see its essential supporting thread at all. Until the visitor is more experienced, or a mentor intervenes, their perception remains at the cargo-cult level.

If there are problems with the purely visual, how much greater must be the visitor's difficulties in grasping the significance, not just the appearance, of unfamiliar artefacts. The need to read an artefact as a sign, when the language from which that sign is taken is unknown, is the second great obstacle in the path of telling stories with artefacts. Edwina Taborsky has argued against the 'observational paradigm' in which the meaning of the artefact is taken to exist in the artefact itself, not in the mind of the observer. This paradigm assumes that the cultural as well as the material content of an artefact is somehow 'put into' it by its creator and can be completely understood by anyone, even if they are not a member of the society in which it was created. When, as is usual, the process fails, this is attributed to 'misconceptions, and prejudices' in the observer's mind.[5] Umberto Eco dismisses as the 'referential fallacy' an even stronger, but frequently encountered, form of this paradigm, which regards an artefact as simply its material self, visible in a completely transparent way.[6]

Taborsky argues instead for what she calls the 'discursive paradigm', in which meaning arises from the interaction of artefact and observer at a particular place and time. In this paradigm, '[t]he artefact cannot exist as a sign or meaningful unit on its own.'[7] If you accept this—and I find it persuasive—it follows that the visitor's knowledge, as well as the artefact itself, is a key component in determining how the artefact functions as a sign. Though there is no single right meaning, something akin to the process of learning to see has to happen at the symbolic as well as the visual level if the visitor's encounter with an artefact is to generate the meaning the curator's story demands. If this learning has not happened,

if the curator's and the visitor's worlds have not been aligned, the artefact–visitor interaction will generate the 'wrong' meaning and the story will falter.

Think of the siphon recorder again. The curator wants it to play a dramatic role in a story of human communication. But the visitor lacks the curator's knowledge of the vast network to which it was connected, the working lives of its operators, the way its siphon tube wagged magically from side to side as it traced out life-or-death messages. To the visitor, the instrument has meaning perhaps as a decorative antique, something that might make an aesthetic contribution to the home. The story is disrupted because interaction with the same sign creates different meanings for storyteller and listener.

The curator's traditional task is to repair this situation. By interweaving artefacts, text, perhaps even interactive exhibits, the curator first helps visitors to see artefacts more clearly, then imbues those artefacts with the symbolic values that come from their function and history. Then, and only then, are visitors able to make meanings that form a coherent story. In this way the museum fulfils its role of expanding visitors' mental world to include other cultures, other times, enhancing their understanding of their own culture and their own time. But look at the order of events: first the teaching, then the practice, then the moment when the exhibition can at last speak through its artefacts. By the time even an attentive visitor is ready for a story told by artefacts, the opportunity to tell that story has often passed: the visitor is heading for the exit.

All this implies that most visitors to artefact-rich exhibitions are in fact reading a story carried by text or other familiar media at the same time as they are learning to see artefacts and gathering new meanings for them. The artefacts, far from carrying the story, ride on its back. There is nothing wrong with this relationship, but pretending that it is the other way round can lead us to develop exhibitions that neither tell a clear story nor expand visitors' perceptions of artefacts. There is little doubt, for instance, that the best way of learning to see artefacts at the primitive level is to spend time looking at a lot of them gathered together in isolation.[8] In contrast, the best way to expand your interaction with them as signs is to explore them in a context that links them with other, more familiar signs like people and words. Museums started to shift from an artefact-intensive to an interpretive style in the early sixties, as the discursive paradigm began to gain ground from the observational. This approach, however, if taken too far, can impoverish the visitor's detailed perception to the point where almost any artefact could be substituted for any other without apparent incongruity. And neither style can solve the essential problem: if you do not already know the story behind an artefact, the artefact itself is powerless to tell that story.

My preamble done, I shall use some of its ideas in looking at the way five particular artefacts seem to function in *Information Age*. Morse's tele-

graph, Bell's and Gray's telephones, ENIAC, and the Bank of America ERMA cheque entry and recording machines. Do these artefacts succeed in speaking for themselves?

The problem is perhaps presented most clearly in the Morse telegraph exhibit. From its position at the entrance to the exhibition, this is clearly intended to have iconic impact, making the most of its associations with a name every schoolboy knows and with the dawn of electrical communication. But there is also a very proper desire to explore the humble origins of this groundbreaking device; to this end, it is deconstructed, ostensibly to reveal it as an assemblage of homely odds and ends. To see whether this game plan can succeed, consider what the visitor needs to know before the artefacts can start to do their work. First, what a telegraph is. Second, that Morse invented the first viable telegraph system. Third, that he was a painter and his brother a printer. And finally, what sort of paraphernalia you might expect to find lying around an artist's studio and a printer's shop.

Artefacts, or at least working models, might be able to say what a telegraph is, though you would still need the word 'telegraph' as a link between artefact and further discourse. But about Morse, his achievement, his profession, his family connections and the identity of the artefacts you see, the artefacts themselves are silent. Only text can tell this part of the story. And though a canvas stretcher, the wire of a paper mould and a composing stick might seem to be artefacts that can speak for themselves, eloquent in their ordinariness, this is probably a curatorial illusion. All of these minor artefacts, to the eye of the non-specialist visitor, are likely to be as obscure, hard to see and lacking in meaning as the major artefact that they are intended to illuminate. Most people don't paint in oils, use copper wire or set type any more than they communicate by telegraph. In contrast, the clock will be clearly recognisable and laden with meaning (at least for older visitors), showing that the deconstruction could have worked if it had happened to produce more meaningful fragments. One could perhaps say that at least the crudity of Morse's early equipment is evident; but what counts as crudity to innocent modern eyes? Today's child probably sees everything more than a century old as crude in the extreme. Text comes to the rescue again, of course, and everything is made clear in the end; but it is the end, not the beginning. Most of the artefacts have not spoken—they have been spoken about.

Bell's and Gray's telephones present further difficulties. As more sophisticated devices, they do not even lend themselves to deconstruction into components. They have to be seen whole. Once again, the difficulty of seeing arises. Though these are telephones, they do not look anything like the artefact that the word 'telephone' commonly signifies. And though visitors will accept, once told, that they are indeed strange-looking telephones, their perception will at first be confined to simple shapes and textures. These will not, without further study, congeal into

the whole, functional artefacts seen by the curator's eye. Much less will they declare themselves as the product of Bell's or Gray's workshop. The visitor simply has to be told: this one is Bell, this one Gray.

A thought experiment that I like to carry out at this point, to check whether text is doing its job of supporting and supplying meanings for artefacts, is to swap the artefacts around. Would anyone but an expert notice? Does the text tell ordinary visitors what to look for, and connect these diagnostic features to the stories of the artefacts' creation and use? If not, an opportunity to enlarge visitors' repertoire of meanings has been missed, and it will remain difficult to tell stories with these artefacts. I did feel in this section that the artefacts are used as illustrations to a textual story, neither telling the story themselves nor taking full advantage of the text to grow in meaning. One message that visitors might be expected to get from the very similarity of these particular artefacts, for example, is that Bell's and Gray's paths of development were highly convergent. But unfortunately this needs pointing out in words: to many visitors, all this material looks very much the same anyway. In a world without firm points of reference, how similar is similar?

With ENIAC we reach another level of difficulty. The artefact is so large that you see not ENIAC but a part that stands for the whole. The exhibition repairs this common and unavoidable defect with a splendid collection of video material showing the complete machine. But in consequence the portion of ENIAC that is on display is reduced to the status of a relic. Like a splinter of the true cross, it cannot tell its own story; its job is simply to recall and reinforce belief in that story for people who already know it. After they have read the text and watched the videos, visitors too will know the story of ENIAC, but it is those supporting media, not the artefact, that will have told them it.

At least ENIAC, though, as a more recent artefact than Morse's telegraph or Bell's telephone, has a few features that visitors may recognise. It has the modular layout, and even the black finish, now familiar in hi-fi equipment. Its plugs and sockets look very like the mess you see at the back of your PC. And its function table is, on a gigantic scale, quite like the PROM that has long since replaced it (though only a few visitors would recognise that). These are points at which the artefact could, simply by being placed beside such modern artefacts, speak to at least some visitors. The story it would tell, though, would not be the story in the text, which is perhaps why the links were not made at this point, even though the exhibition talks about these subjects elsewhere. The lesson here, perhaps, is that artefacts do always tell a story of some kind; but, until text or other media intervene, that story is woven out of the stock of perceptions and meanings that visitors bring with them. Curators may feel that the replacement of this naive story by received history is their primary task. Maybe it is, but it will always be difficult to do it with artefacts as the primary medium.

And what about artefacts that, rather than belonging to a single point in time, span a timeline of their own? Like old houses that have been altered over the centuries, they are records, not just representatives, of change. They offer a correspondingly more complex set of signs, and untangling their meanings can present a challenge even for the experienced observer. The two Bank of America ERMA machines—the 'proof machine' for manual entry of dollar amounts and the 'dollar-amount encoder' for printing the sum on the cheque—fall into this category. While their appearance, as relatively modern artefacts, is not on the level of perceptual difficulty presented by Bell's telephones, their function as signs is not equally simple.

An attentive visitor might notice the set of bins forming part of the proof machine and make the link to Hollerith's card-sorting equipment. This would indeed be an artefact talking. But what exactly would it say? The obvious message, that ERMA was a punched-card system, is false. The true message, that the machine evolved from one used on an earlier system that did employ punched cards, is not obvious. And the deeper message, that the machine could transmit its data to other computers in the system, heralding the Information Age of the exhibition's title, can, in the absence of the relevant artefacts, be conveyed only by text.

Yet *Information Age* is far from deserted. Its mix of text and artefacts, on whatever level it works for the individual, clearly succeeds in bringing in visitors for an experience that is in some way richer than that given by other media. Text and artefacts, in short, have been skillfully mixed to make a formula more powerful than either ingredient alone. Some participants in the resulting complex museum experience will be naive observers, acquiring early exposure to historic artefacts; a minority will be mature museum-goers. *Information Age* serves the inexperienced well, with text that is clear and lively; they will lean on this, using the artefacts as a kind of historical decoration to a verbal message, at the same time learning to see them better. The exhibition also provides much for the experienced, who can enjoy a profusion of important artefacts that it would be difficult to match elsewhere. For them, the text provides interesting commentary rather than essential information.

The artefacts that *Information Age*'s creators have selected for discussion in this paper are well chosen. They span a range of possibilities and problems in attempting an exhibition that can speak through its artefacts. Some, whose language is a forgotten dialect, are mute. Others speak, but tell unwanted stories. Yet others seem to lie. In all cases the curator's solution has to be the same: to let human language carry the burden, relegating the artefacts to the role of illustrations or relics. The text carries the artefacts, enriching them as perceptions and signs. Only a few visitors to *Information Age*, as to any other exhibition of its kind, will be able to reverse this relationship and use the artefacts to enrich the meanings of the text. This favoured minority will already have absorbed the visual

language and cultural meanings of the relevant class of artefacts through exposure to taxonomic displays, text-mediated interpretative exhibits and other sources. Like everything else, museum visiting needs practice; and visiting museums where artefacts do the talking needs the most practice of all.

Notes

1. C. S. Peirce, *Collected Papers*, edited by P. Weiss, C. Hartshorne and A. Burks (Cambridge MA, 1931–58), Vol. 2, Sec. 228.
2. Hermann von Helmholtz, *Science and Culture: Popular and Philosophical Essays*, edited by David Cahan (Chicago, 1995), p. 355.
3. See J. Anderson, H. B. Barlow and R. L. Gregory (eds.), 'Knowledge-Based Vision in Man and Machines,' *Philosophical Transactions of the Royal Society of London: Biological Sciences*, Vol. 352, No. 1358 (29 August 1997).
4. A form of telegraph receiver in which ink, siphoning through a narrow tube actuated by an electromagnet, marks a moving strip of paper. Those who did not recognize the term may have experienced, in textual form, something of the non-seeing alienation of the naive observer.
5. Edwina Taborsky, 'The Discursive Artefact' in Susan Pearce (ed.), *New Research in Museum Studies* (London, 1990), p. 60.
6. Umberto Eco, *A Theory of Semiotics*, (Bloomington, 1976), pp. 58–62.
7. Taborsky, 'The Discursive Artefact,' p. 58.
8. The Heinz Nixdorf Museums Forum in Paderborn, Germany, has, in its artefact-rich but basically text-mediated exhibition, a splendid display of what looks like every pocket calculator ever made. Curator Ulf Hashagen has made little textual comment here, and none is needed. One sees; one learns to see.