In 1885 an anonymous report from the Mineralogical and Geological Department to the Trustees of the Australian Museum recommended the adoption of a 'comprehensive system of exhibition' for the museum's geological collections. The virtue of the system, it was claimed, was that it would enhance the usefulness of those collections (it would help the public to understand better the usefulness and attraction of Lithology, Mineralogy, Geology and Palaeontology) by increasing their legibility ('the visitor will be enabled to rapidly understand by sight what would require pages or books') (Australian Museum: 5; emphasis in original). Intended 'to correlate the ideas of the visitor or student, by showing him plainly the natural connections between things', this comprehensive system of exhibition was designed with the needs of miners most clearly in mind. Here is how those needs were identified:

Miners indeed visit the Museum in great numbers in order to obtain the information of which they feel themselves in want, but although they are a very intelligent class of people, they generally want instruction in elementary things which are quite necessary to their purpose, they often entertain wrong theories of their own, sometimes original enough, and they are used to point out at once the knot of any question in their own craft.

They will soon get used to practically distinguish the most common kinds of minerals and rocks, they will, by natural disposition point out physical and regional differences which might have escaped the observation of scientific men, but they want science to be put before them in a popular light, which speaking to their eyes, spares their time, and remains deeply impressed on their memory.

In the Museum's existing displays, the report argued, the stress placed on purely mineralogical principles of classification entailed that 'the only connecting links between specimens' they made visible were those based on 'analogies in their chemical composition, and mode of crystallisation'. Useful though this may be to the specialist, the report admonishes that, 'of the very pith of the subject "How minerals are formed" it teaches nothing'. Contrasting this with the situation of the practical miner working in a disturbed country where rocks
of dissimilar nature are exposed and who will see in the ‘nature of the vegetation or in the colours of the mountains’ the “indications” of the minerals of which he is in search, the report urges instead the automatic legibility of a system that would classify geological exhibits in terms of the modes of their occurrence:

However, if the same miner had visited a collection in which the modes of occurrence of each valuable mineral are clearly exposed by a classification made according to the characters which distinguish each class of mineral deposit and each mode of occurrence, and if the minerals which generally occurred [sic] the outcrops are distinguished from those which generally occurred [sic] deeper levels; and the nature of the accompanying rocks, sedimentary or eruptive, is shown in connection with the ores and vein stuff which are found with them in each different class of deposit, then, the miner will, at a glance, understand something of the science of mining.

If thence, the same miner is transported to the same disturbed country above alluded to he will find, in what such a classification has brought him, some points of comparison which will help him to unfold that problematical book of the earth, to find the boundaries of the different kinds of rocks, read the ways in which sedimentary or metamorphised rocks have been penetrated by eruptive rocks and mineral solutions, and seize some probable indications of the subsequent filling or impregnation of veins, cavities or strata by the rich mineral matter for which he is seeking.

The views are very similar to those of Archibald Livingstone, so much so that he may well have been their author. In his capacity as the Professor of Geology and Mineralogy at the University of Sydney, Livingstone submitted a lengthy report to the Australian Museum in 1880 outlining how the proposed development of a new Technological and Industrial Museum in Sydney might benefit from the experience of a range of European museums, including London’s Museum of Practical Geology, the South Kensington Museum and its outpost in London’s working-class East End, the Bethnal Green Museum. Throughout his report, Livingstone stressed the need for the organizing principles of displays in technological and industrial museums to be luminously transparent if they were to succeed in imparting useful knowledge to the working classes. Citing the view of a Professor Rankine that ‘too much must not be expected from those who can only find time for study after a fatiguing day’s work’ (cited in Livingstone 1880: xxvi), Livingstone urged the need for the clear and detailed labelling of exhibits if the working man were not to be wearied by his visit and sent away dissatisfied.

My interest, however, lies less in the authorship of the 1885 report than in the general currency of the proposition that museums should ‘speak to the eyes’ and the arguments on which it drew. Indeed, from this point of view, the anonymity of the report is a part of its historical value in view of the way in which it simply takes for granted a view of the museum as an automated learning environment – that is, as a collection of objects whose meaning is to be rendered auto-intelligible through a combination of transparent principles of display and clear labelling – which, although in fact quite new, had become, by the 1880s, an accepted new doxa for museum practice. One of its most influential advocates was Henry Pitt Rivers, whose typological method aspired to order the arrangement of ethnological objects in a manner that would allow the direction and significance of human evolution to be taken in at a glance. Pitt Rivers’s aim was to arrange his collections ‘in such a manner that those who run may read’ (Pitt Rivers 1891: 115–16). By ‘those who run’, Pitt Rivers meant the working classes. ‘The more intelligent portion of the working classes’, he says, ‘though they have but little book learning, are extremely quick in appreciating all mechanical matters, more so even than highly educated men, because they are trained up to them; and this is another reason why the importance of the object lessons that museums are capable of teaching should be well considered’ (ibid.: 116).

Although the cultural resonances underlying the phrase ‘those who run’ are now somewhat obscure, we may be sure that its significance was not lost on Pitt Rivers’s contemporaries. It served both as a coded reference to the earlier tradition of civic humanism in English painting and art theory and as a challenge to the exclusions of that tradition in which mention of ‘those who run’ functioned as a shorthand expression for mechanics: that is, for members of the artisan classes whose occupation excluded them from any claim to be included in the public for art. This view was most influentially argued by Sir Joshua Reynolds, who contended that the occupational demands placed on mechanics – routine mechanical work with little free time for mentally improving forms of leisure – inhibited their capacity to acquire those generalizing intellectual abilities which, according to Reynolds, alone made it possible for the individual to acquire civic virtue through exposure to art. John Barry, a mid-century painter who sought to break with the restrictions that characterized Reynolds’s conception of the public in arguing for a democratic public of taste that would include all men and women, retained a similar view of the mechanic and of the tensions that would result from his inclusion within the world of art. For this would entail the development of both new forms of painting and new ways of contextualizing art’s display that would aspire to make the meaning of art – and hence, also, its capacity to transmit civic virtue – immediately communicable to the ignorant. Yet, while recommending this course of action, Barry simultaneously warned of the dangers inherent in taking it too far, suggesting that when the content of a painting is ‘so brought down to the understanding of the vulgar, that they who run may read’, the result will be exhibitions of art which lack interest for ‘intelligent’ visitors as well as any capacity to develop the taste of the vulgar, since ‘there will be nothing to improve or reward the attention even of the ignorant themselves, upon a second or third view’ (cited in Barrell 1986: 188).

In arguing that museums should arrange their displays so that ‘those who run may read’, then, Pitt Rivers was signalling the importance he attached to the
Although, like the author of the Australian Museum report, Pitt Rivers stresses the lively practical intelligence of the working classes (they are 'extremely quick in appreciating all mechanical matters'), he points out that their capacity for abstract and theoretical thought is limited ('they have but little book learning'). The working-class visitor comes with an inherent deficiency which the museum must compensate for and overcome by the use of unambiguous classificatory principles, rational layout and use of space, and clear and descriptive labelling. These are mandatory changes if — in a new usage of the concept of public which itself signals the end of Reynolds's conception of the restricted liberal public for art — museums are to become effective instruments of public education. We accordingly find similar arguments repeated wherever the educational role of museums comes under discussion in the closing decades of the nineteenth century. The need for clear labels and display principles was endlessly debated at the annual conferences of the Museums Association (see Lewis 1989) and these practices found an influential national champion at the British Museum (Natural History) during the period of Sir William Henry Flower's directorship, when Flower's advocacy of the need for a pristine clarity in museum displays was widely circulated (see Flower 1898). When the British Association for the Advancement of Science (BAAS) conducted an inquiry into the conditions of provincial museums, it too stressed the need for the museum to present itself to its visitors as a readable text. 'A museum without labels', the report arising from the inquiry advises, 'is like an index torn out of a book; it may be amusing, but it teaches very little' (BAAS 1887: 127).

Similar arguments were found in the United States. They were perhaps most succinctly and most influentially expressed by George Brown Goode in his contention that, in order to serve as a means for increasing the knowledge, culture and enlightenment of the people, museums should regard their task as one of arranging a well-planned collection of instructive labels illustrated by well-selected specimens (Goode 1895). The question of public legibility was also very much to the fore in the advice the American Museum of Natural History received from Baron Osten Sacken:

> If you present too many objects to an unscientific public the danger is that they will see nothing. If you place before a man, ignorant of natural history, an eagle and a hawk, he will easily observe the structural differences between them. But if you show him one hundred eagles and hawks of different size, shape and color, collected in all the different countries of the world, your man will glare at them, but see nothing and remember nothing. And such is the effect produced on the public generally by larger collections, as those of the British Museum, of the Berlin Museum, etc. Instead of displaying the specimens in the most advantageous light, in the most striking position, such collections, from the multiplicity of objects and the consequent want of space, are obliged to crowd them as much as possible. Hundreds of specimens are crowded in a comparatively narrow space, without sufficient indication of the division in species, genera and families. A walk through a long suit of halls, thus filled, affords more fatigue than amusement, or instruction.

(cited in Gratacap n.d.: chapter 2, p. 63)

Assuming that 'what is needed now, is a collection for the instruction and amusement of the public at large', the good Baron goes on to propose that such a collection should consist solely of representatives of the most common North American mammals and birds. If such a collection is to be presented to the eye of the public in the most instructive and attractive manner, then, the Baron argues, 'let the names be distinctly written, the scientific divisions in families and orders clearly indicated; the specimens not too crowded'.

Wherever we might care to look, then, we find, throughout the last quarter of the nineteenth century, a new and distinctive emphasis being placed on the need to arrange and label museum displays in ways calculated to enhance their public legibility by making their meaning instantly readable for the new mass public which the museum increasingly saw as its most important target audience. 'It must be insisted, indeed', argued L. P. Gratacap, natural history curator at the American Museum of Natural History, 'that the careful luminous exhibition and exposition of its collections, so that the public may fully understand them, and learn their lessons, is the chief purpose of the Museum. This work sedulously followed involves not simply a display of labelled objects, but a sequence and order that may teach a lesson' (ibid.: 88). As Baron Osten Sacken's formulations suggest, however, this is not just a matter of new labelling practices. It involves a fundamental reconception of the status and role of the museum object which now forms part of a rationalized exhibition space in which both objects and the relations between them have been thoroughly bureaucratised in order that they might serve as the instruments of the museum's commitment to a new form of public didacticism (see Bennett 1995a: 39-44).

Why should this have been so? The stress in most available accounts of this fin de siècle development has typically been placed on the importance that was accorded the museum as an instrument for the maintenance of social order (see, for example, Coombes 1988, 1994; van Keuren 1989). In the context of the labour unrest of the period from the 1870s on and the increasing influence of mass-based socialist organizations, the museum, such accounts suggest, was increasingly enlisted in the cause of public education in view of the role it was believed it could play in translating a conservative reading of the implications of evolutionary thought into a physically sensuous and readily comprehensible form with wide appeal. There is much to recommend this line of reasoning, and not just as a retrospective theoretical explanation: there is ample evidence that...
this is precisely what some contemporary museum administrators and educators thought they were doing. When Albert Bickmore, the founder of the public education programmes at the American Museum of Natural History (AMNH), met Sir William Flower in 1893/4 he thus recorded his impression that 'the great minds which are moulding the destinies of the British nation' were in agreement with the AMNH's assessment 'that individual and that community and that nation, which is the best educated will be the one which will survive in the great contest of which the labour troubles in our country and in England during that summer were but the distant murmurings of a coming tempest which will sooner or later burst upon the civilised world' (Bickmore n.d.: 121), and outlined the steps being taken in both countries to help museums contribute to this task.

There are, however, a number of shortcomings with such accounts. This is not to suggest that questions of social order were not centrally at issue in the changing museum debates and practices which characterized this period. They were, and with a degree of insistence and urgency that has rarely been rivalled since. Rather, my point concerns how we should understand the role that museums were called on to play in relation to the social order and the part that the new principles of public legibility were expected to perform in enabling museums to fulfil that role. There are three issues at stake here, and although it would be interesting to continue exploring these comparatively across national boundaries, I shall henceforth limit my attention to the British context in identifying these issues and examining their implications.

The first concerns the need to revalue the extent to which museums over this period functioned as instruments of a conservative hegemony in helping to maintain the existing social order. I shall suggest that this neglects the degree to which many of the leading museum administrators and theorists of the period were liberal reformers who, far from espousing a commitment to the status quo, valued museums for the contributions they might make in facilitating an ordered and regulated transformation of the existing social order. This helps, to come to the second issue, to account for the stress that was placed on the need for museum displays to be publicly legible. This is difficult to explain if our attention focuses solely on how museums were viewed in the context of contemporary social and political events. The influence of discursive events must also be taken into account. If the question of legibility was to the fore in museum debates and practices, this was centrally because a succession of discursive events – the revolutions in geology and in natural history – entailed that the script of the museum had to be modified in order to represent a new discursive order. Viewed in this light, the museum's task was not so much to shore up the existing social order as to provide the script for a new one, and to provide its visitors with new discursive positions within that order. If it was so important that the museum be read, this was because it offered both a new way of writing the social order and new social inscriptions for social actors; new ways of inserting persons discursively within social and historical relations and of defining their tasks within those relations. The third issue I want to focus on is closely related. It concerns the emphasis that was placed on incorporating principles of auto-intelligibility into museum displays, so that their meaning might be understood directly and without assistance. I shall suggest that this derived primarily from the principles of liberal government and the need for the production of persons who would be increasingly self-directing and self-managing.

Let's look more closely at the first of these issues. In doing so, it is, of course, important to be discriminating, for it was as true then as it is now that museums vary significantly with regard to their philosophies and practices. It is clear, however, that those museums which could most intelligibly be described as conservative were not those most involved in arguing the need for new forms of transparency in the organization of museum displays. The British Museum, as it had throughout most of the century, conspicuously dragged its feet, resisting the need for any thoroughgoing revision of its practices. Those who pressed the pace of reform – William Henry Flower at the British Museum (Natural History), Edward Forbes at the Museum of Economic Geology, Henry Pitt Rivers – represented varying shades of liberal opinion in both its Anglican and Dissenting versions. Nor was it any accident that the need for museums to 'speak to all eyes' was pursued most energetically in geological, ethnological and natural history museums. For these were at the forefront of the contest between traditional Tory and Anglican conceptions of the social order – most forcefully, if ambiguously, championed by Richard Owen at the British Museum – and the new liberal social scripts which, at least in the British context, comprised the most immediately influential interpretation of the implications of Darwin's evolutionary categories. In these ways, the advocacy of new forms of public legibility in museums was closely associated with those organizations – the British Association for the Advancement of Science, the Ethnological Society, the 'X-Club' – concerned to identify how the new evolutionary paradigms derived from the natural and historical sciences might contribute to the development of new forms of liberalism in which norms for conduct were to be derived, in some measure, from the laws of evolution. Huxley is a crucial mediating figure here in view of his general advocacy of a species of liberalism based on evolutionary principles; of the support he offered Flower in restructuring the British Museum (Natural History) along Darwinian lines; and of the influence of his public lectures at the Government School of Mines, at the London Institution and, later, in the Sunday Evenings for the People he conducted for the Sunday League, in developing a public didactics which converted the lessons of nature into a morality directed at the working man.

In writing to Frederick Dyster in 1855 outlining the purpose of his London Institution lectures, Huxley indicated that he aimed to show the working classes 'that physical virtue is the base of all other, and that they are to be clean & temperate & all the rest, not because fellows in black with white ties tell them so, but because these are plain and patent laws of nature' (cited in Desmond 1994: 210). In glossing this passage, Adrian Desmond suggests that, by viewing
nature as the new source of moral sanction, Huxley aimed to effect a shift in the basis of social authority from the priesthood to a new class of scientific professionals committed to the development of a competitive and technocratic society. Some aspects of the argument were to change. By the 1890s, Huxley, adopting a position similar to that advocated by Mill in his famous essay on nature, denied that nature could furnish a template for morality just as he also denied that the laws of natural evolution could provide any guarantee for the continued furtherance of social evolution. If morality consisted precisely in opposing the influence of socially derived ethical codes to the unmitigated effects of the natural law of the survival of the fittest, Huxley argued in *Evolution and Ethics* (1894), it was equally true that natural processes of competition stood in need of a cultural supplement if they were to serve as a template for social development. What did not change, however, either for Huxley or for his contemporaries, was the urgent need to render nature readable in new ways in view of its potential to serve as the source of new social scripts.

Although those scripts were, in varied ways, evolutionary in character, it is doubtful whether their use in museums is adequately accounted for if seen solely or even mainly as part of a conservative ruling-class response to an increasingly socialistic working class. The main difficulty with this view is its lack of an appropriately specific understanding of the discursive context and of the challenges this presented liberal and reforming opinion which, by and large, remained the driving force behind the new directions in museum policies and practices. On the one hand, there was the need to render nature readable in such a way that its message would undermine the natural underpinnings of both traditional forms of Anglican and Tory social authority and the Lamarckian tradition of evolutionary thought which had nurtured the development of working-class radicalism. On the other hand, there was the need to replace such conceptions with a new reading of nature which, in representing social evolution as the outcome of a multitude of minor and accumulative adaptations to changing circumstances resulting from competitive struggle, aimed to hitch evolutionary thought to the task of the continuing reformation of society in accordance with meritocratic principles by stimulating a ‘regulated restlessness’ that both encouraged progress as a moral imperative while simultaneously curbing it within limits consistent with the principles of gradual social evolution (see Bennett 1997). The importance of making nature readable, of speaking to the eyes so that all might see, of coding nature’s messages into the artefactual environment of the museum as a place where new social scripts and their requirements might be learned and rehearsed, is more readily intelligible when it is clear that what was at issue in this process was the mounting of a challenge to other social scripts, the forms of authority on which they rested and the forms of conduct they implied. The distinctions were fine ones and if ‘those who run’ were to appreciate them and their significance, the provision of an artefactual regime whose organizing principles would be luminously transparent to all was a pressing necessity.

This was especially so if visitors were to learn and absorb the museum’s messages alone and unaided except for the assistance of the rationalized exhibits and their clear and distinct — but solely descriptive — labels. For in a way which marks this period as distinctive, the relationship of the visitor to the museum was envisaged as an autodidactic one. While didactic props such as labels and descriptive catalogues were provided, the visitor’s route through the museum was typically unguided. The personalized forms of tour which had characterized institutions like the British Museum prior to the period of mid-century reform were no longer available. Similarly, the older forms of group tour led by unqualified guides associated with institutions like the Tower of London had been roundly criticized and deemed inadequate for the civilizing tasks of the public museum in view of their tendency to substitute an imposed collective reading in lieu of the individualized forms of response which liberal theories of pedagogy required (see Bennett 1995b). And the trained museum guide — or, in American usage, docent — was still a thing of the future. Spurred on by Lord Sudley’s influential advocacy, a number of leading museums appointed trained educational guides towards the end of the first decade of the twentieth century, and the resulting ‘guide movement’ was a major topic of debate at the annual conferences of the Museums Association in the immediately pre-war period (see Kavanagh 1994: 18–21). At the 1913 conference, for example, both Cecil Hallett and J. H. Leonard – the first holding a Bachelor of Arts degree and the second a Bachelor of Science – presented papers summarizing their experiences as, respectively, the Official Guides at the British Museum and the British Museum (Natural History), and suggesting how guides might best perform their function of imparting knowledge to a general public with varying levels of education. The change this entailed in the museum’s organization of the visitor’s sensorium was clearly summarized by the terms in which Hallett concluded his address:

The public, as a rule, are not given to the study of guide books, nor to the reading of labels — excellent though these may be, and indeed are in the Bloomsbury galleries; and if there is one thing more clearly shown than another by the experience of the past two years and a half, it is that nothing can bring the general public and a museum into a right relation with each other so well as the living voice of a human expositor.

(Hallett 1913: 200)

This is, of course, only a glimpse of a new technology of visitor management, one in which the museum was to speak to the ears as well as the eyes. For the greater part of the later nineteenth century, however, the visitor was treated solely as an individualized source of sight while the museum itself was envisaged largely as a sphere of visibility. This was not new. In the course of the French Revolution, the revolutionary requirement for transparency in the organization of public life and the insistence that the meaning of civic rituals and institutions should be rendered publicly legible to and for all citizens had led Alexandre
Lenoir, in establishing the Musée des monuments français, to borrow a principle of eighteenth-century architectural discourse, which had required that the exteriors of buildings should convey a transparent meaning that would enable them to serve as ‘speaking monuments’, in suggesting that the museum should aim to ‘speak to all eyes’ (parler à tous les yeux) (cited in Vidler 1986: 141). What had started off as an element of Enlightenment architectural discourse and had subsequently been transformed into an aspiration of revolutionary cultural and civic policy had, by the end of the nineteenth century, been again transformed into a governmentally organized form of public legibility through which citizens, in being equipped to read the new social scripts proposed by liberal and reforming versions of evolutionary theory, were to learn both their new places and what was required of them if they were to be effectively inscribed into and conscripted for the new competitive and progressive ways of being in time which liberal versions of evolutionary thought proposed.

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