

Wolfgang Schivelbusch

The Railway Journey

**The Industrialization of Time and Space
in the 19th Century**

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The Railway Journey

Où tombent les poteaux minces du télégraphe
Dont les fils ont l'allure étrange d'un paraphe.

(The scene behind the carriage window-panes
Goes flitting past in furious flight; whole plains
With streams and harvest-fields and trees and blue
Are swallowed by the whirlpool, whereinto
The telegraph's slim pillars topple o'er,
Whose wires look strangely like a music-score.)²⁹

29. Paul Verlaine, *Oeuvres poétiques complètes* (Paris, 1951), p. 106. The cycle 'La bonne chanson' was written in the winter of 1869/70; transl. Gertrude Hall, in *Baudelaire, Rimbaud, Verlaine: Selected Verse and Prose Poems*, (New York, 1947).

[3]
**Railroad Space
and Railroad Time**

Economically, the railways' operation . . . causes distances to diminish . . . Lille suddenly finds itself transported to Louvres; Calais to Pontoise; le Havre to Poissy; Rouen to Sèvres or to Asnières; Reims to Pantin; Strasbourg to Meaux; Lyon to a place half-way between Melun and Corbeil; Marseilles to Nemours; Perpignan to Pithiviers; Bordeaux to Chartres or to Étampes; Nantes to Arpajon, etc.

— Constantin Pecqueur, 1839

'Annihilation of space and time' was the early-nineteenth-century characterization of the effect of railroad travel. The concept was based on the speed that the new means of transport was able to achieve. A given spatial distance, traditionally covered in a fixed amount of travel time, could suddenly be dealt with in a fraction of that time; to put it another way, the same amount of time permitted one to cover the old spatial distance many times over. In terms of transport economics, this meant a shrinking of space: 'Distances practically diminish in the exact ratio of the speed of personal locomotion', Lardner says in his *Railway Economy*.¹

The average traveling speed of the early railways in England was twenty to thirty miles an hour, or roughly three times the

1. D. Lardner, *Railway Economy* (London, 1850), p. 35.

speed previously achieved by the stagecoaches.² Thus, any given distance was covered in one-third of the customary time: temporally, that distance shrank to one-third of its former length. In early-nineteenth-century writings the temporal diminution is expressed mostly in terms of a shrinking of space. An article published in the *Quarterly Review* in 1839 speaks of 'the gradual annihilation, approaching almost to the final extinction, of that space and of those distances which have hitherto been supposed unalterably to separate the various nations of the globe', and continues:

For instance, supposing that railroads, even at our present simmering rate of travelling, were to be suddenly established all over England, the whole population of the country would, speaking metaphorically, at once advance *en masse*, and place their chairs nearer to the fireside of their metropolis by two-thirds of the time which now separates them from it; they would also sit nearer to one another by two-thirds of the time which now respectively alienates them. If the rate were to be sufficiently accelerated, this process would be repeated; our harbours, our dock-yards, our towns, the whole of our rural population, would again not only draw nearer to each other by two-thirds, but all would proportionally approach the national hearth. As distances were thus annihilated, the surface of our country would, as it were, shrivel in size until it became not much bigger than one immense city.³

The image of a temporal shrinkage seen as a spatial one appeared in an even more extravagant guise in the work of Constantin Pecqueur, the economist and Saint-Simonian, whose *Economie sociale* received a prize from the Institut de France in 1838. Here, the temporally shrunk transport space is a new geography of France, a geography based on the new conditions of speed, a condensed geography, as it were. The cities of France approached each other while simultaneously advancing on Paris. These changes in location, enumerated in

2. According to H. G. Lewin, *The Railway Mania and its Aftermath, 1845-52* (London, 1936), the average speed, up to 1845, was 'between 20 and 30 miles per hour' (p. 95). The Great Western Express, the fastest English train, reached a speed of 46 mph. Lardner says the speed of the stagecoaches was a little less than 8 mph (*Railway Economy*, p. 36), whereas Lewin claims that the fastest coaches achieved 10 mph. The actual speed of English trains in the 1840s, i.e., their top speed, was, according to Lardner, frequently 60 to 70 mph (*Railway Economy*, p. 170).

3. *Quarterly Review*, vol. 63 (1839), p. 22.

the epigraph to this chapter, are summarized in Pecqueur's statement that it had become possible to see 'the new France as fitting into the space of the *old* Île-de-France, or its equivalent'.

The diminution of transport distances seemed to create a new, reduced, geography, yet it did not actually alter the size of the spaces between the points connected by the new mode of transport. 'Yet by a sort of miracle,' says the *Quarterly Review* article, after describing the shrinking process, 'every man's field would be found not only *where* it always was, but *as large* as ever it was'. Pecqueur expressed the same notion in literary hyperbole: the diminished transport geography of France contained the true geography of France within it in a condensed form: 'Each bit of terrain, each field on this surface would still remain intact; so would every house in a village, the village itself, or the town; every territory with its village in the center would remain a province; on the map of the imagination, all of these would finally be reproduced and reduced down to the infinitely small! As for Louvres, or Pontoise, or Chartres, or Arpajon, etc., it is obvious that they will just get lost in some street of Paris or its suburbs'.⁴

The notion that a French town could fit into a Paris street demonstrates that the alteration of spatial relationships by the speed of the railway train was not simply a process that diminished space, but that it was a dual one: space was both diminished *and* expanded. The dialectic of this process states that this diminution of space (i.e., the shrinking of transport time) caused an expansion of transport space by incorporating new areas into the transport network. The nation's contraction into a metropolis, as described in the *Quarterly Review*, conversely appeared as an expansion of the metropolis: by establishing transport lines to ever more outlying areas, the metropolis tended to incorporate the entire nation. Thus the epoch of the suburbs, of the amoebic proliferation of the formerly contained cities into the surrounding countryside, began with the railroads. This is Lardner in 1851:

It is not now unusual for persons whose place of business is in the centre of the capital, to reside with their families at a distance of from

4. Constantin Pecqueur, *Economie sociale* (Paris, 1839), vol. 1, p. 26.

fifteen to twenty miles from that centre. Nevertheless, they are able to arrive at their respective shops, counting-houses, or offices, at an early hour of the morning, and to return without inconvenience to their residence at the usual time in the evening. Hence in all directions round the metropolis in which railways are extended, habitations are multiplied, and a considerable part of the former population of London has been diffused in these quarters.⁵

The notion that the railroad annihilated space and time was not related to that expansion of space that resulted from the incorporation of new spaces into the transport network. What was experienced as being annihilated was the traditional space-time continuum which characterized the old transport technology. Organically embedded in nature as it was, that technology, in its mimetic relationship to the space traversed; permitted the traveler to perceive that space as a living entity. What Bergson called the *durée* (duration, the time spent getting from one place to another on a road) is not an objective mathematical unit, but a subjective perception of space-time. The dependence of this perception on transport technology illustrates Durkheim's notion that a society's space-time perceptions are a function of its social rhythm and its territory.⁶ 'What is decisive', says Erwin Straus, discussing the psychology of distances, 'is not the objectively measured distance, but the relation of such distance to potentiality.'⁷ Transport technology is the material base of potentiality, and equally the material base of the traveler's space-time perception. If an essential element of a given sociocultural space-time continuum undergoes change, this will affect the entire structure; our perception of space-time will also lose its accustomed orientation. Sorokin, following Durkheim, distinguishes between sociocultural and physico-mathematical notions of space-time, and has described the hypothetical effects of a sudden replacement of customary sociocultural time measures with purely mathematical ones: 'If we try to replace sociocultural time by a purely quantitative time, time becomes devitalized. It loses its reality, and we find ourselves in an exceedingly difficult position in our efforts to orient ourselves in the time process, to

5. Op. cit., p. 36.

6. Émile Durkheim, *The Elementary Forms of the Religious Life* (Glencoe, Ill., 1947), pp. 10-11, 440.

7. Erwin Straus, *The Primary World of the Senses* (New York and London, 1963), p. 385.

find out "where we are" and where are the other social phenomena on "the bridge of time"'.⁸ (Italics in original.)

Thus, the idea that the railroad annihilated space and time must be seen as the reaction of perceptive powers that, formed by a certain transport technology, find suddenly that technology has been replaced by an entirely new one. Compared to the eotechnical space-time relationship, the one created by the railroad appears abstract and disorientating, because the railroad — in realizing Newton's mechanics — negated all that characterized eotechnical traffic; the railroad did not appear embedded in the space of the landscape the way coach and highway are, but seemed to strike its way through it.

Heinrich Heine captured the disorientation experienced by the traditional space-time consciousness when confronted by the new technology; apropos the opening of railway lines from Paris to Rouen and Orléans in 1843, he wrote of the 'tremendous foreboding such as we always feel when there comes an enormous, an unheard-of event whose consequences are imponderable and incalculable', and called the railroad a 'providential event', comparable to the inventions of gunpowder and printing, 'which swings mankind in a new direction, and changes the color and shape of life'. Heine continues in this vein:

What changes must now occur, in our way of looking at things, in our notions! Even the elementary concepts of time and space have begun to vacillate. Space is killed by the railways, and we are left with time alone. . . . Now you can travel to Orléans in four and a half hours, and it takes no longer to get to Rouen. Just imagine what will happen when the lines to Belgium and Germany are completed and connected up with their railways! I feel as if the mountains and forests of all countries were advancing on Paris. Even now, I can smell the German linden trees; the North Sea's breakers are rolling against my door.⁹

We have now clearly stated the two contradictory sides of the same process: on one hand, the railroad opened up new spaces that were not as easily accessible before; on the other, it did so by destroying space, namely the space between points. That in-between, or travel space, which it was possible to 'savor'

8. Pitrim A. Sorokin, *Sociocultural Causality, Space, and Time* (Durham, NC, 1943), p. 197.

9. Heine, *Lutezia*, pt 2, lvii, Elster ed., vol. 6, p. 360.

while using the slow, work-intensive eotechnical form of transport, disappeared on the railroads. The railroad knows only points of departure and destination. 'They [the railways] only serve the points of departure, the way-stations, and the terminals, which are mostly at great distances from each other', said a French author in 1840, 'they are of no use whatsoever for the intervening spaces, which they traverse with disdain and provide only with a useless spectacle'.¹⁰

As the space between the points — the traditional traveling space — was destroyed, those points moved into each other's immediate vicinity: one might say that they collided. They lost their old sense of local identity, formerly determined by the spaces between them. The isolation of localities, which was created by spatial distance, was the very essence of their identity, their self-assured and complacent individuality. Heine's vision of the North Sea breaking on his doorstep in Paris was tinged with 'tremendous foreboding' because both localities — Paris and the North Sea — were still presented in their mutually isolated state, 'worlds apart': thus their collision appeared unfathomable. Thirty years later, as an interlocking network of railroad lines connected all of Europe, that kind of consciousness was no longer realistic. Regardless of their geographical remoteness, the regions appeared as close and as easily accessible as the railways had made them. One generation after Heine, the more privileged inhabitants of Paris had the option of letting themselves be transported, in a matter of hours, to a region that was as distant from their city as Heine's North Sea. The Mediterranean does not extend its shores right up to Parisian thresholds, but it could be reached so much more quickly than before that the journey there was no longer experienced as such. The Parisians who migrated south in the winter saw nothing but blue skies and the sea. As Mallarmé wrote in the winter of 1874/5, in *La Dernière Mode*, the journal he edited, they are 'calm, self-absorbed people, paying no attention to the invisible landscapes of the journey. To leave Paris and to get to where the sky is clear, that is their desire'.¹¹ They were no longer travelers — rather, as Ruskin puts it, they were human parcels who dis-

10. Charles Dunoyer, *Esprit et méthodes comparés de l'Angleterre et de la France dans les entreprises de travaux publics et en particulier des chemins de fer* (Paris, 1840), p. 104.

11. Stéphane Mallarmé, *Oeuvres complètes*, Pléiade ed. (Paris, 1970), p. 843.

patched themselves to their destination by means of the railway, arriving as they left, untouched by the space traversed.

Even though the railroad was incapable of bringing the remote regions physically to Paris, the speedy and comfortable accessibility of those regions created a consciousness of distance that approximated to Heine's vision of space, but without the sense of foreboding. The region that could be reached by train from Paris realized itself for the Parisians by means of the train. It then appeared as the product or appendage of the railroad, as in a phrase of Mallarmé's: 'Normandy, which, like Brittany, is part of the Western Railway'.¹²

But if Normandy and Brittany, being its destinations, were part of the Western Railway, then the point of departure of that same railway, the station in Paris, became the entrance to those regions. This was a common enough notion in the nineteenth century: it is to be found in every one of Baedeker's travel guides that recommends a certain railroad station as the point of departure for each excursion.

The identification of the railroad station with the traveler's destination, and the relative insignificance of the journey itself, were expressed by Mallarmé in *La Dernière Mode*, under the heading *Gazette et Programme de la Quinzaine*; the following sub-headings represented equally important institutions for entertainment: *Les Librairies, Les Théâtres, Les Gares* (the last sometimes replaced by *Les Voyages*). Thus a railroad journey appeared in no way different from a visit to the theater or the library — the purchase of a train ticket was equivalent to that of a theater ticket.

A generation after Mallarmé, Marcel Proust, in *A la Recherche du temps perdu*, discussed the difference between a journey by train and one in a motorcar:

The journey was one that would now be made, probably, in a motor-car, which would be supposed to render it more interesting. We shall see too that, accomplished in such a way, it would even be in a sense more genuine, since one would be following more clearly, in a closer intimacy, the various contours by which the surface of the earth is wrinkled. But after all, the special attraction of the journey lies not in our being able to alight at places on the way and to stop

12. Op. cit., p. 774.

altogether as soon as we grow tired, but in its making the difference between departure and arrival not as imperceptible but as intense as possible, so that we are conscious of it in its totality, intact, as it existed in our mind when imagination bore us from the place in which we were living right to the very heart of a place we longed to see, in a single sweep which seemed miraculous to us not so much because it covered a certain distance as because it united two distinct individualities of the world, took us from one name to another name; and this difference is accentuated (more than in a form of locomotion in which, since one can stop and alight where one chooses, there can scarcely be said to be any point of arrival) by the mysterious operation that is performed in those peculiar places, railway stations, which do not constitute, so to speak, a part of the surrounding town but contain the essence of its personality just as upon their signboards they bear its painted name.¹³

The fate wrought upon the outlying regions by the railroads affected goods even sooner: as long as production and consumption were strictly regional — which they were until the beginning of modern transportation — goods remained part of the local identity of their place of production. Their route of circulation was to be perceived at a glance. Only when modern transportation created a definite spatial distance between the place of production and the place of consumption did the goods become uprooted commodities. In *Grundrisse*, Marx makes an observation about the relation between spatial distance and the nature of commodities; it tells us a good deal about how modern transportation has affected our perception of goods: 'This locational movement — the bringing of the product to the market, which is a necessary condition of its circulation, except when the point of production is itself a market — could more precisely be regarded as the transformation of the product *into a commodity*'.¹⁴ (Italics in original.)

With the spatial distance that the product covered on its way from its place of production to the market, it also lost its local identity, its spatial presence. Its concretely sensual properties, which were experienced at the place of production as a result of

13. *Remembrance of Things Past*, vol. II, *Within a Budding Grove*, I; transl. by C. K. Scott Moncrieff (New York, 1934, pp. 489-90).

14. Karl Marx, *Grundrisse, Foundations of the Critique of Political Economy* (London, 1973), p. 534.

the labor process (or, in the case of the fruits of the land, as a result of natural growth), appeared quite different in the distant market-place. There the product, now a commodity, could realize its economic value and simultaneously gain new qualities as an object of consumption. No longer was it seen in the context of the original locality of its place of production but in the new locality of the market-place: cherries offered for sale in the Paris market were seen as products of that market, just as Normandy seemed to be a product of the railroad that takes you there. Pecqueur touches on the notion of the unity of the realization of economic value and the biological process, using the example of the ripening of fruit: 'For instance, economically speaking, and for the sake of freshness and price, the cherries of Montmorency really ripen on the uncultivated summits of the Quartier Lafayette; the roses of Fontenay burst into bloom and fragrance in the flower beds of the Jardin du Luxembourg; the peaches of Montreuil in the Parc de Monceaux, and the grapes of Fontainebleau, too, ripen on some hill closer to Paris than the one where the Surènes is still greening'.¹⁵

The regions, joined to each other and to the metropolis by the railways, and the goods that are torn out of their local relation by modern transportation, shared the fate of losing their inherited place, their traditional spatial-temporal presence or, as Walter Benjamin sums it up in one word, their 'aura'.

The detaching of the remote region from its original isolation, its opening-up by the railroad, can well be defined as the 'loss of its aura', as Benjamin characterizes the aura and its loss in his essay 'The Work of Art in the Age of Mechanical Reproduction'. The notions of spatial-temporal presence and distance were integral parts of Benjamin's concept of the aura. He defined the 'aura of natural objects' as 'the unique phenomenon of a distance, however close it may be'.¹⁶ The aura of a work of art is 'its unique existence at the place where it happens to be'.¹⁷ This spatial-temporal singularity, this 'happening-but-once-ness', this *genuineness* of the object, is, according to Benjamin, destroyed by reproduction. 'The situations into which the product of mechanical reproduction can be brought may not touch the

15. *Op. cit.*, pp. 34-5.

16. Walter Benjamin, *Illuminations*, (New York, 1973), p. 222.

17. *Ibid.*, p. 220.

actual work of art, yet the quality of its presence is always depreciated.¹⁸ It is tempting to apply this statement to the outlying regions that were made accessible by the railroad: while being opened up to tourism, they remained, initially at least, untouched in their physical actuality, but their easy, comfortable, and inexpensive accessibility robbed them of their previous value as remote and out-of-the-way places. 'The staple of the district is, in fact, its beauty and its character of seclusion and retirement', Wordsworth wrote in 1844, defending the Lake District against the intrusion of the railways.¹⁹ The devaluation of outlying regions by their exploitation for mass tourism, by means of the railroad in the nineteenth century and air traffic in the twentieth, is a familiar occurrence. As soon as the railroad reached the seaside towns of southern England that had been strongholds of the aristocracy far into the nineteenth century, the middle classes took them over. Then the aristocracy retired to remote localities such as Scotland, Ireland, and the Lake District.²⁰ Contemporary air-line tourism is engaged in further devaluation of formerly exclusive, very remote regions.

The destruction of aura by means of reproduction, of which Benjamin speaks, is an expression of the same trend that brought the masses 'closer' to the outlying regions in the nineteenth century: 'The desire of contemporary masses to bring things "closer" spatially and humanly . . . is just as ardent as their bent toward overcoming the uniqueness of every reality by accepting its reproduction'.²¹ The remote regions were made available to the masses by means of tourism: this was merely a prelude, a preparation for making any unique thing available by means of reproduction. When spatial distance is no longer experienced, the differences between original and reproduction diminish. In the filmic perception — i.e., the perception of *montage*, the juxtaposition of the most disparate images into one unit — the new reality of annihilated in-between spaces finds its clearest expression: the film brings things closer to the viewer as well as closer together.

The regions lost their temporal identity in an entirely concrete

18. *Ibid.*, p. 221.

19. William Wordsworth, *The Prose Works*, ed. A. B. Grosart, (London, 1876, vol. 2), p. 326.

20. J. A. R. Pimlott, *The Englishman's Holiday* (London, 1947), p. 118.

21. Benjamin, *ibid.*, p. 223.

sense: the railroads deprived them of their local time. As long as they remained isolated from each other, they had their individual times: London time ran four minutes ahead of time in Reading, seven minutes and thirty seconds ahead of Cirencester time, fourteen minutes ahead of Bridgwater time.²² This patchwork of varying local times was no problem as long as traffic between the places was so slow that the slight temporal differences really did not matter; but the temporal foreshortening of the distances that was effected by the trains forced the differing local times to confront each other. Under traditional circumstances, a supra-regional schedule would be impossible: times of departure and arrival are valid only for the place whose local time is being used. For the next station, with its own time, that previous time is no longer valid. Regular traffic needs standardized time; this is analogous to the way in which the machine ensemble constituted by rail and carriage undermined individual traffic and brought about the transportation monopoly.

In the 1840s, the individual English railway companies proceeded to standardize time, but did not coordinate their efforts; each company instituted a new time on its own line. The process was so novel that it was repeated daily, in the most cumbersome manner, as Bagwell describes, apropos of the Grand Junction Company's procedure: 'Each morning an Admiralty messenger carried a watch bearing the correct time to the guard on the down Irish Mail leaving Euston for Holyhead. On arrival at Holyhead the time was passed on to officials on the Kingston boat who carried it over to Dublin. On the return mail to Euston the watch was carried back to the Admiralty messenger at Euston once more'.²³

When, after the establishment of the Railway Clearing House, the companies decided to cooperate and form a national railroad network, Greenwich Time was introduced as the standard time, valid on all the lines.²⁴ Yet railroad time was not accepted as

22. Philip S. Bagwell, *The Transportation Revolution from 1770* (London, 1974), p. 124.

23. *Op. cit.*, p. 125.

24. Greenwich time is the time kept at the Royal Observatory in Greenwich, founded in 1675. 'The precise standardization of time measurement dates from the foundation of the Royal Observatory in 1675' according to G. J. Whitrow, *The Nature of Time* (London, 1972). Like the later standard time, the original Greenwich time was created to meet the needs of expanding traffic, i.e., shipping, in the seventeenth century. Vessels carried Greenwich time with them on their chronometers, as it was necessary for orientation and navigation. However, it was not used as a generalized norm for the division of the

anything but schedule time until late in the century. As the rail network grew denser, incorporating more and more regions, the retention of local times became untenable: in 1880, railroad time became general standard time in England. In Germany, official recognition came in 1893; as early as 1884, an international conference on time standards, held in Washington, DC, divided the world into time zones.

In the United States, the process was more complicated, as there was no cooperation whatsoever between the private railroad companies. Each company had its own time, in most cases the local time of the company's headquarters. In stations used by several different lines there were clocks showing different times: three of these in Buffalo, six in Pittsburgh.²⁵ In 1889, the United States was divided into four time zones, essentially unchanged to this day; officially, at first, the times within the zones were regarded only as railroad time; in practice, these became regional standard times, although they were not given legal recognition until 1918.

day: Greenwich time was still restricted to the walls of the cabinet that contained the chronometer during the voyage.
25. John Stover, *American Railroads* (Chicago, 1961), p. 157.

Excursus **The Space of Glass Architecture**

The railroad reorganized space. In architecture, a similar reorganization occurred with the introduction of glass and steel as new building materials. The railroad machine ensemble multiplied speed and capacity of traffic; steel and glass multiplied the capacity of roofed structures. Both the railroad and the glass buildings were direct expressions of the multiplied productivity brought about by the industrial revolution. The railroad brought new quantities of goods into circulation; the edifices of glass architecture — railroad stations, market halls, exhibition palaces, arcades — served as places of transit and storage. The spatial capacity of glass architecture stands in a similar relation to the capacity of traditional architecture as the railroad's capacity stands to that of preindustrial transportation. This is due to the greater strength and resistance to stress characteristic of steel, the necessary complement to glass, compared to the previously utilized building materials. According to Alfred Gotthold Meyer, steel, in terms of stress resistance, is forty times as strong as stone, ten times as strong as wood.¹ The combination of steel as the carrier and glass as the filler led to a reappraisal of all previously recognized architectural principles; Meyer expresses it as follows:

(1) *The reappraisal of strength and mass.* By means of mathematical

1. Alfred Gotthold Meyer, *Eisenbauten: Ihre Geschichte und Ästhetik* (Eßlingen, 1907), p. 11.

[4] Panoramic Travel

Dreamlike traveling on the railroad. The towns which I pass between Philadelphia and New York make no distinct impression. They are like pictures on a wall. The more, that you can read all the way in a car a French novel.

— Emerson, *Journals*, 7 February 1843

In Goethe's journal on his trip to Switzerland in 1797, there is the following entry:

Left Frankfurt shortly after 7:00 A.M. On the Sachsenhausen mountain, many well-kept vineyards; foggy, cloudy, pleasant weather. The highway pavement has been improved with limestone. Woods in back of the watch-tower. A man climbing up the great tall beech trees with a rope and iron cleats on his shoes. What a village! A deadfall by the road, from the hills by Langen. *Sprendlingen*. Basalt in the pavement and on the highway up to Langen; the surface must break very often on this plateau, as near Frankfurt. Sandy, fertile, flat land; a lot of agriculture, but meagre . . .¹

As Goethe told Eckermann, this journal was 'merely jotted down as given by the moment'. Thus it is no poetic text, but a description of a journey by coach in the late eighteenth century, a record of impressions received on that journey. Goethe's trip from Frankfurt to Heidelberg consisted of a continuous se-

1. *Werke*, East Berlin ed., vol. 15, pp. 348 ff.; the complete journal of the Swiss journey in *Werke*, Sophia ed., vol. 2, sec. 3.

quence of impressions that demonstrate how intense was the experience of traversed space. Not only the villages and towns on the way are noted, not only the formations of the terrain, but even details of the material consistency of the pavement of the highway are incorporated into his perceptions.

The railway put an end to this intensity of travel, which had reached its peak in the eighteenth century and had found its cultural expression in the genre of the 'novel of travels'. The speed and mathematical directness with which the railroad proceeds through the terrain destroy the close relationship between the traveler and the traveled space. The space of *landscape* becomes, to apply Erwin Straus' concept, *geographical space*. 'In a landscape', says Straus, 'we always get to one place from another place; each location is determined only by its relation to the neighboring place within the circle of visibility. But geographical space is closed, and is therefore in its entire structure transparent. Every place in such a space is determined by its position with respect to the whole and ultimately by its relation to the null point of the coordinate system by which this space obtains its order. Geographical space is systematized.'² Straus sees the railroad as the essential agent of the transformation of landscape into geographical space:

The modern forms of traveling in which intervening spaces are, as it were, skipped over or even slept through, strikingly illustrate the systematically closed and constructed character of the geographical space in which we live as human beings. Before the advent of the railroad, geographical connections evolved, for the traveler, from the change in landscape. True, today the traveler also goes from place to place. But now we can get on a French train in the morning, and then, after twelve hours on the train (which is really being nowhere), we can get out in Rome. The old form of traveling provided for a more and better balanced relationship between landscape and geography.³

The nineteenth century found a fitting metaphor for this loss of continuity: repeatedly, the train was described as a projectile. First, the projectile metaphor was used to emphasize the train's

2. Erwin Straus, *op. cit.*, p. 319.

3. *Op. cit.*, p. 320.

speed, as in Lardner: a train moving at seventy-five miles an hour 'would have a velocity only four times less than a cannon ball'.⁴ Then, as Greenhow points out, there is the cumulative power and impact that turns a speeding train into a missile: 'When a body is moving at very high velocity, it then, to all intents and purposes, becomes a projectile, and is subject to the laws attending projectiles'.⁵ In 1889, after the complete cultural assimilation of the railroad, the projectile metaphor was still quite attractive. 'Seventy-five miles an hour', says a technical text published in that year, 'is one hundred and ten feet a second, and the energy of four hundred tons moving at that rate is nearly twice as great as that of a 2,000-pound shot fired from a 100-ton Armstrong gun'.⁶

The train was experienced as a projectile, and traveling on it, as being shot through the landscape — thus losing control of one's senses. 'In travelling on most of the railways . . .', says an anonymous author of the year 1844, 'the face of nature, the beautiful prospects of hill and dale, are lost or distorted to our view. The alternation of high and low ground, the healthful breeze, and all those exhilarating associations connected with "the Road", are lost or changed to doleful cuttings, dismal tunnels, and the noxious effluvia of the screaming engine.'⁷ Thus the rails, cuttings, and tunnels appeared as the barrel through which the projectile of the train passes. The traveler who sat inside that projectile ceased to be a traveler and became, as noted in a popular metaphor of the century, a mere parcel.⁸ 'It matters not whether you have eyes or are asleep or blind, intelligent or dull', said Ruskin, 'all that you can know, at best, of the country you pass is its geological structure and general

4. D. Lardner, *Railway Economy*, p. 179.

5. C. H. Greenhow, *An Exposition of the Danger and Deficiencies of the Present Mode of Railway Construction* (London, 1846), p. 6.

6. H. G. Prout, 'Safety in Railroad Travel', in *The American Railway*, ed. T. M. Cooley (New York, 1889), p. 187.

7. *Horse-Power Applied to Railways At Higher Rates of Speed than by Ordinary Draught* (London, 1844), p. 48.

8. 'It [the railway] transmutes a man from a traveller into a living parcel.' (Ruskin, *The Complete Works*, vol. 8, p. 159.) Manfred Riedel provides the two following quotes from lesser authors: for Ida Hahn-Hahn, the traveler 'demotes himself to a parcel of goods and relinquishes his senses, his independence' (Manfred Riedel, 'Vom Biedermeier zum Maschinenzeitalter', *Archiv für Kulturgeschichte*, vol. 43, (1961), fascicle 1, p. 119); and, according to Joseph Maria von Radowitz, 'for the duration of such transportation one ceases to be a person and becomes an object, a piece of freight'. (Op. cit., p. 120.)

clothing'.⁹

This loss of landscape affected all the senses. Realizing Newton's mechanics in the realm of transportation, the railroad created conditions that also 'mechanized' the traveler's perceptions. According to Newton, 'size, shape, quantity, and motion' are the only qualities that can be objectively perceived in the physical world. Indeed, those became the only qualities that the railroad traveler was able to observe in the landscape he traveled through. Smells and sounds, not to mention the synesthetic perceptions that were part of travel in Goethe's time simply disappeared.

The change effected in the traveler's relationship to the landscape became most evident in regard to his sense of sight: visual perception is diminished by velocity. George Stephenson testified to this in a statement given at a parliamentary hearing on safety problems on the railways in 1841: when asked for his estimation of the engine-driver's ability to see obstacles, he replied: 'If his attention is drawn to any object before he arrives at the place, he may have a pretty correct view of it; but if he only turns himself round as he is passing, he will see it very imperfectly'.¹⁰

Unlike the driver, the travelers had a very limited chance to look ahead: thus all they saw was an evanescent landscape. All early descriptions of railroad travel testify to the difficulty of recognizing any but the broadest outlines of the traversed landscape. Victor Hugo described the view from a train window in a letter dated 22 August 1837: 'The flowers by the side of the road are no longer flowers but flecks, or rather streaks, of red or white; there are no longer any points, everything becomes a streak; the grainfields are great shocks of yellow hair; fields of alfalfa, long green tresses; the towns, the steeples, and the trees perform a crazy mingling dance on the horizon; from time to time, a shadow, a shape, a spectre appears and disappears with

9. Ruskin, vol. 36, p. 62; this is essentially echoed by a French medical author: 'He [the traveler] hardly knows the names of the principal cities through which he passes, and only recognizes them, if at all, by the steeples of the best-known cathedrals which appear like trees by some faraway road'. (A. Aulagnier, *L'Union médicale de la Gironde* [Bordeaux, 1857], p. 525.)

10. Great Britain, *Parliamentary Papers*, 'Report from the Select Committee on Railways', vol. 5 of the section 'Transport and Communications' (repr. ed., Shannon, Ireland, 1968), p. 125.

lightning speed behind the window: it's a railway guard'.¹¹ And Jacob Burckhardt wrote in 1840: 'It is no longer possible to really distinguish the objects closest to one — trees, shacks, and such: as soon as one turns to take a look at them, they already are long gone'.¹² In a text from 1838 we find the statement that it is impossible to 'recognize a person standing by the road while driving past him' at the 'greatest speed',¹³ which prompted the following advice: 'He who has good eyesight . . . does well to acquire the habit of observing from a certain distance everything that attracts his attention while traveling: given some power of observation, he will not miss anything at all, not even during the stage of utmost velocity'.¹⁴

The recommendation to look at things 'from a certain distance' does not seem entirely realistic, in view of the traveler's situation in the train compartment: enclosed in it, the traveler has no way of distancing himself from the objects — all he can do is to ignore them and the portions of the landscape that are closest to him, and to direct his gaze on the more distant objects that seem to pass by more slowly. If he does not modify his old way of observing things while traveling — if he still tries to perceive proximity and distance in equal measure — the result, as noted in 1862 by *The Lancet*, a medical journal, is fatigue:

The rapidity and variety of the impressions necessarily fatigue both the eye and the brain. The constantly varying distance at which the objects are placed involves an incessant shifting of the adaptive apparatus by which they are focused upon the retina; and the mental effort by which the brain takes cognizance of them is scarcely productive of cerebral wear because it is unconscious; for no fact in physiology is more clearly established than that excessive functional activity always implies destruction of material and organic change of substance.¹⁵

Increased velocity calls forth a greater number of visual impressions for the sense of sight to deal with. This multiplication

11. Quoted in Baroli, *Le Train dans la Littérature Française*, Paris, 1964, p. 58.

12. From Manfred Riedel, *op. cit.*, p. 112.

13. G. Muhl, *Die westeuropäischen Eisenbahnen in ihrer Gegenwart und Zukunft* (Karlsruhe, 1838), p. 18.

14. *Op. cit.*, p. 19.

15. *The Influence of Railway Travelling on Public Health*, (London, 1862), p. 44 (is a compendium of articles previously published in *The Lancet*).

of visual impressions is an aspect of the process peculiar to modern times that Georg Simmel has called the development of urban perception. He characterizes it as an '*intensification of nervous stimulation* which results from the swift and uninterrupted change of outer and inner stimuli'.¹⁶ (Italics in original.) 'Lasting impressions', Simmel says, 'impressions which take a regular and habitual course and show regular and habitual contrasts — all these use up, so to speak, less consciousness than does the rapid crowding of changing images, the sharp discontinuity in the grasp of a single glance and the unexpectedness of onrushing impressions.'

The difference between the quality of stimuli in the metropolis and those of railroad travel need not concern us here: what is decisive is the quantitative increase of impressions that the perceptual apparatus has to receive and to process. Contemporary texts that compare the new travel experience with the traditional one demonstrate how that stimulus increase produced by increased velocity is experienced as stressful. The speed causes objects to escape from one's gaze, but one nevertheless keeps on trying to grasp them. This is implied in Eichendorff: 'These travels by steam keep on shaking the world — in which there really is nothing left but railway stations — like a kaleidoscope, incessantly, the landscapes speeding by in ever-changing grimaces even before one has been able to perceive any genuine traits of physiognomy; the flying salon presents one with ever new coteries, even before one has been able to really deal with the old ones'.¹⁷

John Ruskin, whose dislike of the railways created the most sensitive descriptions of the peculiar traits of pre-industrial travel, proposed an almost mathematical negative correlation between the number of objects that are perceived in a given period of time and the quality of that perception: 'I say, first, to be content with as little change as possible. If the attention is awake, and the feelings in proper train, a turn of a country road, with a cottage beside it, which we have not seen before, is as much as we need for refreshment; if we hurry past it, and take two cottages at a time, it is already too much; hence to any

16. *The Sociology of Georg Simmel*, ed. Kurt M. Wolff (Glencoe, Ill., 1950), p. 410.

17. Joseph von Eichendorff, *Werke* (Munich, 1970), vol. 2, p. 895.

person who has all his senses about him, a quiet walk along not more than ten or twelve miles of road a day, is the most amusing of all travelling; and all travelling becomes dull in exact proportion to its rapidity'.¹⁸

That final statement — traveling becomes dull in exact proportion to its rapidity — represents the evaluation of railroad travel made by all those nineteenth-century travelers who were still accustomed to pre-industrial travel and thus not able to develop modes of perception appropriate to the new form of transportation. Dullness and boredom resulted from attempts to carry the perceptual apparatus of traditional travel, with its intense appreciation of landscape, over to the railway. The inability to acquire a mode of perception adequate to technological travel crossed all political, ideological, and esthetic lines, and appeared among the most disparate personalities of the nineteenth century. Flaubert wrote to a friend in 1864: 'I get so bored on the train that I am about to howl with tedium after five minutes of it. One might think that it's a dog someone has forgotten in the compartment; not at all, it is M. Flaubert, groaning'.¹⁹ Before a railway journey, Flaubert stayed up all night in order to be able to sleep through the journey and not experience it at all: he could do nothing with the vista offered to him by the compartment window.²⁰ The most diverse sources provide any number of similar complaints. To indicate the width of the spectrum, and its independence from attitudes based on *Weltanschauung*, let us examine one more piece of evidence: the report of a railroad journey in the United States by the politically liberal German-American Francis J. Lieber in 1834:

From Albany to Schenectady, you travel by rail-road; and the least

18. Ruskin, vol. 5, p. 370. Elsewhere, Ruskin speaks of the travelers 'who once in their necessarily prolonged travel were subjected to an influence, from the silent sky and slumbering fields, more effectual than known or confessed', (Vol. 8, p. 246.)

19. *Correspondence* (Paris, 1929), vol. 5, pp. 153-4.

20. *Op. cit.*, letter dated 30 October 1873, quoted in Baroli, *Le Train*, p. 201. People slept in their train compartments not only out of boredom; an equally strong motivation was the need to escape from the tiring influx of stimuli by means of sleep: 'There are people, hurried by their business, who . . . in the course of one day have to cast their eyes upon the panoramas of several hundreds of places. They arrive at their destination overwhelmed by a previously unknown fatigue. Just ask these victims of velocity to tell you about the locations they have traveled through, to describe the perspectives whose rapid images have imprinted themselves, one after another, on the mirror of their brain. They will not be able to answer you. The agitated mind has called sleep to its rescue, to put an end to its overexcitation'. (Gustave Claudin, *Paris* [Paris, 1867], pp. 71-2.)

exciting of all traveling, it seems to me, is decidedly locomotion by steam on a rail-road. The traveler, whose train of ideas is always influenced by the manner in which he proceeds, thinks in a steam car of nothing else but the place of his destination, for the very reason that he is moving so quickly. Pent up in a narrow space, rolling along on an even plain which seldom offers any objects of curiosity, and which, when it does, you pass by with such rapidity, that your attention is never fixed; together with a number of people who have all the same object in view, and think like you of nothing else, but when they shall arrive at the journey's end — thus situated, *you find nothing to entertain or divert you, except now and then a spark flying into the window of the car. . . .* There is no common conversation, no rondolaugh, nothing but a dead calm, interrupted from time to time, only by some passenger pulling out his watch and uttering a sound of impatience. . . .²¹ (Italics in original.)

While the consciousness molded by traditional travel found itself in a mounting crisis, another kind of perception started to develop, one which did not try to fight the effects of the new technology of travel but, on the contrary, assimilated them entirely. For such a pair of eyes staring out of the compartment window, all the things that the old consciousness experienced as losses became sources of enrichment. The velocity and linearity with which the train traversed the landscape did not destroy it — not at all; only under such conditions was it possible to fully appreciate that landscape. Thus, a description of a trip from Manchester to Liverpool in the year 1830:

The passenger by this new line of route having to traverse the deepest recesses where the natural surface of the ground is the *highest*, and being mounted on the loftiest ridges and highest embankments, riding above the tops of the trees, and overlooking the surrounding country, where the natural surface of the ground is the *lowest* — this peculiarity and this variety being occasioned by that essential requisite in a well-constructed Railway — a level line — imposing the necessity of cutting through the high lands and embanking across the low; thus in effect, presenting to the traveller all the variety of mountain and ravine in pleasing succession, whilst in reality he is moving almost on a level plane and while the natural face of the country scarcely exhibits even those slight undulations which

21. Francis Lieber, *The Stranger in America* (London, 1834), vol. 2, pp. 1-2.

are necessary to relieve it from tameness and insipidity.²²

That is not a picturesque landscape destroyed by the railroad; on the contrary, it is an intrinsically monotonous landscape brought into an esthetically pleasing perspective by the railroad. The railroad has created a new landscape. The velocity that atomized the objects of Ruskin's perception, and thus deprived them of their contemplative value, became a stimulus for the new perception. It is the velocity that made the objects of the visible world attractive. Let us compare the following passage with Ruskin's comments, and we shall see how differently velocity and evanescence can be experienced during the same period of time: 'The beauties of England', an American traveler wrote in 1853, 'being those of a dream, should be as fleeting':

They never appear so charming as when dashing on after a locomotive at forty miles an hour. Nothing by the way requires study, or demands meditation, and though objects immediately at hand seem tearing wildly by, yet the distant fields and scattered trees, are not so bent on eluding observation, but dwell long enough in the eye to leave their undying impression. Every thing is so quiet, so fresh, so full of home, and destitute of prominent objects to detain the eye, or distract the attention from the charming whole, that I love to dream through these placid beauties whilst sailing in the air, quick, as if astride a tornado.²³

To Benjamin Gastineau, whose newspaper essays on travel were collected in 1861 in book form as *La Vie en chemin de fer*, the motion of the train through the landscape appeared as the motion of the landscape itself. The railroad choreographed the landscape. The motion of the train shrank space, and thus displayed in immediate succession objects and pieces of scenery that in their original spatiality belonged to separate realms. The traveler who gazed through the compartment window at such successive scenes, acquired a novel ability that Gastineau calls 'la philosophie synthétique du coup d'oeil' ('the synthetic philosophy of the glance'). It was the ability to perceive the discrete, as

22. Henry Booth, *An Account of the Liverpool and Manchester Railway* (Liverpool, 1830), pp. 47-8.

23. Matthew E. Ward, *English Items; or, Microcosmic Views of England and Englishmen* (New York, 1853), pp. 71-2.

it rolls past the window, indiscriminately. The scenery that the railroad presents in rapid motion appeared in Gastineau's text as a panorama, without being explicitly referred to as such:

Devouring distance at the rate of fifteen leagues an hour, the steam engine, that powerful stage manager, throws the switches, changes the decor, and shifts the point of view every moment; in quick succession it presents the astonished traveler with happy scenes, sad scenes, burlesque interludes, brilliant fireworks, all visions that disappear as soon as they are seen; it sets in motion nature clad in all its light and dark costumes, showing us skeletons and lovers, clouds and rays of light, happy vistas and sombre views, nuptials, baptisms, and cemeteries.²⁴

In another, roughly contemporary, French text we find all three essential characteristics of the panorama described. Jules Clarétie, a Parisian journalist and publicist, characterized the view from the train window as an evanescent landscape whose rapid motion made it possible to grasp the whole, to get an overview; defining the process, he made specific use of the concept of panorama: 'In a few hours, it [the railway] shows you all of France, and before your eyes it unrolls its infinite panorama, a vast succession of charming tableaux, of novel surprises. Of a landscape it shows you only the great outlines, being an artist versed in the ways of the masters. Don't ask it for details, but for the living whole. Then, after having charmed you thus with its painterly skills, it suddenly stops and quite simply lets you get off where you wanted to go'.²⁵

What, exactly, did this new perception that we are referring to as 'panoramic' consist of? Dolf Sternberger uses this concept of the panorama and the panoramic to describe European modes of perception in the nineteenth century — the tendency to see the discrete indiscriminately. 'The views from the windows of Europe', Sternberger says, 'have entirely lost their dimension of depth and have become mere particles of one and the same panoramic world that stretches all around and is, at each and every point, merely a painted surface'.²⁶ In Sternberger's view,

24. Benjamin Gastineau, *La Vie en chemin de fer* (Paris, 1861), p. 31.

25. Jules Clarétie, *Voyages d'un parisien* (Paris, 1865), p. 4.

26. Dolf Sternberger, *Panorama, oder Ansichten vom 19. Jahrhundert*, 3rd ed. (Hamburg, 1955), p. 57.

modern transportation, the railroad first and foremost, is the main cause for such panoramization of the world: 'The railroad transformed the world of lands and seas into a panorama that could be experienced. Not only did it join previously distant localities by eliminating all resistance, difference, and adventure from the journey: now that traveling had become so comfortable and common, it turned the travelers' eyes outward and offered them the opulent nourishment of ever changing images that were the only possible thing that could be experienced during the journey'.²⁷

What the opening of major railroads provided in reality — the easy accessibility of distant places — was attempted in illusion, in the decades immediately preceding that opening, by the 'panoramic' and 'dioramic' shows and gadgets. These were designed to provide, by showing views of distant landscapes, cities, and exotic scenes, 'a substitute for those still expensive and onerous journeys'.²⁸ A newspaper of the year 1843 described the Parisian public 'reclining on well-upholstered seats and letting the five continents roll by at its pleasure without having to leave the city and without having to risk bad weather, thirst, hunger, cold, heat, or any danger whatsoever'.²⁹ That the diorama fad died out in Paris around 1840,³⁰ more or less at the same time that the first great railways were opened (lines from Paris to Orléans and Rouen appearing in 1843) would seem corroborative evidence for the presumed connection. The simultaneous rise of photography provides more support for the thesis. According to Buddemeier, the public became fascinated, at first:

Not by the taking of a picture of any specific object, but by the way in which any random object could be made to appear on the photographic plate. This was something of such unheard-of novelty that the photographer was delighted by each and every shot he took, and it awakened unknown and overwhelming emotions in him, as Gaudin points out. . . . Indeed, the question arises: why did the exact

27. Op. cit., p. 50.

28. Hans Buddemeier, *Panorama, Diorama, Photographie: Entstehung und Wirkung neuer Medien im 19. Jahrhundert (Origin and Effect of New Media in the Nineteenth Century)* Munich, 1970, p. 41.

29. *Ibid.*, p. 45.

30. *Ibid.*, p. 48.

repetition of reality excite people more than the reality itself? Gaudin hints at an answer: he describes how intensely the first photographs were scrutinized, and what people were mostly looking for. For instance: looking at a picture of the building across the street from one's own window, one first started counting the roof shingles and the bricks out of which the chimney was constructed. It was a delight to be able to observe how the mason had applied the mortar between the individual stones. Similar instances occur in other texts dealing with photographs. Tiny, until then unnoticed details are stressed continuously: paving stones, scattered leaves, the shape of a branch, the traces of rain on the wall.³¹

Thus the intensive experience of the sensuous world, terminated by the industrial revolution, underwent a resurrection in the new institution of photography. Since immediacy, close-ups and foreground had been lost in reality, they appeared particularly attractive in the new medium.

Sternberger observes that the vistas seen from Europe's windows had lost their dimension of depth; this happened first with the vistas seen from the train compartment window. There the depth perception of pre-industrial consciousness was, literally, lost: velocity blurs all foreground objects, which means that there no longer is a foreground — exactly the range in which most of the experience of pre-industrial travel was located. The foreground enabled the traveler to relate to the landscape through which he was moving. He saw himself as part of the foreground, and that perception *joined* him to the landscape, included him in it, regardless of all further distant views that the landscape presented. Now velocity dissolved the foreground, and the traveler lost that aspect. He was removed from that 'total space' which combined proximity and distance: he became separated from the landscape he saw by what Richard Lucae, speaking of ferro-vitreous architecture, has called an 'almost immaterial barrier'. The glass separated the interior space of the Crystal Palace from the natural space outside without actually changing the atmospheric quality of the latter in any visible manner, just as the train's speed separated the traveler from the space that he had previously been a part of. As the traveler stepped out of that space, it became a stage setting, or a series of

31. *Ibid.*, p. 78.

such pictures or scenes created by the continuously changing perspective. Panoramic perception, in contrast to traditional perception, no longer belonged to the same space as the perceived objects: the traveler saw the objects, landscapes, etc. *through* the apparatus which moved him through the world. That machine and the motion it created became integrated into his visual perception; thus he could only see things in motion. That mobility of vision — for a traditionally orientated sensorium, such as Ruskin's, an agent for the dissolution of reality — became a prerequisite for the 'normality' of panoramic vision. This vision no longer experienced evanescence: evanescent reality had become the new reality.

While the railroad caused the foreground to disappear, it also replaced looking at the landscape with a new practice that had not existed previously. Reading while traveling became almost obligatory. The dissolution of reality and its resurrection as panorama thus became agents for the total emancipation from the traversed landscape: the traveler's gaze could then move into an imaginary surrogate landscape, that of his book. By the mid-nineteenth century, reading while traveling had become an established custom. The following observation is found in the minutes of an 1860 congress of French physicians: 'Practically everybody passes the time reading while traveling on the train. This is so common that one rarely sees members of a certain social class embark on a journey without first purchasing the means by which they can enjoy this pastime'.³²

The idea of reading while traveling on trains is as old as the railroad itself. An article in the *Quarterly Review* of 1830 noted that the journey is 'so easy, that a passenger might read a newspaper with perfect comfort'.³³ A German text of 1833 made a connection between the dissolution of the outer world by means of velocity, and the opportunity to compensate for this by developing an activity within the train compartment that will engage one's attention. Lips spoke of 'a speed at which the objects outside rush past the eye without color or contour, and thus cannot be recognized anymore', and continued: 'And yet, the motion of such a steam-car is so imperceptible, smooth, and

32. *Congrès médical de France, troisième session tenue à Bordeaux* (Paris, 1866), p. 828.

33. *Quarterly Review*, vol. 42 (1830), p. 384.

comfortable, that it is not only possible to *read* but even to *write* in it with the greatest ease; thus, a great number of people, such as scholars, officials, merchants, etc., need no longer rest or interrupt their regular routine while traveling, but can pursue it while sitting in the steam-car'.³⁴ (Italics in original.)

In the late 1840s, English booksellers established stalls in railway stations, as well as a peculiar kind of lending library, to meet the general demand for things to read while traveling. John W. Dodds describes this development:

The development of railways encouraged the sale of books of all kinds. Until 1848 no systematic attempt had been made to supply passengers with either books or papers at the railway stations. In that year W. H. Smith got the exclusive right to sell books and papers on the Birmingham Railway. His first bookstall was at Euston Station. Shortly he had the franchise for the entire London and Northwestern System. By 1849, the station library at Paddington terminus contained one thousand volumes, chiefly works of fiction. Here, for the charge of one penny, a passenger had free access to the use of the library while waiting for trains, and for slightly more could take a volume with him on his journey, turning it in at his destination. To meet this new demand Routledge launched his *Railway Library* — novels by Cooper, James, Hawthorne, James Grant, Dumas, and others. Murray advertised his 'Literature for the Rail — works of sound information and innocent amusement'.³⁵

In 1852 Louis Hachette emulated the English model in France: in a communication to the French railroad companies he proposed a 'large-scale operation of bookselling that apart from its advantages for the companies would also be both useful and pleasing to the public'. The monotony and boredom of travel by rail, mentioned in so many contemporary descriptions, reappears here as a commercial argument for the establishment of railroad bookstalls:

The traveler finds himself condemned to idleness as soon as he enters the carriage. The monotony of the trip soon takes effect: boredom arrives, and, what is worse, impatience engulfs the unfor-

34. Michael Alexander Lips, *Die Unanwendbarkeit der englischen Eisenbahnen auf Deutschland und deren Ersatz durch Dampffuhrwerk auf verbesserten Chausseen* . . . (Marburg, 1833), p. 4.

35. John W. Dodds, *The Age of Paradox* (New York and Toronto, 1952), p. 374.

fortunate traveler, pulled along by the machine like a piece of baggage.... L. Hachette and Company have come up with an idea for turning the enforced leisure and the boredom of a long trip to the enjoyment and instruction of all. They have thought of establishing a railway library that will provide only interesting volumes in a handy format and at a moderate price.³⁶

Only two years after the opening of the first railway bookstall in France, of whose income the rail companies received 30 per cent, Hachette operated sixty branches in the whole of France. In 1864, the income exceeded for the first time one million francs, and the sale of books was still greater than that of newspapers. A little later that ratio is reversed: in 1866 the income from the sale of newspapers was 969,000 francs, that from the sale of books, 527,000 francs.³⁷

A glance at the offerings of the English and French railway bookstalls shows that the reading public was almost exclusively bourgeois. An English survey of 1851 showed that, in contrast to the supply of trashy mass literature in the regular bookstores, the railway bookstalls and lending libraries in London carried highly respectable non-fiction, fiction, travel guides, etc.³⁸ Hachette's catalogue had the following categories: travel guides, books about travel, French literature, classics, agriculture and industry, children's books.³⁹

Reading while traveling was an exclusively bourgeois occupation. The lower classes who used the railroad did not read, not only because they could not afford to but also because they had no desire to do so. Their traveling situation was quite different from that of the more privileged strata. The carriages of the third and fourth class were not divided into compartments: they had no formal resemblance to the traditional means of travel, while the compartments of the first and second class did. The lower classes, who really joined the ranks of travelers only after the advent of the railroad, were unencumbered by memories of previous forms of travel: thus the new forms were not as strange to them as they were to those classes who had to abandon their private coaches for the train. The primitive,

36. Jean Mistler, *La Librairie Hachette de 1826 à nos jours* (Paris, 1964), p. 123.

37. *Op. cit.*, p. 299.

38. Dodds, pp. 374-5.

39. Mistler, p. 124.

spacious third- and fourth-class carriages into which the proletarian traveling public was crowded characteristically promoted continuous communication: in the compartments of the bourgeois first- and second-class carriages, such communication had died out, at least by the end of the nineteenth century. 'How often . . . I have . . . , while traveling alone or with people with whom it was impossible to start a conversation, envied the travelers of the third and fourth class, from whose heavily populated carriages merry conversation and laughter rang all the way into the boredom of my isolation cell', says P. D. Fischer.⁴⁰

The emergence of the habit of reading while traveling was not only a result of the dissolution and panoramization of the outside landscape due to velocity, but also a result of the situation inside the train compartment. The railroad disrupted the travelers' relationships to each other as it disrupted their relationship to the traversed landscape. Constantin Pecqueur explains the phenomenon of dissolution, dispersal, and trivialization of perception and communication, by the greater number of objects and persons with which the travelers' power of attention (which have remained constant) were forced to deal:

In these great halls, and in the cheerful caravans of the trains and steamships, one's affections tend to go out to a greater number of objects and individuals, and consequently become less intense or durable in each case. This encourages inconstancy and creates excitement over variety; life and affections are seen to lose in depth what they gain in range; the social and general sentiments, on the other hand, find this to be a most pleasing state; while the private sentiments, the familial ones, would seem to suffer from it.⁴¹

Travelers of the eighteenth century, prior to the railroads, formed small groups that, for the duration of the journey, were characterized by intensive conversation and interaction: the travel novels of the period testify to this quite eloquently. The travelers in the train compartment did not know what to do with each other, and reading became a surrogate for the communication that no longer took place. This connection between

40. P. D. Fischer, *Betrachtungen eines in Deutschland reisenden Deutschen* (Berlin, 1895), p. 31.

41. Constantine Pecqueur, *Economie Sociale*, vol. 1, p. 349.

reading and the alienation of railroad travelers from one another was made by all authors dealing with the subject of travel reading. It appears in the following contribution to the medical congress of 1866, in which travel reading is cited as the general and sole activity of travelers:

Nowadays one travels so fast and sees, if the journey is of any duration, such a succession of new faces, that one frequently arrives at the destination without having said a single word. Conversation no longer takes place except among people who know each other, at least not beyond the exchange of mere generalities; any attempt to go beyond these often lapses due to the indifference of some travelers. Thus one might say that the railroads have in this respect, too, completely changed our habits. Whenever, in the past, one knew that one was going to pass several hours, sometimes several days, in the company of others, one tried to establish a rapport with one's companions that often lasted beyond the duration of the journey. Today we no longer think about anything but the impatiently awaited and soon reached destination. The traveler one takes one's leave from may get off at the next station where he will be replaced by another. Thus reading becomes a necessity.⁴²

The effects of reading while traveling were discussed generally in medical circles in the 1860s. The debate as to whether it was harmful or beneficial related the practice to the special stresses put on the optical sense by rail travel, and to visual perception in general. According to one side of the argument, reading while traveling was harmful to the eye because 'when the traveler sets himself to read, he imposes yet further labour on the eye in tracing the shifting characters of his book or newspaper, and also on the brain'.⁴³ The traveler who *concentrated* on his reading behaved in just as old-fashioned a manner as the traveler who, accustomed to the pace of the stagecoach,

42. Op. cit., p. 830.

43. *The Influence of Railway Travelling on Public Health*, p. 44. A French author even posited a connection between mental affliction and travel reading, claiming that the latter caused a 'congestion of the retina': 'An eminent Parisian alienist, with whom I recently discussed this pernicious influence of reading while traveling on trains, told me that he not only admitted it to be true, but that an English physician, the head of a great private hospital, had told him that he had treated several patients suffering from general paralysis whose initial phenomenon, or determining cause, had been cerebral congestion brought about by those conditions that I have described.' (Legrand, de Saullé, in *Bulletin de la Société de Médecine pratique*, (1863), p. 9.)

attempted to fix his stare on the objects flitting past the compartment window. In both cases, the result was exhaustion of the senses and of the mind. To adapt to the conditions of rail travel, a process of deconcentration, or dispersal of attention, took place in reading as well as in the traveler's perception of the landscape outside: Hachette's rising sales of newspapers and falling sales of books attest to that. The afore-mentioned contribution to the medical congress of 1866 stated that travel reading may have had deleterious effects on eyesight, but adds that it would be impossible to curtail it: 'Nevertheless, no matter what one says or does, reading will remain the most natural occupation of railway travelers, in this new form of locomotion that has so profoundly altered the traveler's relations to each other'.⁴⁴

44. Op. cit., p. 830.