

While McLuhan's theories can be applied to the computer in its manipulations of different media or in its appearance as a new medium, the shift he described, from book-culture to a culture of electronic media, has certainly taken place already. Looking at McLuhan's explorations, although they are directed at earlier types of "new media," is sure to aid in understanding our world's further transitions from analog to digital media. Even if McLuhan's exhortations to ignore content completely are not persuasive, it certainly makes sense at times to consider the medium on its own. Besides reminding us of the excitement of transitional times and providing us with useful and powerful ideas for thinking about our media environment, McLuhan also shows us, by example, another significant point: it's important to have fun and to explore new ways of thinking a bit, rather than always asserting, arguing, and sifting the new into old categories—and it helps to not take yourself too seriously.

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McLuhan's influence remains strong in today's media writing, among enthusiasts of new media and those who are less ebullient about its prospects. Neil Postman, for instance, writes in *Amusing Ourselves to Death*, "this book is an inquiry into and lamentation about the most significant American cultural fact of the second half of the twentieth century: the decline of the Age of Typography and the ascendancy of the Age of Television. This change-over has dramatically and irreversibly shifted the content and meaning of public discourse, since two media so vastly different cannot accommodate the same ideas. . . . If all of this sounds suspiciously like Marshall McLuhan's aphorism, the medium is the message, I will not disavow the association. . . . he spoke in the tradition of Orwell and Huxley—that is, as a prophet, and I have remained steadfast to his teaching that the clearest way to see through a culture is to attend to its tools for conversation" (8).

Further Reading

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Original Publication

"The Galaxy Reconfigured or the Plight of Mass Man in an Individualist Society" from *The Gutenberg Galaxy: The Making of Typographic Man*. Toronto: University of Toronto Press, 1962.

"The Medium Is the Message" from *Understanding Media: The Extensions of Man*. New York: McGraw Hill, 1964.

The Galaxy Reconfigured or the Plight of Mass Man in an Individualist Society

Marshall McLuhan

The present volume has employed a mosaic pattern of perception and observation up till now. William Blake can provide the explanation and justification of this procedure. *Jerusalem*, like so much of his other poetry, is concerned with

the changing patterns of human perception. Book II, chapter 34, of the poem contains the pervasive theme:

If Perceptive organs vary, Objects of Perception seem to vary:

If the Perceptive Organs close, their Objects seem to close also.

Determined as he was to explain the causes and effects of psychic change, both personal and social, he arrived long ago at the theme of *The Gutenberg Galaxy*:

The Seven Nations fled before him: they became what they beheld.

Blake makes quite explicit that when sense ratios change, men change. Sense ratios change when any one sense or bodily or mental function is externalized in technological form:

The Spectre is the Reasoning Power in Man, & when separated

From Imagination and closing itself as in steel in a Ratio Of the Things of Memory, It thence frames Laws & Moralities

To destroy Imagination, the Divine Body, by Martyrdoms & Wars.¹

Imagination is that ratio among the perceptions and faculties which exists when they are not embedded or outered in material technologies. When so outered, each sense and faculty becomes a closed system. Prior to such outering there is entire interplay among experiences. This interplay or synesthesia is a kind of tactility such as Blake sought in the bounding line of sculptural form and in engraving.

When the perverse ingenuity of man has outered some part of his being in material technology, his entire sense ratio is altered. He is then compelled to behold this fragment of himself "closing itself as in steel." In beholding this new thing, man is compelled to become it. Such was the origin of lineal, fragmented analysis with its remorseless power of homogenization:

The Reasoning Spectre Stands between
the Vegetative Man & his Immortal Imagination.²

Blake's diagnosis of the problem of his age was, like Pope's in *The Dunciad*, a direct confrontation of the forces shaping human perception. That he sought mythical form by which to render his vision was both necessary and ineffectual. For myth is the mode of simultaneous awareness of a complex group of causes and effects. In an age of fragmented, lineal awareness, such as produced and was in turn greatly exaggerated by Gutenberg technology, mythological vision remains quite opaque. The Romantic poets fell far short of Blake's mythical or simultaneous vision. They were faithful to Newton's single vision and perfected the picturesque outer landscape as a means of isolating single states of the inner life.³

It is instructive for the history of human sensibility to note how the popular vogue of the Gothic romance in Blake's time later unfolded into a serious esthetic with Ruskin and the French symbolists. This Gothic taste, trite and ridiculous as it first appeared to serious people, was yet a confirmation of Blake's diagnosis of the defects and needs of his age. It was itself a pre-Raphael or pre-Gutenberg quest for a unified mode of perception. In *Modern Painters* (vol. III, p. 91) Ruskin states the matter in a way which entirely dissociates Gothic medievalism from any historical concern about the Middle Ages. He states the matter in a way that won him the serious interest of Rimbaud and Proust:

A fine grotesque is the expression, in a moment, by a series of symbols thrown together in bold and fearless connection, of truths which it would have taken a long time to express in any verbal way, and of which the connection is left for the beholder to work out for

himself; the gaps, left or overleaped by the haste of the imagination, forming the grotesque character.

For Ruskin, Gothic appeared as an indispensable means of breaking open the closed system of perception that Blake spent his life describing and fighting. Ruskin proceeds (p. 96) to explain Gothic grotesque as the best way of ending the regime of Renaissance perspective and single vision or realism:

It is with a view (not the least important among many others bearing upon art) to the reopening of this great field of human intelligence, long entirely closed, that I am striving to introduce Gothic architecture into daily domestic use; and to revive the art of illumination, properly so called; not the art of miniature-painting in books, or on vellum, which has ridiculously been confused with it; but of making writing, simple writing, beautiful to the eye, by investing it with the great chord of perfect colour, blue, purple, scarlet, white, and gold, and in that chord of colour, permitting the continual play of the fancy of the writer in every species of grotesque imagination, carefully excluding shadow; the distinctive difference between illumination and painting proper, being, that illumination admits no shadows, but only gradations of pure colour.

The student of Rimbaud will find that it was while reading this part of Ruskin that Rimbaud found his title for *Illuminations*. The technique of vision in the *Illuminations* or "painted slides," (as Rimbaud called them, in English, on his title page) is exactly as Ruskin delineates the grotesque. But even Joyce's *Ulysses* finds anticipatory designation in the same context:

Hence it is an infinite good to mankind when there is full acceptance of the grotesque, slightly sketched or expressed; and, if field for such expression be frankly granted, an enormous mass of intellectual power is turned to everlasting use, which, in this present century of ours, evaporates in street gibing or vain revelling; all the good wit and satire expiring in daily talk, (like foam on wine,) which in the thirteenth and fourteenth centuries had a permitted and useful expression in the arts of sculpture and illumination, like foam fixed into chalcedony.⁴

Joyce, that is to say, also accepted the grotesque as a mode of broken or syncopated manipulation to permit *inclusive* or simultaneous perception of a total and diversified field. Such, indeed, is symbolism by definition—a collocation, a *parataxis* of components representing insight by carefully established

ratios, but without a point of view or lineal connection or sequential order.

Nothing, therefore, could be more remote from Joyce's ratios than the aim of pictorial realism. Indeed, he uses such realism and such Gutenberg technology as part of his symbolism. For example, in the seventh or Aeolus episode of *Ulysses* the technology of the newspaper is made the occasion for introducing all of the nine hundred and more rhetorical figures specified by Quintilian in his *Institutes of Oratory*. The figures of classical rhetoric are archetypes or postures of individual minds. Joyce by means of the modern press translates them into archetypes or postures of collective consciousness. He breaks open the closed system of classical rhetoric at the same time that he cuts into the closed system of newspaper somnambulism. Symbolism is a kind of witty jazz, a consummation of Ruskin's aspirations for the grotesque that would have shocked him a good deal. But it proved to be the only way out of "single vision and Newton's sleep."

Blake had the insights but not the technical resources for rendering his vision. Paradoxically, it was not through the book but through the development of the mass press, especially the telegraph press, that poets found the artistic keys to the world of simultaneity, or of modern myth. It was in the format of the daily press that Rimbaud and Mallarmé discovered the means of rendering the interplay of all the functions of what Coleridge called the "esemplastic" imagination.⁵ For the popular press offers no single vision, no point of view, but a mosaic of the postures of the collective consciousness, as Mallarmé proclaimed. Yet these modes of collective or tribal consciousness proliferating in the telegraphic (simultaneous) press, remain uncongenial and opaque to the bookmen locked in "single vision and Newton's sleep."

The principal ideas of the eighteenth century were so crude as to seem risible to the wits of the time. The great chain of Being was in its way as comical as the chains which Rousseau proclaimed in his *Social Contract*. Equally inadequate as an idea of order was the merely visual notion of goodness as a *plenum*: "The best of all possible worlds" was merely a quantitative idea of a bag crammed to the utmost with goodies—an idea which lurked still in the nursery world of R. L. Stevenson. ("The world is so full of a number of things.") But in J. S. Mill's *Liberty* the quantitative idea of truth as an ideal container packed with every possible

opinion and point of view created mental anguish. For the suppression of any possible aspect of truth, any valid angle, might weaken the whole structure. In fact, the stress on the abstract visual evoked as standards of truth the mere matching of object with object. So unconscious were people of this matching theory as being dominant, that when a Pope or a Blake pointed out that truth is a ratio between the mind and things, a ratio made by the shaping imagination, there was nobody to note or comprehend. Mechanical matching, not imaginative making, will rule in the arts and sciences, in politics and education, until our own time.

Earlier, in presenting Pope's prophetic vision of the return of tribal or collective consciousness, the relation to Joyce's *Finnegans Wake* had been indicated. Joyce had devised for Western man individual pass-keys to the collective consciousness, as he declared on the last page of the *Wake*. He knew that he had solved the dilemma of Western individual man faced with the collective or tribal consequences of first his Gutenberg, and next his Marconi, technologies. Pope had seen the tribal consciousness latent in the new mass culture of the book-trade. Language and the arts would cease to be prime agents of critical perception and become mere packaging devices for releasing a spate of verbal commodities. Blake and the Romantics and the Victorians alike became obsessed with the actualization of Pope's vision in the new organization of an industrial economy embedded in a self-regulating system of land, labour, and capital. The Newtonian laws of mechanics, latent in Gutenberg typography, were translated by Adam Smith to govern the laws of production and consumption. In accordance with Pope's prediction of automatic trance or "robo-centrism," Smith declared that the mechanical laws of the economy applied equally to the things of the mind: "In opulent and commercial societies to think or to reason comes to be, like every other employment, a particular business, which is carried on by a very few people, who furnish the public with all the thought and reason possessed by the vast multitudes that labour."⁶

Adam Smith is always faithful to the fixed visual point of view and its consequent separation of faculties and functions. But in this passage Smith does seem to sense that the new role of the intellectual is to tap the collective consciousness of "the vast multitudes that labour." That is to say, the intellectual is no longer to direct individual perception and judgment but to explore and to communicate

the massive unconsciousness of collective man. The intellectual is newly cast in the role of a primitive seer, *vates*, or hero incongruously peddling his discoveries in a commercial market. If Adam Smith was reluctant to push his view to this point of the transcendental imagination, Blake and the Romantics felt no qualms but turned literature over to the transcendental arm. Henceforth, literature will be at war with itself and with the social mechanics of conscious goals and motivations. For the matter of literary vision will be collective and mythic, while the forms of literary expression and communication will be individualist, segmental, and mechanical. The vision will be tribal and collective, the expression private and marketable. This dilemma continues to the present to rend the individual Western consciousness. Western man knows that his values and modalities are the product of literacy. Yet the very means of extending those values, technologically, seem to deny and reverse them. Whereas Pope fully faced up to this dilemma in *The Dunciad*, Blake and the Romantics tended to devote themselves to one side of it, the mythic and collective. J. S. Mill, Matthew Arnold, and a great many others devoted themselves to the other side of the dilemma, the problem of individual culture and liberty in an age of mass-culture. But neither side has its meaning alone, nor can the causes of the dilemma be found anywhere but in the total galaxy of events that constitute literacy and Gutenberg technology. Our liberation from the dilemma may, as Joyce felt, come from the new electric technology, with its profound organic character. For the electric puts the mythic or collective dimension of human experience fully into the conscious wake-a-day world. Such is the meaning of the title *Finnegans Wake*. While the old Finn cycles had been tribally entranced in the collective night of the unconscious, the new Finn cycle of totally interdependent man must be lived in the daylight of consciousness.

At this point, *The Great Transformation* by Karl Polanyi, on "the political and economic origins of our time," assumes complete relevance in the mosaic of *The Gutenberg Galaxy*. Polanyi is concerned with the stages by which the Newtonian mechanics invaded and transformed society in the eighteenth and nineteenth centuries, only to encounter a reverse dynamic from within. His analysis of how prior to the eighteenth century "the economic system was absorbed in the social system" is exactly parallel to the situation of literature and the arts up till that time. This was true till the

time of Dryden, Pope, and Swift, who lived to detect the great transformation. Polanyi enables us (p. 68) to face the familiar Gutenberg principle of practical advance and utility by separation of forms and functions:

As a rule, the economic system was absorbed in the social system, and whatever principle of behavior predominated in the economy, the presence of the market pattern was found to be compatible with it. The principle of barter or exchange, which underlies this pattern, revealed no tendency to expand at the expense of the rest. Where markets were most highly developed, as under the mercantile system, they thrived under the control of a centralized administration which fostered autarchy both in the households of the peasantry and in respect to national life. Regulation and markets, in effect, grew up together. The self-regulating market was unknown; indeed the emergence of the idea of self-regulation was a complete reversal of the trend of development.

The principle of self-regulation repeating by reverberation from the Newtonian sphere swiftly entered all the social spheres. It is the principle that Pope mocked in "whatever is right" and that Swift ridiculed in "the mechanical operation of the Spirit." It derives from a merely vision image of an uninterrupted chain of Being or a visual *plenum* of the good as "the best of all possible worlds." Granted the merely visual assumptions of lineal continuity or of sequential dependence, the principle of non-interference in the natural order becomes the paradoxical conclusion of applied knowledge.

Through the sixteenth and seventeenth centuries the transformation of mechanization of crafts by the application of visual *method* had proceeded slowly. But it was a procedure of maximal interference with existing non-visual modes. By the eighteenth century the process of applied knowledge had reached such a momentum that it became accepted as a natural process which must not be impeded save at the peril of greater evil: "all partial evil universal good." Polanyi notes (p. 69) this automation of consciousness as follows:

A further group of assumptions follows in respect to the state and its policy. Nothing must be allowed to inhibit the formation of markets, nor must incomes be permitted to be formed otherwise than through sales. Neither must there be any interference with the adjustment of prices to changed market conditions—

whether the prices are those of goods, labor, land, or money. Hence there must not only be markets for all elements of industry, but no measure of policy must be countenanced that would influence the action of these markets. Neither price, nor supply, nor demand must be fixed or regulated; only such policies and measures are in order which help to ensure the self-regulation of the market by creating conditions which make the market the only organizing power in the economic sphere.

The assumptions latent in typographic segmentation, and in applied knowledge by the method of fragmenting of crafts and the specializing of social tasks, these assumptions were the most acceptable in the degree that typography enlarged its markets. The same assumptions presided over the formation of Newtonian space and time and mechanics. So literature, industry, and economics were easily accommodated within the Newtonian sphere. Those who questioned these assumptions were simply denying the facts of science. Now that Newton is no longer synonymous with science, we can meditate on the dilemmas of the self-regulating economy and the hedonistic calculus with light hearts and clear heads. But eighteenth century man was locked into a closed visual system that had enveloped him he knew not how. So he proceeded, robo-centred, to carry out the behests of the new vision.

However, in 1709 Bishop Berkeley had published *A New Theory of Vision*, which revealed the lop-sided assumptions of Newtonian optics. Blake, at least, had understood the Berkeleyan critique and had restored tactility to its prime role as agent of unified perception. Today artists and scientists alike concur in praising Berkeley. But his wisdom was lost on his age that was wrapped in "single vision and Newton's sleep." The hypnotized patient carried out the behests of the abstract visual control. Polanyi observes (p. 71):

A self-regulating market demands nothing less than the institutional separation of society into an economic and political sphere. Such a dichotomy is, in effect, merely the restatement, from the point of view of society as a whole, of the existence of a self-regulating market. It might be argued that the separateness of the two spheres obtains in every type of society at all times. Such an inference, however, would be based on a fallacy. True, no society can exist without a system of some kind which ensures order in the production and distribution of goods. But that does not imply the existence of separate economic institutions; normally, the economic

order is merely a function of the social, in which it is contained. Neither under tribal, nor feudal, nor mercantile conditions was there, as we have shown, a separate economic system in society. Nineteenth century society, in which economic activity was isolated and imputed to a distinctive economic motive, was, indeed, a singular departure.

Such an institutional pattern could not function unless society was somehow subordinated to its requirements. A market economy can exist only in a market society. We reached this conclusion on general grounds in our analysis of the market pattern. We can now specify the reasons for this assertion. A market economy must comprise all elements of industry, including labor, land, and money. (In a market economy the last also is an essential element of industrial life and its inclusion in the market mechanism has, as we will see, far-reaching institutional consequences.) But labor and land are no other than the human beings themselves of which every society consists and the natural surroundings in which it exists. To include them in the market mechanism means to subordinate the substance of society itself to the laws of the market.

A market economy "can exist only in a market society." But to exist, a market society requires centuries of transformation by Gutenberg technology; hence, the absurdity in the present time of trying to institute market economies in countries like Russia or Hungary, where feudal conditions obtained until the twentieth century. It is possible to set up modern production in such areas, but to create a market economy that can handle what comes off the assembly lines presupposes a long period of psychic transformation, which is to say, a period of altering perception and sense ratios.

When a society is enclosed within a particular fixed sense ratio, it is quite unable to envisage another state of affairs. Thus, the advent of nationalism was quite unforeseen in the Renaissance, although its causes arrived earlier. The Industrial Revolution was well on the way in 1795, yet, as Polanyi points out (p. 89):

... the generation of Speenhamland was unconscious of what was on its way. On the eve of the greatest industrial revolution in history, no signs and portents were forthcoming. Capitalism arrived unannounced. No one had forecast the development of a machine industry; it came as a complete surprise. For some time England had been actually expecting a permanent recession of foreign trade when the dam burst, and the

old world was swept away in one indomitable surge towards a planetary economy.

That every generation poised on the edge of massive change should later seem oblivious of the issues and the imminent event would seem to be natural enough. But it is necessary to understand the power and thrust of technologies to isolate the senses and thus to hypnotize society. The formula for hypnosis is "one sense at a time." And new technology possesses the power to hypnotize because it isolates the senses. Then, as Blake's formula has it: "They became what they beheld." Every new technology thus diminishes sense interplay and consciousness, precisely in the new area of novelty where a kind of identification of viewer and object occurs. This somnambulist conforming of beholder to the new form or structure renders those most deeply immersed in a revolution the least aware of its dynamic. What Polanyi observes about the insentience of those involved in the expediting of the new machine industry is typical of all the local and contemporary attitudes to revolution. It is felt, at those times, that the future will be a larger or greatly improved version of the *immediate past*. Just before revolutions the image of the immediate past is stark and firm, perhaps because it is the only area of sense interplay free from obsessional identification with new technological form.

No more extreme instance of this delusion could be mentioned than our present image of TV as a current variation on the mechanical, movie pattern of processing experience by repetition. A few decades hence it will be easy to describe the revolution in human perception and motivation that resulted from beholding the new mosaic mesh of the TV image. Today it is futile to discuss it at all.

Looking back to the revolution in literary forms in the later eighteenth century, Raymond Williams writes in *Culture and Society, 1780-1850* (p. 42) that "changes in convention only occur when there are radical changes in the general structure of feeling." Again, "while in one sense the market was specializing the artist, artists themselves were seeking to generalize their skills into the common property of imaginative truth." (p. 43) This can be seen in the Romantics who, discovering their inability to talk to conscious men, began by myth and symbol to address the unconscious levels of dream life. The imaginative reunion with tribal man was scarcely a voluntary strategy of culture.

One of the most radical of new literary conventions of the market society of the eighteenth century was the novel. It had been preceded by the discovery of "equitone prose." Addison and Steele, as much as anybody else, had devised this novelty of maintaining a single consistent tone to the reader. It was the auditory equivalent of the mechanically fixed view in vision. Mysteriously, it is this break-through into equitone prose which suddenly enabled the mere author to become a "man of letters." He could abandon his patron and approach the large homogenized public of a market society in a consistent and complacent role. So that with both sight and sound given homogeneous treatment, the writer was able to approach the mass public. What he had to offer the public was equally a homogenized body of common experience such as the movie finally took over from the novel. Dr. Johnson devoted his *Rambler no. 4* (March 31, 1750) to this theme:

The works of fiction, with which the present generation seems more particularly delighted, are such as exhibit life in its true state, diversified only by accidents that daily happen in the world, and influenced by passions and qualities which are really to be found in conversing with mankind.

Johnson shrewdly notes the consequences of this new form of social realism, indicating its basic deviation from the forms of book learning:

The task of our present writers is very different; it requires, together with that learning which is to be gained from books, that experience which can never be attained by solitary diligence, but must arise from general converse and accurate observation of the living world. Their performances have, as Horace expresses it, *plus oneris quantum veniae minus*, little indulgence, and therefore more difficulty. They are engaged in portraits of which every one knows the original, and can detect any deviation from exactness of resemblance. Other writings are safe, except from the malice of learning, but these are in danger from every common reader; as the slipper ill executed was censured by a shoemaker who happened to stop in his way at the Venus of Apelles.

Johnson continues in this vein, pointing out further rivalries between the new novel and the older modes of book learning:

In the romances formerly written, every transaction and sentiment was so remote from all that passes among

men, that the reader was in very little danger of making any applications to himself; the virtues and crimes were equally beyond his sphere of activity; and he amused himself with heroes and with traitors, deliverers and persecutors, as with beings of another species, whose actions were regulated upon motives of their own, and who had neither faults nor excellencies in common with himself.

But when an adventurer is levelled with the rest of the world, and acts in such scenes of the universal drama, as may be the lot of any other man; young spectators fix their eyes upon him with closer attention, and hope, by observing his behaviour and success, to regulate their own practices, when they shall be engaged in the like part.

For this reason these familiar histories may perhaps be made of greater use than the solemnities of professed morality, and convey the knowledge of vice and virtue with more efficacy than axioms and definitions.

Quite parallel with this extension of the book page into the form of a talking picture of ordinary life, was what Leo Lowenthal mentions in *Popular Culture and Society* (p. 75) as “the crucial shift from Patron to Public,” citing the testimony of Oliver Goldsmith’s 1759 *Enquiry into the Present State of Polite Learning in Europe*:

At present the few poets of England no longer depend on the Great for subsistence, they have now no other patrons but the public, and the public, collectively considered, is a good and generous master. . . . A writer of real merit now may easily be rich if his heart be set only on fortune: and for those who have no merit, it is but fit that such should remain in merited obscurity.

Leo Lowenthal’s new study of popular literary culture is not only concerned with the eighteenth century and after, but studies the dilemmas of diversion *v.* salvation through art from Montaigne and Pascal to modern magazine iconology. In pointing out how Goldsmith made a great change in criticism by shifting attention to the *experience* of the reader, Lowenthal has broken rich new ground (pp. 107–8):

But perhaps the most far-reaching change which took place in the concept of the critic was that a two-way function was premised for him. Not only was he to reveal the beauties of literary works to the general public by means of which, in Goldsmith’s terms, “even the philosopher may acquire popular applause”; he must also interpret the public back to the writer. In brief, the critic

not only “teaches the vulgar on what part of a character to lay the emphasis of praise,” he must also show “the scholar where to point his application so as to deserve it.” Goldsmith believed that the absence of such critical mediators explained why wealth rather than true literary fame was the goal of so many writers. The result, he feared, might be that nothing would be remembered of the literary works of his time.

We have observed that Goldsmith, in his endeavor to come to grips with the dilemma of the writer, represented a variety of sometimes conflicting views. We have seen, however, that it was likely to be Goldsmith in his optimistic rather than in his pessimistic vein who set the tone for what was to come. So, too, his view of the “ideal” critic, of his function as one of mediation between the audience and the writer, was to prevail. Critics, writers, and philosophers—Johnson, Burke, Hume, Reynolds, Kames, and the Whartons—all adopted Goldsmith’s premise as they began to analyze the experience of the reader.

As the market society defined itself, literature moved into the role of consumer commodity. The public became patron. Art reversed its role from guide for perception into convenient amenity or package. But the producer or artist was compelled, as never before, to study the effect of his art. This in turn revealed to human attention new dimensions of the function of art. As manipulators of the mass market tyrannized over the artist, the artist in isolation achieved new clairvoyance concerning the crucial role of design and of art as a means to human order and fulfilment. Art has become as total in its mandate for human order as the mass markets that created the plateau from which all can now share the awareness of new scope and potential for everyday beauty and order in all aspects of life at once. Retrospectively, it may well prove necessary to concede to the period of mass marketing the creation of the means of a world order in beauty as much as in commodities.

It is quite easy to establish the fact that the same means that served to create the world of consumer abundance by mass production served also to put the highest levels of artistic production on a more assured and consciously controlled basis. And, as usual, when some previously opaque area becomes translucent, it is because we have moved into another phase from which we can contemplate the contours of the preceding situation with ease and clarity. It is this fact that makes it feasible to write *The Gutenberg Galaxy* at all. As

we experience the new electronic and organic age with ever stronger indications of its main outlines, the preceding mechanical age becomes quite intelligible. Now that the assembly line recedes before the new patterns of information, synchronized by electric tape, the miracles of mass-production assume entire intelligibility. But the novelties of automation, creating workless and propertyless communities, envelop us in new uncertainties.

A most luminous passage of A. N. Whitehead's classic *Science and the Modern World* (p. 141) is one that was discussed previously in another connection.

The greatest invention of the nineteenth century was the invention of the method of invention. A new method entered into life. In order to understand our epoch, we can neglect all the details of change, such as railways, telegraphs, radios, spinning machines, synthetic dyes. We must concentrate on the method in itself; that is the real novelty, which has broken up the foundations of the old civilisation. The prophecy of Francis Bacon has now been fulfilled; and man, who at times dreamt of himself as a little lower than the angels, has submitted to become the servant and the minister of nature. It still remains to be seen whether the same actor can play both parts.

Whitehead is right in insisting that "we must concentrate on the method itself." It was the Gutenberg method of homogeneous segmentation, for which centuries of phonetic literacy had prepared the psychological ground, that evoked the traits of the modern world. The numerous galaxy of events and products of that method of mechanization of handicrafts, are merely incidental to the method itself. It is the method of the fixed or specialist point of view that insists on repetition as the criterion of truth and practicality. Today our science and method strive not towards a point of view but to discover how not to have a point of view, the method not of closure and perspective but of the open "field" and the suspended judgment. Such is now the only viable method under electric conditions of simultaneous information movement and total human interdependence.

Whitehead does not elaborate on the great nineteenth century discovery of the method of invention. But it is, quite simply, the technique of beginning at the end of any operation whatever, and of working backwards from that point to the beginning. It is the method inherent in the

Gutenberg technique of homogeneous segmentation, but not until the nineteenth century was the method extended from production to consumption. Planned production means that the total process must be worked out in exact stages, backwards, like a detective story. In the first great age of mass production of commodities, and of literature as a commodity for the market, it became necessary to study the consumer's experience. In a word it became necessary to examine the effect of art and literature before producing anything at all. This is the *literal* entrance to the world of myth.

It was Edgar Allan Poe who first worked out the rationale of this ultimate awareness of the poetic process and who saw that instead of directing the work to the reader, it was necessary to incorporate the reader in the work. Such was his plan in "the philosophy of composition." And Baudelaire and Valéry, at least, recognized in Poe a man of the Leonardo da Vinci stature. Poe saw plainly that the anticipation of effect was the only way to achieve organic control for the creative process. T. S. Eliot, like Baudelaire and Valéry, gives his entire sanction to Poe's discovery. In a celebrated passage of his essay on *Hamlet*,⁷ he writes:

The only way of expressing emotion in the form of art is by finding an "objective correlative"; in other words, a set of objects, a situation, a chain of events which shall be the formula of that *particular* emotion; such that when the external facts, which must terminate in sensory experience, are given, the emotion is immediately evoked. If you examine any of Shakespeare's more successful tragedies, you will find this exact equivalence; you will find that the state of mind of Lady Macbeth walking in her sleep has been communicated to you by a skilful accumulation of imagined sensory impressions; the words of Macbeth on hearing of his wife's death strike us as if, given the sequence of events, these words were automatically released by the last event in the series.

Poe set this method to work in many of his poems and stories. But it is most obvious in his invention of the detective story in which Dupin, his sleuth, is an artist-esthete who solves crimes by a method of artistic perception. Not only is the detective story the great popular instance of working backwards from effect to cause, it is also the form in which the reader is deeply involved as co-author. Such is also the case in symbolist poetry whose completion of effect from moment to moment requires the reader to participate in the poetic process itself.

It is a characteristic chiasmus that waits upon the utmost development of any process that the last phase shall show characteristics opposite to the early phases. A typical example of massive psychic chiasmus or reversal occurred when Western man fought the harder for individuality as he surrendered the idea of unique personal existence. The nineteenth century artists made a mass-surrender of that unique selfhood, that had been taken for granted in the eighteenth century, as the new mass pressures made the burdens of selfhood too heavy. Just as Mill fought for individuality even though he had given up the self, the poets and artists moved towards the idea of impersonal process in art production in proportion as they berated the new masses for impersonal process in the consumption of art products. A similar and related reversal or chiasmus occurred when the consumer of popular art was invited by new art forms to become participant in the art process itself.

This was the moment of transcendence of the Gutenberg technology. The centuries-old separation of senses and functions ended in a quite unexpected unity.

The reversal by which the presence of the new markets and the new masses encouraged the artist to surrender the unique self might have seemed a final consummation for art and technology alike. It was a surrender made almost inevitable when the symbolists began to work backwards from effect to cause in the shaping of the art product. Yet it was just at this extreme moment that a new reversal occurred. The art process had no sooner approached the rigorous, impersonal rationale of the industrial process, in the period from Poe to Valéry, than the assembly line of symbolist art was transformed into the new "stream of consciousness" mode of presentation. And the stream of consciousness is an open "field" perception that reverses all aspects of the nineteenth century discovery of the assembly-line or of the "technique" of invention. As G. H. Bantock writes of it:

in a world of increasing socialization, standardization, and uniformity, the aim was to stress uniqueness, the purely personal in experience; in one of "mechanical" rationality, to assert other modes through which human beings can express themselves, to see life as a series of emotional intensities involving a logic different from *that of the rational world and capturable only in dissociated images or stream of consciousness musings.*⁸

Thus the technique of the suspended judgment, the great discovery of the twentieth century in art and physics alike, is a recoil and transformation of the impersonal assembly-line of nineteenth century art and science. And to speak of the stream of consciousness as unlike the rational world is merely to insist upon visual sequence as the rational norm, handing art over to the unconscious quite gratuitously. For what is meant by the irrational and the non-logical in much modern discussion is merely the rediscovery of the ordinary transactions between the self and the world, or between subject and object. Such transactions had seemed to end with the effects of phonetic literacy in the Greek world. Literacy had made of the enlightened individual a closed system, and set up a gap between appearance and reality which ended with such discoveries as the stream of consciousness.

As Joyce expressed it in the *Wake*, "My consumers are they not my producers?" Consistently, the twentieth century has worked to free itself from the conditions of passivity, which is to say, from the Gutenberg heritage itself. And this dramatic struggle of unlike modes of human insight and outlook has resulted in the greatest of all human ages, whether in the arts or in the sciences. We are living in a period richer and more terrible than the "Shakespearean Moment" so well described by Patrick Cruttwell in his book of the same title. But it has been the business of *The Gutenberg Galaxy* to examine only the mechanical technology emergent from our alphabet and the printing press. What will be the new configurations of mechanisms and of literacy as these older forms of perception and judgment are interpenetrated by the new electric age? The new electric galaxy of events has already moved deeply into the Gutenberg galaxy. Even without collision, such co-existence of technologies and awareness brings trauma and tension to every living person. Our most ordinary and conventional attitudes seem suddenly twisted into gargoyles and grotesques. Familiar institutions and associations seem at times menacing and malignant. These multiple transformations, which are the normal consequence of introducing new media into any society whatever, need special study and will be the subject of another volume on *Understanding Media* in the world of our time.

theNewMediaReader

Edited by Noah Wardrip-Fruin and Nick Montfort

Designed by Michael Crumpton

The MIT Press

Cambridge, Massachusetts

London, England

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This book was set in ITC Chapparral, Officina Serif, and
Officina Sans by Michael Crumpton.

Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

The new media reader / edited by Noah Wardrip-Fruin and Nick Montfort
p. cm.

Includes bibliographical references and index.

ISBN 0-262-23227-8 (hc.: alk. paper)

1. Telecommunication. 2. Mass media. 3. Computers and
civilization. 4. Internet. I. Wardrip-Fruin, Noah. II. Montfort, Nick.

TK5102.5 .N48 2003
302.23—dc21

2002026412

10 9 8 7 6 5 4 3 2

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