

~~Philosophical Text~~

ADRIAN FORTY, “FUNCTION.”

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“Function” (and in this category we shall include also “Functional” and “Functionalism”) was without question an important concept in modern architecture, but it has above all been in the *critique* of modernism that it has come into its own. To a considerable extent, its definition, its meaning, even its naming, has come about through the activities of critics of architectural modernism since about 1960. As Bill Hillier has remarked, “One scours the architectural manifestos of the twentieth century in vain for a thoroughgoing statement of the determinism from spatial form to function or its inverse.”¹ In so far as we have a “theory” or theories of function, they are of recent making, and not of the period when “functionalism” is alleged to have dominated modern architecture. Our immediate task, then, is to identify what “function” meant *before* it was given its present coherence and intensity.

A “function” describes the result of the action of one quantity upon another; relative to architecture, the question is what is acting upon what? From the first use of “function” in the eighteenth century until the end of the nineteenth century, the quantity acted upon was almost always taken as the building’s tectonic elements, its “structure,”² a term with which “function” has been closely associated; the quantities performing the action were principally the building’s own mechanical forces. In other words, until the beginning of the twentieth century—with a few rare exceptions that will be discussed below—“function” was a term primarily relating to the tectonics of building. During the twentieth century, a new use of “function” became more widespread, one in which buildings themselves were described as acting upon people, or social material. It is this second meaning—and its converse, the action of society in determining the forms of buildings—that have attracted so much attention, but which are the more difficult to trace historically.

Considered historically, we can identify at least five different uses of “function” prior to about 1930. What makes the concept complicated is that it is a metaphor, and a metaphor that borrows from at least two, and perhaps three different fields: from

1. Bill Hillier, *Space is the Machine* (Cambridge: Cambridge University Press, 1996), 377–378.

2. *Ibid.*, 276–285.

mathematics, from biology, and maybe from sociology. A further complication is that the English word “function” as applied to architecture is a translation of terms originating in Italian, French and German. . . .

AS A MATHEMATICAL METAPHOR—A CRITIQUE OF THE CLASSICAL SYSTEM OF ORNAMENT

The first use of “function” relative to architecture was by the Venetian friar Carlo Lodoli in the 1740s.³ Lodoli’s motto, “*Devonsi unire e fabrica e ragione e sia funzion la rappresentazione*”—“Unite building with reason and let function be the representation”—summarized an argument against the conventions of the classical system of ornament. Lodoli’s main objection was to the imitation in stone of forms developed originally for timber construction; Francesco Algarotti, the author of one of the two surviving accounts of Lodoli’s ideas, reported “nothing, he insisted, should be represented which is not also true in function.”⁴ What Lodoli meant by “function” is inferred from the other, more accurate, source of Lodoli’s ideas, by Andrea Memmo. Memmo indicated that Lodoli wanted to develop forms of stone construction and decoration that derived from the mechanical forces acting upon the material. Evidence of the application of this idea is to be found in the surprising lintels and window-sills of the pilgrim hospice attached to S. Francesco della Vigna in Venice, apparently executed to Lodoli’s instructions. According to Joseph Rykwert, Lodoli borrowed the term “function” from mathematics, to which it had been introduced in the 1690s by Leibniz, to describe the compound of variables; Lodoli’s notion of function is the compound of mechanical force and material within any specific component of architecture. Lodoli’s thinking was popularized by the late eighteenth-century Italian architectural writer Francesco Milizia, who misleadingly presented it simply as an argument against superfluous decoration: “whatever is seen should always have a function”;⁵ but Lodoli had not argued against decoration as such, but for a different system of decoration, based upon the inherent properties of materials. Since Milizia’s books were translated into French from the 1790s, they may have provided a source for the term in French architectural circles; however, by this time the precision of Lodoli’s mathematical metaphor was entirely lost, first of all misrepresented by Milizia, and now displaced by the arrival of a new analogue for “function”, drawn from the developing science of biology.

AS A BIOLOGICAL METAPHOR, DESCRIPTIVE OF THE PURPOSES OF THE PARTS OF THE CONSTRUCTION RELATIVE TO EACH OTHER AND TO THE WHOLE

In biology, a science created in France out of the work of Lamarck and Cuvier in particular, “function” was a key concept. Whereas earlier natural historians had classified specimens according to the visual appearance of their organs, and their position in the body, in the new science of biology developed at the end of the eighteenth century, organs were analysed according to the functions they performed within the organism as a whole, and their hierarchical relationship to other organs. “Function” in this sense was closely related

3. On Lodoli, see Joseph Rykwert, “Lodoli on Function and Representation,” *Architectural Review*, 160 (1976): 35; and Joseph Rykwert, *The First Moderns: The Architects of the Eighteenth Century* (Cambridge: MIT Press, 1980), Chapter 8.

4. Francesco Algarotti, “Saggio Sopra l’Architettura,” in *Saggi* (Bari: Laterza e Figli, 1963), 35. First published in 1756.

5. Francesco Milizia, *Memorie Degli Architetti Antichi e Moderni* (Parma: Stamperia Reale, 1781), vol. 1, xv.

to “structure,”⁶ for it was the identification of “functions”—of individual limbs and organs—which made it possible to deduce the structure.

Although developed by biologists in the 1790s, the term appears to have been little used by architects until rather later. “The genius of modern times, which loves to assign every individual product or object of a distinct function” was manifested most comprehensively in architectural discourse after the 1850s through the writings of Viollet-le-Duc, whose phrase this was.⁷ For Viollet, “function” was an important concept, fundamental to his whole theory of rational construction: for example, writing about walls, he says:

In every specimen of mason-work each piece taken separately in the case of dressed stone, or each section in concrete works, should clearly indicate its function. We ought to be able to analyse a building, as we take a puzzle to pieces, so that the place and function of each of the parts cannot be mistaken.⁸

And Viollet was—repeatedly—explicit about the biological origins of the metaphor.

It is in this sense, of the role played by each part within the structure, that “function” was principally understood in the English-speaking world from the mid-nineteenth century; this may be to do with a familiarity with the careful analyses of the constructive systems of Gothic architecture by the English archeologists William Whewell and Robert Willis in the 1830s and 1840s, or to the influence of Viollet’s books. To take a single example of the characteristic English-language use of “function,” we may cite the American critic Montgomery Schuyler’s recollection of visiting the New York State Capitol at Albany around 1880 with Leopold Eidlitz, the architect of the alterations:

Standing in the rotunda of the Court House one day, when his own vari-colored brick arches and columns had been inserted between the cast-iron panels of the older work, he said “Is it possible for anybody to fail to see that this,” pointing to the new work, “performs a function, and that that,” pointing to the old, “does not?”⁹

6. Georges Cuvier, “Discours Préliminaire,” in *Recherches sur les Ossements Fossiles*, trans. Robert Kerr as *Essay on the Theory of the Earth* (Cambridge: Cambridge University Press, 2009), vol. 1, 281–282. First published in 1812.

7. Eugene Emmanuel Viollet-le-Duc, *Lectures on Architecture*, trans. Benjamin Bucknall (New York: Dover Publications, 1987), vol. 1, 449. First published in 1863.

8. *Ibid.*, vol. 2, 33.

9. Montgomery Schuyler, “A Great American Architect: Leopold Eidlitz” in *American Architecture and Other Writings* (Cambridge: Belknap Press, 1961), vol. 1, 181. First published in 1908.

AS A BIOLOGICAL METAPHOR WITHIN THE “ORGANIC” THEORY OF FORM

A second, but quite different biological metaphor of “function” derives from the organic notion of form developed by the German Romantics. This is the context of Louis Sullivan’s famous remarks about form and function. Within German Romanticism, “form” was either “mechanical” or “organic.” The distinction, first made by A. W. Schlegel was paraphrased in English by Coleridge in 1818:

The form is mechanic, when on any given material we impress a pre-determined form, not necessarily arising out of the properties of the material; as when to a mass of wet clay we give whatever shape we wish it to retain when hardened. The organic form, on the other hand, is innate; it shapes, as it develops itself from within,

and the fullness of its development is one and the same with the perfection of its outward form, such as the life is, such is the form.¹⁰

What constitutes the prime-mover within the organic theory of form—a question first posed by Aristotle—was left unanswered: but there is no doubt about the influence the theory had upon a wide variety of architects and writers amongst them the American sculptor and art theorist Horatio Greenough, usually credited as the first English speaker to apply “function” to architecture. Greenough’s essays on art and architecture, written in the 1840s, are all essentially to do with the development of organic form in the visual arts. “Function” played a key part in this, but Greenough was never very exact about what it meant—his use of it shifted between the straightforward expression of the building’s utilitarian purpose, and a much more transcendental notion of the outward expression of organic form, as, for example, when he writes as follows: “Instead of forcing the functions of every sort of building into one general form, adopting an outward shape for the sake of the eye or of association, without reference to the inner distribution, let us begin from the heart as the nucleus, and work outward.”¹¹ But in whatever sense he used it, Greenough’s choice of the term “function” was explicitly biological—“as the first step in our search after the great principles of construction . . . observe the skeletons and skins of animals.”¹² And it is from these observations that he concludes “If there be any principle of structure more plainly inculcated in the works of the Creator than all others, it is the principle of unflinching adaptation of forms to functions.”¹³ Twentieth-century commentators have tended to exaggerate the modernity of Greenough’s ideas. We should remember that not only was Greenough’s “function” based upon the earlier Romantic notion of organic form, but it is also clear that Greenough was interested in “function” less in terms of the satisfaction of human needs (about which he had no theory, and little to say), and more as a way of achieving that very eighteenth-century architectural aim, the expression of appropriate character: “The unflinching adaptation of a building to its position and use gives, as a sure product of that adaptation, character and expression.”¹⁴ Greenough’s originality was not to have anticipated twentieth-century functionalism (which he did not do, for he had no sense of the reciprocal action of society upon buildings and of buildings upon society), but rather in putting new life into the old concept of “character” by linking it to use through the idea of “function”—to present, as he put it, “Character as the record of Function.”¹⁵

If Greenough’s conception of function was derived in part from the Romantics’ organic theory of form, this was wholly true of the doctrine of “suppressed functions” with which the mysterious John Edelmänn so captivated the young Louis Sullivan.¹⁶ Exactly where Sullivan—generally agreed to have coined the aphorism “*form follows function*”¹⁷—acquired his ideas about function is uncertain, but his reliance upon German thought is indisputable.¹⁸ At no point did Sullivan’s “function” have anything to do with utility or the satisfaction of user needs; it was instead entirely based in metaphysics, the expression of organic essence. “The Germ is the real thing: the seat of identity. Within its delicate

10. Samuel Taylor Coleridge, *Biographia Literaria*, ed. J. Shawcross, (Oxford: Clarendon Press, 1907), 229. First published in 1817.

11. Horatio Greenough *Form and Function: Remarks on Art, Design, and Architecture*, ed. Harold A. Small (Berkeley: University of California Press, 1958), 62.

12. *Ibid.*, 58.

13. *Ibid.*, 118.

14. *Ibid.*, 62.

15. *Ibid.*, 71.

16. Louis H. Sullivan, *The Autobiography of an Idea* (New York: Dover Publications, 1956), 207. First published in 1924.

17. *Ibid.*, 258.

18. David S. Andrew, *Louis Sullivan and the Polemics of Modern Architecture: The Present against the Past* (Urbana: University of Illinois Press, 1985), 198, 32–34, 62–67.

mechanism lies the will to power: the function which is to seek and eventually to find its full expression in form.”¹⁹ When Sullivan talks about “function,” one could satisfactorily paraphrase his meaning as “destiny.” This is clear from the long and famous discussion in *Kindergarten Chats* 12 and 13 that begins, “generally speaking outer appearances resemble inner purposes. For instances, the form, oak tree, resembles and expresses the function or purpose, oak.”²⁰ Further proof of what Sullivan meant by “function” comes from a remark of his partner, Dankmar Adler: “Function and environment determine form”—implying that “function” was not the same as “environment.” “Function,” as far as Sullivan was concerned, was the inner spiritual force that determined “organic” form; “environment” is an external agency, a determinate of “mechanical” form, in the terminology of the Romantics. During the twentieth century this distinction has been lost: the organic theory of form, with all its epistemological difficulties, has been largely forgotten, and “function,” to which it was once exclusively attached, has been transferred to the action of external agencies—“environment”—upon form.

Sullivan was certainly also aware of the other biological sense of “function” from Viollet-le-Duc, and, inevitably, Sullivan and others allowed the two to be confused. Interesting in this connection is the book by the American architect Leopold Eidlitz, *The Nature and Function of Art* (1881). Eidlitz had studied in Vienna, so was familiar with German thought, but moved to the United States in 1843 and became an enthusiastic disciple of Viollet-le-Duc. In his book, he attempted to reconcile Viollet’s strictly mechanical, tectonic sense of “function” with a German, idealist notion of function. Thus he writes:

All natural organisms are possessed of the mechanical ability to perform certain functions. This ability we find more or less clearly expressed in their forms as a whole or in their crystallization. In this way they convey to the mind an expression of these functions, and thus they tell the story of their being. The architect, in imitation of this natural condition of matter, so models his forms that they also tell the story of their functions; and these functions are always mechanical conditions of strength, elegance and repose, in combinations of various quantities of these properties. The fundamental principle of the modeling of architectural forms is therefore mechanical.²¹

For Eidlitz, the expression of mechanical function provides the means to represent the building’s innate function, “the story of its being.”

“FUNCTION” MEANING “USE”

By the mid-nineteenth century, in both English and French, “function” had a limited currency as meaning the activities designated for a particular building or part of a building. Two of the writers already discussed, Greenough and Viollet-le-Duc, both used “function” in this sense. For example, Greenough wrote, “to apportion the spaces for convenience, decide their size, and model their shapes for their functions—these acts organize a

19. Louis H. Sullivan, *A System of Architectural Ornament according with a Philosophy of Man’s Powers*, (New York: AIA Press, 1924), 299.

20. Louis H. Sullivan, “Kindergarten Chats,” in *Kindergarten Chats and Other Writings* (New York: Wittenborn Art Books, 1976), 43. First published in 1901.

21. Leopold Eidlitz, *The Nature and Function of Art, More Especially of Architecture* (London: Sampson Low, 1881), 223–224.

building.”²² Viollet-le-Duc says of domestic architecture—in an overtly biological analogy, discussed in another context [. . .]—“There is in every building . . . one principal organ . . . and certain secondary organs or members, and the necessary appliances for supplying all these parts by a system of circulation. Each of these organs has its own function.”²³ And George Gilbert Scott, in 1857, on the design of factories, advised “making the parts which have the same functions uniform and alike.”²⁴ As a description of the activities specific to a particular building or part of a building, “function” occurs more rarely than one might expect before the twentieth century, although this has become a ubiquitous modern meaning. . . .

THE FORM–FUNCTION PARADIGM

Implicit in the polemic about “functional” modernism was the assumption of a relationship between buildings and the members of society inhabiting them. As the issue has come to be understood since the 1960s, the problem was one of describing either the action of the social environment upon the form of the building, or conversely, of the action of the buildings upon society. The difficulty in giving a historical account of this issue is that while such ideas certainly existed, and indeed were crucial to modernism, they were but poorly articulated, and rarely, if ever, referred to as “functionalism” before the late 1920s. The historical question that we have to try and account for is the turning of “function” from a description of the action of a building’s own mechanical forces upon its form, into a description of the action of the social environment upon buildings, and of the action of buildings upon society. Crucial to this transformation is the introduction of the concept of “environment,” which, it will be noticed, we have not been able to avoid even in describing the phenomenon we are seeking to understand.

As a first step, we might ask how far modern “functionalism” differs from earlier, classical theories about the relationship of people to buildings. There is no doubt that the suitability of buildings to their uses was important in the classical theory of architecture—it is part of what is covered by the Vitruvian term “commodity.” This category underwent considerable refinement in eighteenth-century France, and the specific term developed to describe a satisfactory relationship between buildings and their occupants was “*convenance*.” J. F. Blondel writing in 1752 made *convenance* the first principle of architecture, explaining what he meant by it as follows: “For the spirit of *convenance* to reign in a plan, each room must be placed according to its use and to the nature of the building, and must have a form and a proportion relative to its purpose.”²⁵ In English *convenance* was usually translated as “fitness”: for example J. C. Loudon, a prolific English architectural writer and publisher of the 1830s, followed Blondel’s classification fairly closely, rendering *convenance* as “fitness for the end in view,” and *bienséance* as “expression of the end in view”:

An edifice may be useful, strong and durable, both in reality and in expression, without having any other beauties but those of use and truth; that is of fitness for

22. Greenough, *Form and Function*, 21.

23. Viollet-le-Duc, *Lectures on Architecture*, vol. 2, 277.

24. Sir George Gilbert Scott, *Remarks on Secular and Domestic Architecture: Present and Future* (London: John Murray, 1857), 212.

25. Jacques-François Blondel, *Architecture Francoise ou Recueil des Plans, Elévations, Coupes et Profils* (Paris: Charles-Antoine Jombert, 1752), vol. 1, 26.

the end in view, and of expression of the end in view; or, in familiar language, of being suitable to the use for which it was designed, and of appearing to be what it is.²⁶

The vagueness of both Blondel and Loudon as to what constitutes *convenance* or fitness is entirely characteristic of architectural theorists within the classical tradition who, while they considered a building's suitedness to its use as necessary, had nothing that could be called a theory about it. Moreover what Blondel, Loudon and every other writer in the classical tradition lacked was any account of the *relationship* between building and use—there was no suggestion that either one was in any way the outcome of the other; all that was required of the architect was to match the two together within an “appropriate character.” *Convenance* became an increasingly undynamic concept that gradually collapsed into “comfort.” (The significance of Horatio Greenough, it was suggested earlier, was his attempt to rescue *convenance*, or what he called “adaptation to use,” from stasis by linking it, through the German Romantic idea of “function,” to “character.”) However, what all these classical categories lacked—and it is this lack that distinguishes them from subsequent modernist notions of “function”—was any sense that the building fulfilled, in a mechanical sense, the requirements of the society within which it was produced. To argue this, it was necessary to have both a theory of society, and a theory of social causes and effects, and it is precisely the presence of such theories in modern functionalism that sets it apart from classical *convenance*.

The source of the theory of society that altered the understanding of the relation of buildings to use was, of course, biology. What biology gave to the study of society was, in addition to the notions of “function” and of “hierarchy,” the concept of *milieu*, or “environment.” What classical *convenance* lacked, and what modern functionalism contains, is this notion that human society exists through its interaction with the physical and social surroundings. Indeed, it cannot be stressed too strongly that without “environment” modern functionalism would not exist (and conversely, whenever one meets the words “environment,” or the other coefficient in the functionalist equation, “the user,” one can be sure that functionalism is not far away). However, what is peculiarly difficult to establish is when, where and how this paradigm entered the discourse of architecture: we can confirm its absence in the eighteenth century, and we can be sure of its presence in the second half of the twentieth century, but what happened in between? This territory was explored by Michel Foucault in *The Order of Things*, and again more recently by Paul Rabinow in *French Modern*, but we are still very far from understanding how this ubiquitous concept, “environment,” became established within modern thought. The best we can do is to summarize some of the better-known points on the way.

Milieu or environment was a concept basic to the understanding of changes in plants and animals from Aristotle's time, but where Aristotle and his successors saw the relationship between the organism and its surroundings as harmonious and balanced, a decisive change was made in the late eighteenth century by Lamarck, who saw the

26. John Claudius Loudon, *Encyclopaedia of Cottage, Farm, and Villa Architecture* (London: Longman, 1833), 1114.

relationship as basically unstable: an active organism seeks endlessly to attach itself to its *milieu*, which is indifferent to its survival, causing the organism to adapt. Adopted by social theorists such as Saint-Simon in the early nineteenth century, Lamarck's theory of the relationship of organisms to their environment became a highly popular model for the understanding of social process. It constitutes, for example, the theme of Honoré de Balzac's cycle of novels written in the 1830s and 1840s, *La Comédie humaine*; in the first, *Le Père Goriot* (1835), dedicated significantly to the Lamarckian naturalist Geoffroy Saint-Hilaire, the fortunes of the occupants of a Paris lodging house are described through their adaptation to their surroundings. But in the identification of its application to architecture and urbanism, we have to be more circumspect. While a writer like Viollet-le-Duc recognized the significance of social conditions (indeed, in Lecture X it was an important part of his argument in explaining why the same principles of construction, when applied in different times and places, produced different results) it was presented only in general terms and there was no reciprocal theory of the action of buildings upon society. Likewise, Leopold Eidlitz in 1881 insisted that "what should be impressed on the mind of the architect is that architectural forms, like all art organisms, and like the organisms of nature, are the result of environments"; but again, we have here no more than a one-way process.²⁷ On the other hand, by the end of the nineteenth century, in the English model villages built by reformist manufacturers for their employees, and in the early productions of the garden city movement, there was a clear implication of the converse process, of buildings acting upon inhabitants. And in Tony Garnier's imaginary *Cité Industrielle* of 1901–4, there was a definite assumption about the relationship between the layout and buildings of the city and the way of life of the residents, consistent with the thinking of the *Musée Social* group. Rabinow, who discusses this era of French social and spatial thinking in some detail, comments that the rise of the "social question" corresponds with the collapse of the liberal laissez-faire political economy, and the assumption by the state of responsibility for the welfare of its citizens; interest in *milieu*, and faith in "functionalism" (even if it is not known as such), were part of this process, and came to the fore in the social democratic regimes of Weimar Germany, and then of post-war western Europe.²⁸

Another, rather different line of argument traces the influence of the eighteenth-century French Physiocrats, and of Scottish Political Economy. The early nineteenth-century Utilitarians, coming out of these traditions, believed in the need for the adjustment of the parts of the society for the greater good of the whole. Buildings had a part in this by bounding particular parts of the world—Bentham's Panopticon is the most famous example, but the same principle underlay the building of not only prisons, but also other institutional buildings, schools, hospitals and asylums. It was particularly in factories that the ideal of the harmonious action of many social units to the good of all was most comprehensively applied. But we should be careful not to assume, as there has been a tendency to do recently, that these institutions manifested an incipient modern functionalism. When the French architect L. P. Baltard commented in 1829 of English prisons

27. Eidlitz, *The Nature and Function of Art*, 467.

28. Rabinow, P., *French Modern: Norms and Forms of the Social Environment* (Chicago: University of Chicago Press, 1989), 169.

that they “function like a machine subject to the action of a single motor,” he was referring to the harmony of routine within the prison, not to its action upon the inmates; and similarly it was “the idea of a vast automaton, composed of mechanical and intellectual organs acting in uninterrupted concert” that so excited Andrew Ure in 1835 about the cotton-mills of Manchester.²⁹ In so far as either prisons or factories affected the moral state of those within them, early nineteenth-century contemporaries attributed this to the regimen operated in them, not to the buildings themselves; contrary to the implication of some recent historical writing, it is very hard indeed to find any evidence in the first half of the nineteenth century of a belief that behaviour could be modified by the form of a building. But this distinction is admittedly a fine one, and by the late nineteenth century, when progressive manufacturers started to extend the principle of organization within the factory to the lives of their employees outside the factory, by building model housing for them, the distinction had become imperceptible. At Bournville, for example, Cadbury’s model village outside Birmingham, the expectation that the houses and their layout would of themselves bring about a change in the life and social development of the inhabitants was clear.

However, at no point did contemporaries refer to any of these developments as “functional,” nor is there a “theory” known by any other name that can be attached to these practices. The invention of a historical narrative descriptive of the development of a practice of functionalism through these and other nineteenth-century examples has been the work of historians in the last thirty years. Similarly, the creation of anything like a theory of “functionalism,” synthesized from the disparate range of ideas and historical examples that we have discussed, only emerged in the 1960s when architects and critics started to react against modernism; modernist architects whose approach one might be tempted to describe as “functionalist,” like Sir Leslie Martin, were in general extremely careful to distance themselves from any implication of determinist thinking.

One of the first and most famous works to take issue with orthodox modernism was Aldo Rossi’s highly influential book *The Architecture of the City*, first published in Italian in 1966. Rossi’s critique of “naïve functionalism” is an important part of his argument that the architecture of a city consists of generic types in which its social memory is preserved; European cities consist of buildings that have largely outlasted their original purposes without any loss of meaning, making function an irrelevance for their continued existence. “Naïve functionalist classifications . . . presuppose that all urban artifacts are created to serve particular functions in a static way and that their structure precisely coincides with the function they perform at a certain moment.”³⁰ He continues:

function alone is insufficient to explain the continuity of urban artifacts; if the origin of the typology of urban artifacts is simply function, this hardly accounts for the phenomenon of survival . . . In reality, we frequently continue to appreciate elements whose function has been lost over time; the value of these artifacts often resides solely in their form, which is integral to the general form of the city.³¹

29. Louis-Pierre Baltard, *Architectonographie des Prisons*, (Paris: Louis-Pierre Baltard, 1829), 18, 13.

30. Aldo Rossi, *The Architecture of the City*, trans. Diane Ghirardo and Joan Ockman (Cambridge: MIT Press, 1982), 55. First published in 1966.

31. *Ibid.*, 60.

In fact, though, Rossi's own conception of "functionalism" was vague: it gathers substance only in so far as it provided him with an antithesis for his notion of "type," and thus enabled him to argue for the primacy of form.

Writing not long after Rossi, the French philosophers Henri Lefebvre and Jean Baudrillard both display a similar impulse to define "functionalism," not so much from any interest in it for its own sake, but because it helped them to develop their arguments about modernity. For Lefebvre, in *The Production of Space*, "functionalism" was one of the features of "abstract space," that flattened, homogenized, asphyxiating form of space characteristic of modern capitalist societies.³² At one point, says Lefebvre, "The science of space should . . . be viewed as a *science of use*," but, he warns, "It would be inexact and reductionist to define use solely in terms of function, as functionalism recommends." "Functionalism," he continues, "stresses function to the point where, because each function has a specially assigned place within dominated space, the very possibility of multi-functionality is eliminated."³³ In place of the limitations imposed by a functional approach to use, Lefebvre was interested in the co-option of space (he gives the example of early Christianity's co-option of the Roman basilica), for it is through such processes that subjects themselves directly achieve the production of a lived, "social space." For Lefebvre (and he has this in common with Rossi), "functionalism" impoverishes because it fixes use.

To Baudrillard, concerned with the tendency of capitalism to displace commodities by their sign, "functionality is nothing other than a *system of interpretation*": it is a wholly arbitrary (though seemingly rational) attempt to fix the meaning of objects according to their use and so protect them against the effects of fashion.³⁴ "When one ponders it, there is something unreal and almost surreal in the fact of reducing an object to its function: and it suffices to push this principle of functionality to the limit to make its absurdity emerge."³⁵ Baudrillard saw functionalism and surrealism as necessary opposites; functionalism pretended that form signified use, while "surrealism plays upon the *distance* instituted by the functionalist calculus between the object and itself . . . Fusion of the skin of breasts and the folds of a dress, of toes and the leather of a shoe: surrealist imagery plays with this split by denying it."³⁶

These examples will suffice to show that not just in architecture, but in a variety of disciplines, to give functionalism specific attributes was a necessary part of developing a critique of modernism, and of modernity in general. Historical study took a corresponding course. The extensive investigation of the histories of particular building types, schools, hospitals, prisons, town halls etc., from the late 1960s may be seen as part of a general attempt to find some basis for the form–function paradigm. But there are two books in particular from this period, Peter Collins's *Changing Ideals in Modern Architecture* (1965) and Philip Steadman's *The Evolution of Designs* (1979), that set out to find a pedigree for functionalist thinking in architecture, and in particular to identify the origin of the notion that environment acts upon form: both Collins and Steadman located this in Lamarck's theory of evolution. Yet although it may be perfectly true that some twentieth-century notions of function do correspond to Lamarckian ideas, there is disconcertingly

32. Henri Lefebvre, *The Production of Space*, trans. D. Nicholson-Smith, (Oxford: Blackwell, 1991), 274. First published in 1974.

33. Ibid., 368–369.

34. Jean Baudrillard, *For a Critique of the Political Economy of the Sign*, trans. Charles Levin (St. Louis: Telos Press, 1981), 196–197. First published in 1972.

35. Ibid., 192–193.

36. Ibid., 193.

little evidence, as we have already seen, that any nineteenth-century architect or architectural theorist (with the possible exceptions of Horatio Greenough and James Fergusson) ever understood “function” to mean this, nor had any but the vaguest interest in architecture as part of the interaction between mankind and its environment. Though architectural writers were fond of the biological analogy in relation to theories of construction, there is only the most fragmentary evidence to suggest that they might have seen it as a means to develop an account of architecture as a social phenomenon. If Lamarck’s theory of organism-environment is indeed the origin of the modern notion of functionalism, it seems more likely to have reached architecture via sociology than from any direct analogy with biology.

While in the period from the 1960s to the 1980s we see the assembly from the scattered fragments of earlier thinking of a more or less coherent account of functionalism—largely so as to denigrate it—in the period since there have been various attempts to recuperate “function.” These have come from people acting with widely different intentions. On the one hand, we have the architect Bernard Tschumi, who, introducing an anthology of his articles from the 1970s and 1980s, explained their general theme as follows: “Opposing an over-rated notion of architectural form, they aim to reinstate the term *function* and, more particularly, to reinscribe the movement of bodies in space, together with the actions and events that take place within the social and political realm of architecture.”³⁷ That Tschumi chose, in 1996, to present his earlier views in this manner was a not-so-oblique lunge at Peter Eisenman, who, for the previous twenty years, had been broadcasting pro-form, anti-function views. In fact, an examination of Tschumi’s own earlier views shows him to have been a good deal more critical of “function” than the 1996 remarks suggest. While he had consistently been interested in the realization of event, activity, movement and conflict, earlier he had regarded “function” as inadequate to describe these. In 1983, he had written:

By going beyond the conventional definition of “function” the [Manhattan] Transcripts use their combined levels of investigation to address the notion of the program . . . To discuss the idea of program today by no means implies a return to notions of function versus form, to cause and effect relationships between program and type or some new version of utopian positivism. On the contrary, it opens a field of research where spaces are finally confronted with what happens in them.³⁸

37. Bernard Tschumi, *Manhattan Transcripts* (London: Academy Editions, 1981), 3–4.

38. Bernard Tschumi, “Illustrated Index: Themes from the Manhattan Manuscripts,” *AA Files*, 4 (1983): 71–72.

Clearly in the thirteen years between these two texts, the connotations of “function” had changed sufficiently for Tschumi to want to endorse its use.

Another apologist for “function” is Bill Hillier, who has provided by far the most lucid investigation of the “form–function paradigm” (the phrase is his) and its problems in *Space Is the Machine*. Hillier, though, is emphatic that it is not his purpose to dispose of “functionalism,” rather to understand what was wrong with the theory, in order to replace it

with a better one. The popular perception of the failure of modern architecture quite correctly interpreted this in terms of failures of “function.” “The proper inference from this,” writes Hillier:

would seem to be that the functionalist theories used by the designers were wrong, but that functional failure had confirmed the central importance of the form–function relation. There could, after all, be no functional failure if the relation between form and function were not powerful. The call should then follow for a new theory of function. Instead, there was an abandonment of functional theory in general, and an intellectual abandonment of the form–function problem at exactly the moment when functional failure had brought it dramatically to public attention. To understand this apparently perverse reaction—and also see that it was in a certain sense justified—we must understand exactly what it was that was rejected.³⁹

Then, like all previous adventurers on this ground, Hillier has first to create speculatively, out of the few available scraps of evidence, the “theory” that never was, but whose existence is necessary to know modernism. Some of the features of Hillier’s account of “form–function” theory I have already made use of in this entry, but it is worth summarizing his argument as a whole.

Hillier says that the error implicit in the form–function paradigm was the fallacious assumption that buildings can act mechanically upon the behaviour of individuals. “How can a material object like a building impinge directly on human behaviour?”⁴⁰ Such a claim violates common sense—and it is worth recalling that no utilitarian or early nineteenth-century political economist ever claimed this. Yet nonetheless, also at a common sense level, there is a relationship of some sort between what goes on in buildings and their form. Hillier resolves this conundrum by the hypothesis that “the relation between form and function at all levels of the built environment, from the dwelling to the city, passes through the variable of spatial configurations.”⁴¹ However, the modernist formulation of the paradigm, lacking any conception of spatial configuration, was—rightly—rejected as worthless.

The question of how such a fundamentally unsatisfactory theory of the relationship between people and buildings could ever have been given credence, Hillier attributes, as others had before, to the pervasiveness and persistence outside natural science of Lamarck’s theory of evolution. Whereas in biology, Lamarck’s theory of the interaction of organisms with their environments was quickly superseded by Darwin’s theory of the evolution of organisms through a process of random mutations, in architecture and urbanism Lamarckianism survived. The inertia of environmental determinism, remarkable enough given its inability either to explain or to predict anything, was, Hillier stresses, all the more remarkable in that it was founded upon a misleading and fallacious metaphor, in which the artificial environment is treated as if it were a natural environment.

39. Hillier, *Space is the Machine*, 376.

40. *Ibid.*, 379.

41. *Ibid.*, 378.

This blinds the enquirer to the most significant single fact about the built environment: that it is not simply a background to social behavior—it is itself a social behaviour. Prior to being experienced by subjects, it is already imbued with patterns which reflect its origin in the behaviours through which it is created.⁴²

It is, according to Hillier, the legacy of this particularly inapt metaphor in modern architecture that caused not only the form–function paradigm to be rejected, but temporarily at least caused the suspension of all interest in the relationship between buildings and their use in avant-garde architectural circles.

Looking back over the history of the concept “function,” it is clear that a practical need to talk about the relationship between buildings and the life within and around them has always existed. However, the manner of conceiving this relationship was one of the most distinctive differences between the classical tradition of architectural thought and the modernist one. If the means which modernism found to discuss this relationship was founded upon an inappropriate metaphor, which appears to be in the course of being discontinued, that does not mean that the need to discuss the relationship will also be terminated. The problem now appears to be to develop a satisfactory concept and appropriate terminology to replace “function,” or else to purge “function” of its biological and environmental determinist connotations.

⁴². Ibid., 388–389.