

Managing as Designing



EDITED BY RICHARD J. BOLAND JR.
AND FRED COLLOPY

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PEOPLE MUTHT BE AMUTHED

John Leslie King

People mutht be amuthed. They can't be alwayth a learning,
nor yet they can't be alwayth a working, they an't made for it.

*Mr. Sleary, in Charles Dickens's Hard Times,
Book 3, Chapter 8, 1834*

LOUIS HENRI SULLIVAN said in 1886 that form follows function in the realm of architectural design. Although Sullivan's aphorism was more conjecture than observation, it has evolved into an is/ought confusion. Form might very well follow function some of the time, but that's no reason to conclude that it should do so. Frank Lloyd Wright said that the notion of form following function was a misunderstanding: that form and function "should be one, joined in a spiritual union." Then again, Wright himself reportedly said, in response to complaints that his Unity Temple in Oak Park didn't work well as a church, that he didn't give a damn how it worked — he wanted to build a building that looked like that.¹

The question of whether form does or should follow function is at the heart of modern management thought. Unfortunately, the same confusion found in architectural design is found in management as well. The signature of that confusion is seen in the fixation on linking managerial function and organizational form, as in discussions of "cross-functional" management and "new" organizational forms. Untangling this fixation is a necessary step in understanding the relationship between managing and designing.

It sometimes seems that the things we know did not preexist our knowledge

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of them and that things older than our lives were always around. When rounding the bend of Wisconsin Highway 23 near Spring Green, and catching a first glimpse of Frank Lloyd Wright's Taliesin, the buildings seem completely normal and expected. It is easy to forget that they were a radical and jarring departure when they took form in 1911. The rightness of Wright's prairie style was an invention, but the rightness of it makes it seem as though it was always there. In a similar way, students of management are tempted to think that the phenomenon of management arose when the concept of management was formulated, and that organization design emerged when the idea of organization first dawned. Few people will admit to believing this, of course, but anyone who thinks that form follows function almost has to believe this. If form follows function, it cannot have preceded it. Our ancestors were obviously creating form long before function was named, and we can see from those forms that they were related to function. How do we account for this ability in our ancestors without presuming that they had sorted out their opinions on Sullivan's aphorism millennia before he did? We might assign them a kind of primitive but marvelous capacity, much like that of the cunning tiger: he hunts with fearful symmetry, but he does not *know* he is hunting. Only *we* know that. In this conceit, we are like Monsieur Jourdain in Moliere's *Le Bourgeois Gentilhomme*, delighted to discover that he had been speaking prose all his life and didn't even know it!

The challenge before us is to align our definitions of what we are with the reality of what we do. *Homo Faber*, we are told, is distinguished among the animals by our use of tools. That would be a useful distinction if not for all the other tool-using animals like ants and sea otters and lots of birds and primates. The important feature of humans is not *that* we use tools, but rather, what we are up to when we use them. Tools were found along with the ancient cave paintings at Lascaux and Chauvet-Pont-d'Arc, but the presence of the tools pales in comparison to the self-reflective evidence of the art. If the form of the cave art was to follow some function, then what, exactly, was that function? Put simply, to amuse.

The word *amuse* has a tortured history. Its contemporary meaning evokes diversion, distraction, entertainment, even deception. Its original meaning was quite different and might best be captured by the phrase, *to stare in amazement*. To be amused meant to catch a glimpse of something astonishing, something that reset one's expectations.² Amusement is a matter of separating figure from ground, of seeing something in stark relief against its context, in a manner that causes previously unseen connections to appear. The fact that the experience often evokes a delighted laugh is merely coincidental. Humans have evolved brains that reward us for learning new things, and the reward is pleasure.³ Pleasure is a consequence of learning, so we seek to learn.

Hence to the question of whether form follows function, and more importantly, whether we ought to think it should. The first architectural forms certainly preceded their functional applications. Humans sought out caves to live in, they did not dig them. When they began to improve on their cave dwellings, they had some notion of form that, when empirically tested, revealed whatever functional utility it might offer. From the perspective of the modern, it is difficult to understand the amusement that must have followed the recognition of the connection between adding a “fourth wall” to a cave and the resulting improvement in security, warmth, and psychological well-being. It seems plausible that early humans acted on a rational prediction when they surmised that adding the fourth wall would produce these benefits. But it seems at least equally likely that they first noticed that a cave is simply a hole on its side, and that by modifying where the “opening” was, the cave could be transformed. Although this abstraction might sound like a stretch for a primitive human, it is not nearly as big a stretch as the cave paintings primitive humans made of the animals they hunted (or admired or worshiped) with themselves looking on. The deep idea is not that one could remake the world to be more functionally useful. It was that one could remake the world *at all*. As experimentation with form evolved, all kinds of functional utility *followed*.

So, what was Sullivan up to when he declared that form follows function, and what should students of management take from that aphorism about design? At best, Sullivan was issuing an admonition to the architectural designer to remember that design has consequences when put into action, and that consequences can affect welfare. This notion is important and valuable. Taken to logical conclusions, it shows up in engineering, which, at its most creative, tinkers with form to determine how function follows. “Engineering science” makes use of earlier discovery to guide its tinkering toward particularly desirable functional consequences, but engineering practice remains largely a matter of learning by doing. In such work, form usually does not follow function, and the only reason for declaring that it does is to privilege the notion of function. This is a salutary endeavor in many ways. For one thing, it helps keep the wayward tinkerer’s attention focused on the question of whether anyone will want to buy what he or she has produced. But it can have pernicious consequences for those trying to understand the processes of design and management.

The most compelling danger in presuming that form follows function is the implicit assumption that “function” is received rather than constructed. The very idea of functionality is imposed by humans upon the world, not derived from it. There are, of course, underlying laws and consistencies and probabilities on which we base our expectations, and we use them all the time. But a function arises only in the context of explanations about those things; it

is not inherent in them. In the context of architectural design, confusion arises when one thinks of a building's "foundation" as a device to distribute the weight of the structure appropriately to the earth. Designers of foundations become preoccupied with weight distribution. When a different kind of form comes along, such as Buckminster Fuller's tension structures (e.g., the Dymaxion House and the geodesic dome), the primary purpose of the foundation must be different: to prevent the wind from blowing the structure away.⁴ In fact, Fuller's key contribution was in rethinking form in order to alleviate one of the traditional problems with earlier functional notions, namely that a building had to be heavy. The issue was not weight, it was strength, which could be accomplished by a sophisticated balance of tension and compression. Function followed form. After the fact, when the functional utility of the form became clear, it seemed obvious that the form had followed the function all along. The inventive character of changing form was subordinated to the rational expectation of achieving a functional objective.

This kind of problem shows up with glaring clarity in management. It goes without saying that humans have been doing management much longer than we have been teaching it. Yet, to read modern management texts, one would think management sprang full grown from the brow of Henri Fayol in 1916. Fayol's contribution was to begin the process of codifying the "functions" of the executive. Initially, this was little more than a "to do" list of things managers need to think about, but it had enormous impact on the emerging field of managerial education in the late 1930s when Luther Gulick and Lyndall Urwick synthesized POSDCORB (planning, organizing, staffing, directing, coordinating, reporting, budgeting), and Chester Bernard published his landmark book on the subject.⁵ This "functionalization" of management was accompanied by an equally influential functionalization of the idea of the organization itself. This was an extension of the old concept of division of labor and task specialization, which first found its academic voice in the work of Adam Smith and gained prominence through Max Weber's work on bureaucracy. Most important, organizational functionalism emerged from the practices of industrial organization as they evolved in the early part of the twentieth century, especially in Henry Ford's invention of production engineering and Alfred Sloan's creation of the multidivisional organization at General Motors.

The significance of the resulting change can be seen in the shift in key signifiers used by management research and education. The faculties of management schools in the late nineteenth century were classified by their substantive focus (e.g., banking, transportation, manufacturing). During this era, the concepts of "the organization" and "the firm" were handy signifiers to de-

note going concerns that were the *objects* of study by management scholars.⁶ By the 1930s management school faculties were beginning to be classified according to the organizational function in which they were most expert: finance, accounting and control, operations, and so on. The terms “organization” and “firm” had also been recast as abstract yet strangely real entities embodying clearly prescribed functions. Organization and firm had become the *subjects* of management study, and that study could be carried out in the absence of any actual organizations or firms. Ronald Coase nailed the thesis that organizational form follows organizational function to the cathedral door, and Oliver Williamson provided the reduced-form argument to “prove” it.⁷ Once the functions of the firm were understood, the forms could be modeled without the need of messy empiricism involving actual organizations and firms. Function was inherent; form was enslaved to follow. This trope imposes direct costs on students of management. For one thing, it causes old forms to masquerade as new, simply because they inevitably arise from the same old notions of function. But the more serious problem is the opportunity cost we pay in the loss of undiscovered functionality that would arise from truly new forms, if only we were willing to think them up and try them.

Curiously, many would argue that the field of architecture has gone the other way, headlong into the pursuit of form without attention to function. In this, Sullivan might have been prescient and prophetic in calling for attention to function when he did. In any case, Frank Lloyd Wright’s ideal of the “spiritual union” has proved to be elusive. Perhaps the most striking contemporary example of this is the transformation of Ludwig Mies van der Rohe’s masterpiece of form, the steel frame and glass curtain walls of New York’s Seagram Building, into the cheap but functional imitations that populate the dreary landscape of suburban office parks. Mies’s beautiful form led to a sea of ugly function, while the quest for the inspiring form continues.

Deriving managerial insight from the field of architectural design is not merely a matter of bridging the nomenclature of professional fields, or of finding ways for managers to mimic the work practices of designers. It lies in overcoming the fact that both architectural design and management have fallen into the same hole, although from opposite sides. Until they can crawl out of it together, it is doubtful that either can lead the other. The glimmer of hope is that, like our ancient ancestors, both camps will recognize that the hole they are in is really just a cave on its side. If they remove one wall, a suitably amusing vista might appear.

1. The origin of the idea that form follows function is generally attributed to Louis Henri Sullivan's line, "Form ever follows function," in his article "The Tall Office Building Artistically Considered," published in *Lippincott's Magazine* in March 1896. In fact, the same idea was articulated by artist and architect Horatio Greenough in 1852, and can be found in the chapter "Structure and Organization" in an anthology of his works edited by Harold Small and titled *Form and Function: Remarks on Art, Design, and Architecture*, published by the University of California Press in 1947. The quote on form by Wright is widely cited but the original report of his saying it is difficult to locate. His reported observation about the Unity Temple is even more difficult to locate.

2. The role of astonishment, or "wonder" as it might be expressed, played a crucial role in the evolution of western thought from the constrictions of medieval scholasticism to the breakthrough of the Enlightenment. Museums, which were the first scientific laboratories, arose from the sixteenth century *Wunderkammern*, or wonder cabinets, assembled by the earliest systematic naturalists (see Oliver Impey and Arthur MacGregor, *The Origins of Museums: The Cabinet of Curiosities in Sixteenth and Seventeenth Century Europe*, Oxford: Clarendon Press, 1985). Not all early architects of the Enlightenment were enthusiastic about this. Descartes in Article 73 of his *Passions of the Soul* (1649), said, "Astonishment is an excess of admiration which can never be but evil." However, Descartes' rationalistic sentiment was counterbalanced by his contemporary Francis Bacon's admonition to use libraries, zoos, wonder cabinets, and experimental apparatus to gain knowledge and "be left the only miracle and wonder of the world." (from *Gesta Grayorum*, 1594).

3. For a review of research evidence for this, see Ingrid Wickelgren, "Getting the Brain's Attention," *Science*, October 3, 1997: 35–37.

4. Fuller's exposition of this concept began in his article "Tensegrity," in *Portfolio and Art News Annual*, No. 4, 1961, and was elaborated in his books *Synergetics* (1975) and *Synergetics 2* (1979), both published in New York by Macmillan Publishing Co., Inc.

5. See Henri Fayol, *General and Industrial Management* (London: Pitman, 1916); Luther Gulick and Lyndall Urwick, eds., *Papers on the Science of Administration* (New York: Institute of Public Administration, 1937); Chester I. Barnard, *The Functions of the Executive* (Cambridge, MA: Harvard University Press, 1938).

6. A useful source for this discussion is Edward F. L. Brech, *Education, Training and Development for and In Management, 1852–1979*, volume 5 of *The Evolution of Modern Management: A History of the Development of Managerial Practice, Education, Training and Other Aspects in Britain from 1852–1979* (distributed for the Thoemmes Press by Chicago University Press, 2002).

7. Coase argued that organizations were created to provide consistent operating frames not available in the marketplace (see *The Firm, the Market, and the Law*, Chicago: University of Chicago Press, 1988). Williamson took this further and characterized organizations (hierarchies) as the result of market failures due to the inability to manage high transaction costs in routine operations (see *Markets and Hierarchies*, New York: Free Press, 1975).