

The Karol Adamecki University of Economics
in Katowice

Volume 4

2008

Journal of

**Economics &
Management**

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**ADAMIECKI'S METAPHORS
OF ORGANIZATION**

Introduction

There is a belief that using metaphors in science is attributed to postmodernist orientation. Despite of the difficulties to define postmodernism, it is worth reminding that the presence of metaphors in management sciences was as early as the beginning of this knowledge field, which is proved by the works of Karol Adamiecki, the Polish pioneer of scientific organization. He is commonly known as a great representative of the classic period in the development of management sciences, in which a paradigm of positivist learning dominated. There was a trust in an inductive acting and measurement as an essential element. How did reference to metaphors appear in such conditions? Yet, the classic period of management sciences did not provide this at all. This was impossible *ex definitione*. Adopting the following position may explain the fact: it is obvious that there is no place for metaphors in a research process itself, but it may be possible in passing the findings, promoting knowledge and inspiring to carry out further testing. For these reasons, some how justifying and propagating the new science, there was found a place for metaphors. Anyhow, these were Adamiecki's grounds for using metaphors. Considering the fact that metaphors are rather unknown fragments of his works, they should be reminded. However, at first let us summarize the knowledge on metaphors in science.

1. Metaphor and model in life and science

Metaphors have always used in literature rather than in science, however they have also marked their honorable place in the area of science. It should be noted that metaphors were not willingly acknowledged, though their inspiriting role or help to understand a new situation cannot be negated. First of all, a metaphor implies meaning and analogy – important issues neglected in a lot of orientations or research schools. If one asked about an accurate definition of a metaphor, the answer would be „[...] transmission of a name attributed to one thing for its content onto another thing or things due to similarity”¹. Being more precise, it is a kind of utterance „[...] in which the subject of utterance (sometimes called a metaphor subject) is characterized by means of a word or phrase (a metaphor carrier), that does not describe this thing in literal sense”². There are lots of examples: the ship of state, light of faith, torch of education, or phrases like „lion is a king of animals” or „a man is a wolf to another man”. Meaning is transmitted and analogies sought. Introducing a context to the said operation was quite appropriate. „A metaphor proposes an analogy between an ordinary

¹ *Mały Słownik Terminów i Pojęć Filozoficznych*. IW Pax, Warszawa 1983, p. 211.

² S. Blackburn: *Oxfordzki słownik filozoficzny*. KiW, Warszawa 2004, p. 234.

context of a word and the new context in which the word is used"³, but the author pays attention to transmitting only a part of connotation of a word or expression. We use the expression „love is like a fire”, but nobody will think of cooking dinner on the fire of love. Max Black, a great expert on metaphors in science, claimed that metaphoric use of a term includes highly selective transmission of associations related to a given word or phrase. A metaphor is like a filter or lens through which a new thing or phenomenon is captured. Some of the features are omitted whereas others highlighted. Since a metaphor facilitates to organize cognitive experience through putting stress on accents that have missed so far our attention⁴. Saying that „a man is a wolf to another man” inclines to consider only these human features that resemble a wolf. The situation of a man may be interpreted in categories known of wolf-like behavior. It is similar with well-known organization metaphors.

Before examining a phenomenon of metaphors in the works on scientific management, it is worth presenting certain properties for their use⁵. Firstly, a metaphor is not real in a literal senses. Interpreted in this way, it would become an absurd due to dissimilarity of contexts. Nobody takes scales when saying „I feel heavy on my heart” or grabs a cloth when „seethes with anger”. Similarly, any machine tool is not disassembled into pieces in the best known metaphor of organization as a machine. However, this is not just useful fiction, without reference to reality. A metaphor states that there are significant analogies between compared objects. Secondly, a metaphor is of open nature, which means that it is impossible to define how deep a comparison is. It cannot be paraphrased because it may hide the unknown number of possible analogies. This may be only settled by a recipient. A metaphor is supposed to constitute a suggestive incentive to find further similarities. And thirdly, as opposed to scientific models, metaphors may include emotional and evaluating elements, evoking certain feelings and attitudes. Metaphors are of dynamic character, enriching languages as well as they engage the recipient in the process of its co-creation. At the same time, influencing the language style and vividness, a metaphor does not limit to rhetoric and decorative functions, since it contains its own, enough identifiable, cognitive substance. A metaphor, to the same extent as on attitudes, has an impact on perception and interpretation of the world. Even more, as it may be read in a philosophic-artistic discourse, „[...] considered deeper, it turns out to be a gesture of existence, condition for something to come into existence, speech of being”⁶. Our life without metaphors would be unimaginable⁷.

³ I.G. Barbour: *Mity, modele, paradygmaty*. Znak, Kraków 1984, p. 19.

⁴ M. Black: *Models and Metaphors*. Cornell University Press, Ithaca 1962, from: I.G. Barbour: Op. cit., p. 20.

⁵ I.G. Barbour: Op. cit., pp. 20-22.

⁶ A. Falkiewicz: *Istnienie i metafora*. Wydawnictwo A, Wrocław 1996, p. 13.

⁷ An extensive study of creation, meaning and functionality of metaphors in a number of areas like a language, life, and art is presented by G. Lakoff, M. Johnson: *Metafory w naszym życiu*. PIW, Warszawa 1988.

Confronting metaphors with models one may conclude that they fulfil similar roles in scientific structures. They both are supposed to create attitudes, interpret experiences and order sensual data. The difference is that a metaphor appears only once in these functions whereas a model is used repeatedly⁸, and on a systematic basis. Yet, both a metaphor and model refer to reality, not only to human attitudes and feelings. It is possible to follow M. Black saying „[...] that models are metaphors developed in a systematic way”⁹, by casting a new view on a situation examined, attributing to it features of another, better understood situation. A metaphor may help notice something that could miss our attention in a given situation, change relative significance of certain details or see new dependences. The role of imagination is emphasized, both in science and humanities. It is even noted that theoretical explanation in science is „[...] describing something again in a metaphoric way”¹⁰. More stress is put on understanding because both metaphors and models’ function is better transmission of certain contents. A lot of scientific terms are of metaphoric origin; also an essential part of their meaning comes from an initial context. Like an electric current, that does not refer to an ammeter reading, but rather contains a hidden reference to a current of water. Pictorial expressions play a significant role both in development of science and spreading its social presence. An atom as a miniature of an orbital system of planets or genetic code of a double spiral of DNA particles may serve as further examples from the most developed scientific fields. Also metaphoric expressions related to human activity like „at the foot of the mountain” or „a skyscraper” lost their traits of initial analogy and became commonly used notions of transferred meaning. Both metaphors and models contribute to vivid accounting of events and considerable enriching the language. Why would that be the case of scientific organization?

2. Metaphors in management sciences

A lot of precious comments may be found in world-famous textbook by Mary J. Hatch. The author attributes honourable tradition and great significance to metaphors in construction of theories, both in sciences and humanities. In her opinion „[...] a metaphor enables to understand one experience through another since it offers identity of two things that would not normally regarded the same. Understanding one element of a metaphor, it is possible to learn something that results from this another thing. Thus, a metaphor encourages seeking similarities between an object

⁸ I.G. Barbour: Op. cit., p. 24.

⁹ Ibid., p. 58.

¹⁰ M.B. Hesse: *The Explanatory Functions of Metaphor*. In: *Logic, Methodology and Philosophy of Science*. Ed. Y. Bar-Hillel. North Holland Publishing Co., Amsterdam 1965, quotation from: I.G. Barbour: Op. cit., p. 59.

of interest and something better known, or at least known in another way”¹¹. It is assumed that there were four metaphoric references to organization in the history of scientific organization and management: a machine, organism, culture, and collage. They correspond with classic perspective, modernism, symbolism, and interpretation, as well as post-modernism, respectively¹². Mary Hatch admits that she was inspired by *Images of Organisation* by Gareth Morgan, in which a metaphor is used to the greatest extent as a tool to read and understand organization. Morgan uses a metaphor trying to understand one fragment of reality with another¹³. Such an attitude is characterized by one-sidedness. Bringing one interpretation to the forefront, other interpreting possibilities are likely to be pushed aside. That is why it is quite natural to read the life of organization through a number of metaphoric views. The author of *Images of Organisation* expressed it clearly, interpreting organization as a machine, organism, brain, culture, political system, psychological prison, flow, and transformation as well as an instrument of domination¹⁴. No doubt, he obtained in this way a broader and more open way of thinking and speaking about the world of scientific organization, finding also grounds for potential changes of their directions. The impressive monograph of G. Morgan was a subject of broad discussion. In Polish literature it was Leszek J. Krzyżanowski¹⁵ who examined its assumptions and appreciated significance, encouraging thinking with pictures emphasizing the value of environment. At the same time, using metaphors for better understanding and favorable presenting scientific organization „has always been” present in the works of management creators, however as late as in postmodernism metaphors became common as the ways to express reality.

3. Metaphors in Adamiecki's works

There are three metaphors used by Karol Adamiecki, the Polish co-creator of scientific organization and management, to encourage broader application of the new methods of improving production and management. The oldest one is a metaphor of a tap, the least known. It was formulated in order to evoke or enhance economic thinking among technicians holding managerial posts. The next metaphor refers to the analogy of a musician-composer and orchestra conductor as an organizer to schedule work and manager to execute it jointly. The last metaphor, the idea of organization as a living organism, has not been so far associated with Karol Adamiecki. Using source texts, let us try to reconstruct all the three metaphors in a very concise way.

¹¹ M.J. Hatch: *Teoria organizacji*. Wydawnictwo Naukowe PWN, Warszawa 2002, p. 66.

¹² *Ibid.*, pp. 67-69.

¹³ G. Morgan: *Obrazy organizacji*. Wydawnictwo Naukowe PWN, Warszawa 1999, p. 11.

¹⁴ *Ibid.*, passim.

¹⁵ See L.J. Krzyżanowski: *O podstawach kierowania organizacjami inaczej*. Wydawnictwo Naukowe PWN, Warszawa 1999, pp. 67-70.

3.1. Organization as a tap

The tap metaphor in scientific management is associated most with a classic period in managerial sciences. It refers to a device playing the role of a regulator. Namely, a tap more open or closed enables stronger or weaker flow of a liquid through a network it is installed on. Adamiecki put the costs flowing through the factory in the place of fluid circulated in the pipeline. These costs were compared to gold if they are transformed into a product. They are lost gold if they are wasted. It is worth having a look at the original: „[...] all organs of manufacturing and related costs may be perceived as a network of channels and tubes through which gold flows (that is money); in order to produce something it is necessary to start all these organs, which means open the taps in all tubes”¹⁶. Yet, one should know that these taps are of different natures: some of them are regulated, automatically according to production (these are channels filled with direct costs). There is no regulation in others and they are completely open all the time (these are fixed costs). Finally, there are the taps automatically regulated, but to lesser degree. When production stops, there is still quite a big clearance to let the gold drip (these are taps for mixed costs). There is an important practical message in this metaphor: the most possible effort should be made to let each of the taps pass as little gold as possible, to get each tap to have the least possible section and finally to have the most possible number of the sensitive taps, easy to regulate and close automatically according to production¹⁷. It is necessary to remember about it as early as at the stage of selecting production tools and devices calculating their economic characteristics according to the right of harmonious production. Also, „[...] it is essential to make sure that all the tubes are in good condition, work well and fabrication is as intense as possible with the least waste of time”¹⁸. This way Adamiecki justified the necessity of harmonious action, linking the production costs with time use. „Time is a scheme in which organization is incorporated”¹⁹, and a schedule an instrument does not allow to waste it. It is clearly visible that the metaphor of organization as a set of taps on production tubes was a prognosis of the theory of harmonization based on a principle of harmonious selection and harmony of action, which was fully presented by its creator at the Prague Congress in 1924. It is worth adding that Zbigniew Martyniak, fascinated by this „suggestive”²⁰ metaphor, regarded it to be forerunning in relation to the system

¹⁶ A. Adamiecki: *Metoda wykreślona organizowania pracy zbiorowej w walcowniach*. „Przegląd Techniczny” 1909, No. 17, p. 199.

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Ibid., p. 197.

²⁰ Z. Martyniak: *Prekursorzy nauki organizacji i zarządzania*. PWE, Warszawa 1989, p. 43. He many times presented his view on this matter in conversations with the undersigned.

model of industrial dynamics developed by Jay M. Forrester, where „reservoirs” and „taps”²¹ are basic terms.

3.2. Organizer as a conductor

The reference of a production organizer to a musician comes back from the same time period, but does not have the same suggestive power attributed to the tap metaphor. It contains two aspects, respectively to two tasks of the organization of the manufacturing plant: its structural preparation (whose musical counterpart is a record of musical composition) and organization execution that is managing its functioning (which is an analogy to a conductor who is responsible for concordance of a score with what is played by an orchestra). „In a harmonious simultaneousness of action of apparatuses there is a certain similarity to the exact simultaneousness that occurs in music. Here even the smallest tone has its own place, it can be sounded neither earlier not later in order not to make a dissonance. [...] The case is the same in each collective work either apparatuses or people, this simultaneousness must be preserved”²². Otherwise, there will be dissonances and one will not get the highest efficiency. The lines of work cannot run differently, but they have to follow certain principles, a schedule. „A chart of good simultaneous action and collective work is quite similar to the notes of mechanical devices used to play the piano, a pianola for example. Here also each line have a strictly defined place and cannot be freely relocated. [...] Harmony in collective work follows the same right as harmony in music”²³. Adamiecki suffered that there did not exist such a sensitive device like an ear to control harmony in the works executed. Yet, there is no obstacle to „[...] set the charts being the organization notes”²⁴ in the most purposeful and rationale way, since „[...] the role of a composer is the same as the role of an organizer of collective work: they both care about harmony, the musician means harmony of sounds whereas the organizer harmony of work”²⁵. Additionally, „[...] in music each sound must be played in its time, neither earlier nor later”²⁶. The same refers to action plans for individual manufacturing elements. The schedules created guarantee appropriate action. This is a task of the manager, who, like a conductor, is supposed to supervise work according to

²¹ Z. Martyniak: *Karol Adamiecki – prekursor współczesnych nauk o zarządzaniu*. „Przegląd Organizacji” 1995, No. 6, p. 30.

²² K. Adamiecki: Op. cit., No. 19, pp. 229-230.

²³ Ibid., p. 230. This metaphor origins from Adamiecki's skills since he was a virtuoso of pianola. See R. Karłowska: *Wspomnienia córki Profesora Karola Adamieckiego o jego życiu. Materiały pokonferencyjne z Jubileuszowej Sesji Naukowej X lat Oddziału Lubelskiego*. TNOiK, Lublin 1968, p. 43.

²⁴ K. Adamiecki: *Metoda wykreślona organizowania pracy zbiorowej...*, op. cit., 230.

²⁵ K. Adamiecki: *Harmonizacja jako jedna z głównych podstaw organizacji naukowej*. „Przegląd Techniczny” 1924, No. 52, p. 582.

²⁶ Ibid.

its arrangement in time, neither earlier nor later, in order not to make any dissonance in mutually related activities.

3.3. Organization as an organism

An organic point of reference as a model for organization is attributed mainly to the system attitude. Meanwhile, the metaphor of organization as a live organism functions clearly in the works of Adamiecki. Moreover – it was a great analysis of economic processes in an enterprise that made the creator of schedules use it. For Adamiecki the enterprise in the light of market conditions appeared as a set of economic flows: from one side there were streams of expenditure (costs) that had to be balanced with a stream of income from sales or other sources (loan), in order to function in a competitive environment. The graphic presentation of the processes of expenditure and income in each enterprise shows that the size of these streams and streamlets differs and highly depends on both management and external conditions. This is a managed circulation process that „[...] resembles a blood circulation system in a live organism. [...] All streams and streamlets keep pulsing, they are mutually related in a very subtle way. Once we start to influence one of them, this will affect the whole flow. [...] In one word we deal with an organism that involves complex economic processes supposed to be managed by a manager”²⁷. At the same time Adamiecki appreciates the complexity of matter. Comparing the circulatory flow (balance) of expenditure and income streams in the enterprise with other phenomenon, for example balance of energy while transforming heat into mechanical or electrical power or cycles of different technological processes, it is visible how a manufacturing process expressed in money is complex and poorly explored. „Today [in 1924 – A. Cz.], facing extremely complex economic phenomena, we are like a steam engine operator who runs it, but does not know all the mystery of transformations of the matter taking place inside”²⁸. No wonder that in the metaphoric comparison he referred to something more physically complex. Additionally, Adamiecki, the „classic”, notices: „[...] this whole manufacturing organism consists not only of machinery and plant but also people who some how constitute a collective nervous system that manages the whole organism and who have not only physical properties and interests, but also spiritual ones on a very extended scale”²⁹. He tried to make the manager of the enterprise realize what difficult task he had to face. One would like to say – the challenge is still current. Developed for many years postulate of harmony expressed

²⁷ K. Adamiecki: *Stanowisko inżyniera jako kierownika zakładów wytwórczych*. Naukowa Organizacja Pracy. I Zjazd Polski 1924, Komitet Wykonawczy Zrzeszeń Kół Naukowej Organizacji Pracy w Polsce, Warszawa 1925, p. 63.

²⁸ *Ibid.*, p. 64.

²⁹ *Ibid.*

the sense of this metaphor. „We do not appreciate the significance of harmony in the light of economy”³⁰ – he concluded in the Prague lecture. Yet, the right of least effort as the essential economic principle „[...] is followed by the whole nature, each living being, trying to reach the best result using the least power and means”³¹. This law should cover the whole human activity, but we are still far from that. „A glow-worm wastes 15 000 times less energy while generating its light than a man transforming today [1924] coal energy into electric light”³². Should nature and live organisms serve as models for human activity? For Adamiecki, the master of preciseness and accuracy, there was no alternative.

Conclusions

The time of classic and system development of management sciences is the same paradigm of postmodernism. Adamiecki was a child of modernism and contributed to its building and enhancing not by using metaphors, but rather with the whole of his works. Simultaneously with the reign of modernist narration in each area there started somewhere postmodernist lack of belief and critical attitude towards rationalization of the human world. In science it was the attitude of distrust towards the great stories of the modern times, in scientific management it was expressed by striving for fragmentation of the system whole, showing the myth of progress, deconstruction of the authority of reason and symptoms of all power and seeking niches for the injured so they could at least practice their reflexive autopoiesis³³. This trend is best reflected in the metaphor of organization as a collage. Besides, postmodernism prefers using metaphors to rational models and logic construction. This is one of its distinguishing marks, as proved by already mentioned fundamental work by Gareth Morgan. As it is impossible to set the start of postmodernism – in fact postmodernist or post-modern (a term developed by Z. Bauman) reality is rather another continuation – it is also not appropriate to attribute metaphors exclusively to postmodernist preferences, which is best proved by Adamiecki's metaphors. They played a useful role in promoting tested solutions that were not yet commonly accepted. They also served as inspiration for starting new directions of comparative research. However, metaphors were not identification marks of postmodernist narration of the age of steam and electricity, today a little bit despised.

The Polish version of the article was published in a quarterly „Modern Management” 2007, No. 2.

³⁰ K. Adamiecki: *Harmonizacja...*, op. cit., No. 53, p. 594.

³¹ K. Adamiecki: *Stanowisko inżyniera...*, op. cit., p. 48.

³² *Ibid.*, p. 49.

³³ See M.J. Hatch: *Op. cit.*, pp. 59-61.

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