

IMAGE AND COMMUNICATION – HISTORICAL PARADIGMS –

MARIA CORNELIA BÂRLIBA*

This paper emphasises the vocation of engineering in relation to political, cultural, religious forces in a given society. The engineer is envisaged to be in *a methodological dialogue* – as social valuation – with the Greek ancient philosophy, the Emperor of Rome, the French Catholic Church, the humanists of Florence's neo-platonic Academy, the American Congress, the Romanian contemporary philosophy. The approach of these historical series of images is symmetrical: philosophy projects its light thereon beginning with Plato and ending with Lucian Blaga. The author's conclusion points to philosophy conceiving the engineer in terms of creativity, valuation and partnership.

Communication as an influential process could be understood and interpreted through the dynamics of the relationship between *the self-image* (image about one's own personality) and its *communicative ability*, in various human contexts. According to analytical research, the first principle of life is not biological conservation, but the preservation of the self-image, as a consequence of the organisation of our experiences, perceptions, values and goals, reflected in a specific behaviour.

Usually, two kinds of “*mirrors*” are accepted:

- *Human mirrors*: either those persons who provided our identity during childhood, or those persons in whose existence we came to recognise, later on, various parameters of our concrete personality. On the level of communicative behaviour, the human mirrors are able to set up the potential image.
- *Imaginative mirrors*: those mirrors on which we try to project what we believe that other people think about us, based on our perceptions regarding our own personality. Such mirrors are responsible for the images in action.

Influential acts through communication require a deep understanding of the need for assessment by taking into account the external images. The self-image becomes a reflected image *versus* other partners in the communicative process.

The individual does not exist in an “*ivory tower*”, but in a system of several social, moral, cultural contacts and interrelations. Therefore, his image will always occur as a specific result of various perceptions and connotations provided by the natural and human environment. Sometimes, self-images coincide with external

* “Politehnica” University, Bucharest.

images; other times, the self-images enter in contradiction with the respective external images.

Such a complex and dynamic process will be further examined by us, focusing on various interpretations and assessments of engineering throughout the history of human creativity.

ANCIENT GREECE AND ROME

A first message dealing with the engineering profession could be identified in the “*citadel of philosophers*”, Athens. Here, the great thinker Plato pointed out in one of his famous *Dialogues*, “*Gorgias*”, that such an area of human activities was not endorsed and appreciated by the existing social environment but, on the contrary, was generally treated with disgrace and contempt both in terms of individual (*i.e.* engineer) and profession (*i.e.* engineering).

Through a brief but very relevant assessment, as embodied in the above-mentioned “*Dialogue*”, the philosophers, as highly respected representatives of spiritual life, indicate a discouraging and negative starting point for the engineer and his profession; such an attitude is mainly generated by the non-understanding of the genuine messages and meanings, transferred through the engineering activities.

At the same time, it should be pointed out that Plato’s “*Dialogue*” does not allow an effective communication between the two parties involved: the representative of spiritual life (*the philosopher*) and the representative of creativity on the level of material values (*the engineer*). The expected communication or dialogue is replaced by a monologue, elaborated only by the first representative.

For a long time, technique and its supporters were in a position of impossibility to establish and develop a useful dialogue with other dominant images, promoted by the ancient Greek society. Therefore, the engineer was not able to become a partner, he was only a passive receiver of those aforementioned negative images. Due to a generally accepted attitude on the level of the entire community, the “*technical man*” had no opportunity to introduce his genuine mission or to explain it in the light of the existing social order and the hierarchy of human values.

In the Ancient Greece of thinkers, there was a significant gap *at the level of communication capability*: on the one hand, philosophers were able to put forward, clearly and decisively, their perceptions and visions *vs.* “*machinery constructors*”; on the other hand, the engineering professionals were not in a position to explain their mission and thus try to influence the common external images.

In their capacity as analysts of life and of the world, in the name of the famous triad “*Truth-Goodness-Beauty*”, the Greeks left gradually behind them the level of practical activities which, according to their conviction, were devoted just to the slaves as inferior human beings.

At the same time, there was a realistic necessity to recognise the existence of technology and its specific place within social life. In this respect, the Greeks – remarkable and brilliant authors of the science of Logic – had the mission to explain their perceptions with regard to the status of engineering works.

The proposed assessment was very impressive and had surely, in that ancient period of time, an extremely highly persuasive effect:

“Technology represents a gift offered by Gods”.

In other words, mankind had received from the Divinity all those forms and expressions of material life, as a sign of supreme generosity. Under these circumstances, their noble mission should be limited to spiritual exercise, to the level of philosophy and thinking.

By introducing the divine factor in the argumentation process, the representatives of spiritual life succeeded in imposing and enforcing their vision on the specific role of the people directly involved in technical activities: since technology came from the Gods, the individuals’ contribution on earth was drastically diminished; there was a kind of work which could not be done by a *“free citizen”*, but only by slaves, through merely physical efforts.

In the light of this particular vision about engineering, the Greeks tried to identify similar discrepancies, in terms of hierarchy, in the world of Gods – Olympus. For instance, Hephaistos, divinity of fire, was presented as an inferior member of the holy community; even physically his profile was disgracious, in direct contrast with the goddess of beauty, Aphrodite. At the same time, the other Gods had a permanent reluctant attitude towards Hephaistos, particularly due to his sophisticated tools and machinery generating fear instead of esteem or appreciation.

One could identify the same image gap by reading the Homeric poems. The *“Trojan horse”* was a product of human genius, able to facilitate the opening of the fortress’ doors and thus to lead to the victory in a hard war. The legendary moment, besides its beauty and attractiveness as a story, emphasised certain significant lessons:

- the victory in the Trojan war was reached not due to a specific weapon, but due to *an idea*;
- in other words, an idea had become *a weapon sui-generis*; the *“Trojan horse”* seemed to be a normal and quite a peaceful gift, but the original idea behind it had a tremendous decisive effect;
- such a *“weapon”* was not included, *per se*, in the history of technology and the respective authors (as creators of the material tools) were ignored by people;
- on the other hand, the idea of the *“Trojan horse”* has become a symbol for the general theory of disputes, when genius could be much stronger than force itself.

Referring to the Roman Empire, there are several factual arguments in favour of a different attitude towards technology and engineering. On the basis of an

alliance gradually built through the communication between *the political power/authority* and *technology*, a positive common image on engineering was promoted within and by the Roman society.

An engineer was a person who, to a large extent, participated, through his works and designs, in the architectural prestige of Rome and the adjacent provinces. As is well known, Ancient Rome had a tremendous infrastructure, comprising bridges and roads, civilian buildings, temples and monuments; such material values represented a clear symbol of power and authority.

It is obvious that the Roman buildings could not be made without a substantial contribution of specific jobs on the level of technology. An engineer-architect was a kind of “*institution*” in the Eternal City; famous names like Apolodor from Damascus or Vitruvius became quite familiar for the universal history of architecture.

Let us recall Hadrian, *the emperor-architect* who came into power after *an emperor-general*, Trajan, and had the greatest imperial residence of all times, *Villa Hadriana*. During his reign, the Roman empire had its largest area; inspired by the architectural beauties in various parts of his empire, Hadrian was able to operate a “*transfer of beauty*”, by re-building similar constructions at *Villa Hadriana*, the genuine heart of the empire.

Another argument in favor of the important role played by the engineer-constructor during Roman history is to be found in Vitruvius’ “*Treaty of Architecture*”; the training of architects was conceived in the light of an encyclopaedical vision: such specialists should be competent in geometry, astronomy and astrology, interested in philosophical theories, law or music. The concept of architect covered both the material and the spiritual spheres of values, implying a broad background and solid knowledge.

In conclusion, the engineer-constructor’s image, as promoted by Ancient Rome, seemed to be favourable and stimulating for such a profession. The emperor himself understood its meanings and practical advantages and consequently fully supported and encouraged those people who made an option for learning architecture and engineering abilities.

The communication process was therefore governed by a rewarding power on behalf of the empire’s administration.

MIDDLE AGES

In the next historical era, there are interesting interpretative elements regarding the status of the engineer-constructor, particularly in the French catholic society.

Cathedrals were an obvious expression of the belief in God, an “*alter ego*” of this religious attitude on earth. The constructors and architects became part and

parcel of this exercise having as a supreme finality the belief in God, the implementation of God's commands. For this reason, the builders of cathedrals and churches were encouraged by the authorities in their noble endeavour.

As *partners* in the action of promoting God's power on earth, the engineers represented a peculiar social and professional segment of population, enjoying several privileges and priorities due to their specific relationship with the Divinity. Under the mentioned conditions, the engineering activity was done on behalf of God and to the service of God.

In our view, the communication between the religious authority (the Church) and the engineers-constructors was carried out under the auspices of *gratitude*. The evidence of this modality of communicative interaction was done, *inter alia*, by the following basic aspects:

- the name of the given constructor was put on the walls of the cathedral as a *memento* for the future generations. Anonymity for this category of professionals was out of any question or doubt.

For instance, at the Notre-Dame Cathedral in Paris, there is an inscription containing the name of the architect Jean de Chelles, about 8 m in size: "Master Jean de Chelles who started this construction ... in February 1258".

- *the metaphor of the "labyrinth"*: within the Gothic cathedral, located in the center of the town, the itinerary of a labyrinth was engraved on stone or on marble; its meaning was, of course, a symbolical one – suggesting the pilgrimage to *the Holy Land*.

In the mentality of the believers belonging to Christianity, there was a strict and precise correlation between this figurative itinerary and the real purificatory trip to Jerusalem. In terms of finality, the pilgrimage of a symbolical nature was similar to the effective one; of course, Church's agreement had to be decisive (by indulgences, non-good deeds were excepted from punishment). It is to be recalled that in the Roman Catholic Church, remission of the temporal punishment still due to sin after sacramental absolution was very frequent.

The individual believer who entered the cathedral for a symbolical pilgrimage through the labyrinth was therefore in a position to imagine a spiritual trip to the holy sites of Jesus Christ; he had to meet either *the Holy Land* as such or, at least, to use an imaginary correspondent, within God's spiritual house.

But the surprise for the interpreter of this medieval tradition is particularly intensive: just in the middle of the labyrinth there was a medallion in stone, marble or metal containing an inscription: probably the names of Jesus, Virgin Mary or high prelates?; not at all, just the names of the ... engineers-architects who built the respective cathedral.

As was rhetorically asked by Jean Gimpel in his book “*Industrial Revolution in the Middle Ages*”, is there a better sign of homage for such constructors of a divine building?

As a matter of fact, in the framework of those activities having deep religious connotations, holiness becomes collaboration, through a *transfer of image*: the constructor is no longer just a human being, but an expression of a certain “*compromise*” with the divinity (having a higher degree of existence).

The *transfer of image* is, at the same time, a *transfer of authority*. In the Middle Ages, the grandeur of the Church is directly related to the functional existence of those great constructions done by certain people who thus became co-participants to the promotion of a series of essential values and criteria for the existing social order.

It is obvious that, through their captivating work, the constructors added a certain specific contribution to the religious belief. By a social and institutional *feedback*, this fact had a significant influence on their individual personality.

The engineer-constructor was engaged in a noble spiritual connection with the divinity, a process dominated by the following parameters:

a) *the transfer of image*

- from the religious symbolical image to the human being as a symbol of religious belief;

b) *the transfer of authority*

- from the absolute unlimited and unconditional role of the Church to the “*compromise*” with the man-constructor;

c) *gratitude*

- the religious influence on those who created buildings of high quality and aesthetic value;

d) *social influence*

- the influence of the engineering profession on civilian and religious authorities.

The last parameter was reflected, *inter alia*, in two basic moments:

- the privilege provided for the engineer-constructor to be buried, if so he wished, together with his wife, in the cathedral constructed by him, similar to the kings and high prelates and other religious representatives;
- the granting of the title “*doctor lathomorum*” (doctor in stones); let us recall the epitaph on Pierre de Montreuil’s grave, indicating the social influence of the architect’s image: “Hereby Pierre de Montreuil rests..., the man who was, during his life, doctor in stone’s sciences and who, after death, was sent by God to the sky”.

THE RENAISSANCE

Well known and recognized for the anthropological character of its vision as a whole, the Renaissance created a series of great personalities both in science and culture. Leonardo Da Vinci is an outstanding model for the “*universal man*” and the “*universal genius*”: specialist in architecture, mechanical sciences, hydrotechnics, optics, cosmology, anatomy, botany, etc.

Stricto sensu, Da Vinci was an artist-engineer. But such an association was considered to be very strange by the “*humanists*” who exalted the role of philosophy and ancient studies. Therefore, the message delivered by Da Vinci in his double posture was not received in an adequate manner by his co-nationals, during a long period of time. In Florence, the citadel of arts, Leonardo, the universal man, had to stay under the coercive action of the philosophical neo-platonic circle headed by Lorenzo the Magnificent. Treated merely as a technician, he was in fact rejected by that intellectual elite who underestimated his noble mission.

Each of the two elements engaged in the respective contradiction based its attitude on the conviction of “*social influence*”:

- the objections of the “*humanists*” envisaged the fact that Da Vinci had no background in literature and classical philosophy and that his knowledge was limited just to the narrow horizon of an engineer (in a pejorative sense);
- Da Vinci considered himself to be a genuine creator, whose posture was more meaningful than any passive interpreter of the works done by other; therefore, in his vision, both the artist and the engineer acted on behalf of the same ideal of creativity – a noble mission, which had nothing to do with the ignorance of the Latin language or of the Greek philosophy.

But, as a matter of fact, a strong *communicative barrier* was established between Da Vinci and his contemporary society. Finally, due to *the conflict of images*, he was obliged to leave Florence and go in exile to France. He lived in a castle on the Loire Valley, after leaving to the Renaissance’s Italy three paintings: “*La Gioconda*”, a self-portrait and a religious work (St. Anne). As is known, Da Vinci died in a lack of communication and understanding with his contemporary co-nationals.

The discrepancy between *the external image* (of the neo-platonic philosophers) and *the self-image* was, for instance, studied by psychoanalytical researchers; S. Freud tried to identify in Da Vinci’s paintings signals and relevant expressions of his serious and traumatising frustration.

The image of the engineer Da Vinci was a “*sad shadow*” on his painting activity as a whole. Particularly due to the impossibility of associating the two worlds of values – the material and the spiritual ones – the artist-engineer was

forced to find another geographical space having a more flexible attitude towards the combined image.

Nowadays, in the French castle on the Loire Valley, there is a museum devoted to the great Leonardo: on the first floor, the artist is presented through his impressive master's work – paintings, studies, sketches, etc.; on the ground floor, prototypes of several machines and tools, as imagined and designed by Da Vinci, are displayed. Therefore, over the centuries, the intellectual arrogance of the “*humanists*” was overcome and a correct image on the “*universal man*” was restored, on behalf of a welcomed historical act of reassessment.

MODERN TIMES

We offer the case of Samuel Morse, an engineer, and inventor of a special alphabet and of the electromagnetic device for telegraphy in 1840. One could see certain similarities, but also some differences in comparison with the Leonardo Da Vinci case.

Morse tried his social chance as a painter, the subject of his artistic work being the House of Representatives in Washington; then he wanted to sell his painting for 1,000 USD, but the Congress' Administration did not accept the offer. After an unexpected destructive fire in the said American institution, the attitude towards the painter Morse was radically changed: his work representing the House had an important value, mainly in terms of documentation (as a concrete proof and indicator for reconstruction works on various parts and assets of the building, including the chandelier).

Today, when visitors come to the historical House in Washington (which is no longer a functional area, but just a museum), they have the pleasant surprise to see Morse's painting in the hall, which had served as source of inspiration.

Resuming the historical events from the 19th century, the following relevant moments could be emphasised:

- a) at the very beginning, the painter Morse was aware of his talent as an artist; but his own image entered into contradiction with the external image (the vision and perception of others);
- b) due to some unpredictable events this image gap was re-established (the respective painting was accepted, as it seemed to be useful).

Twenty years after this “*artistic incident*”, in 1840, Morse as an engineer and technical inventor, presented to the American Congress his invention that permitted the first transmission of a message, by telegraph, to Baltimore. This remarkable means of communication – officially, scientifically and technically recognised and endorsed – was born, as a mind's exercise, just at the headquarters of the

administrative and political authority. Therefore, Morse was in a position to communicate; as an inventor, he became victorious.

This is the particular moment when two images – “*Morse about Morse*” and “*others about Morse*” – fully coincide.

For the respective technical invention – a genuine revolution in the communication process – Morse received 20,000 dollars; after one century (1940), his stone profile was inaugurated in front of the Senate Hall.

The pragmatic approach of the American society is deeply illustrated by a double-truck situation:

- Morse, searching for an image/prestige, agreed to make a transition from painting to engineering, being aware of his talent in both areas; the social (common) image confirmed, above all, the original results of the inventor-engineer;
- The US Congress, according to its own criteria of assessment, accepted the technical work done by Morse and changed its preliminary attitude (rejection of a painter’s talent).

But the two *creative dimensions* of Morse’s image – technology and arts – did not generate disadvantages, as had been the case of Da Vinci. The social acceptance, the communicative capability of his engineering message had final positive effects. Despite of the fact that he was not in a position to produce the expected consequences on the artistic level with a view to influence the common perception about him, through his painting activities, Morse became a universal creator. This was, over the years, his “revenge”.

CONTEMPORARY TIMES

For this period, our option in terms of approach and assessment goes in line with the philosophical perspective on engineering. Two basic elements could be identified in the works of the Romanian philosopher and poet Lucian Blaga:

- technique represents the fantasy of reality;
- the philosophical profile of an engineer: the man of genius who discovered the wheel, taking the sun as a model.

Therefore, in Blaga’s vision, the engineer is not merely a constructor of engines and tools, who should be blamed (as Plato stated, in the ancient times). The “*great engineer*” created “*the wheel*”, the idea, the concept of wheel; in other words, he created an abstract notion which was later on reflected in a diversity of copies having various technical functions. *De facto*, the “*wheel*” represented the fundamental modular element of technology, an essential prerequisite for the whole evolution of human activities.

The sun *per se* offered mankind the model of an abstract concept, because of its perfect form and its permanent movement (virtually) in the Universe. In his turn, *the human being created a new model*, the living heart of technique.

The engineer is a great creator, with a fresh and imaginative mind, who is able to understand even the coded messages of the Universe. The engineer was successful in his exercise, since the essentiality was “stolen” from the sun, by imagination and ingenuity. For such high abilities, the engineering profession should be deeply appreciated.

Image and communication represent, in our view, *an axiological cycle*. This cycle situated on the level of acceptance/non-acceptance of the engineer’s image and performance should not be identified with the cycle of concrete engineering activities, whose relevance and usefulness for social life are, of course, beyond doubt.

Our presentation has tried to emphasise the vocation of engineering in relation to political, cultural, religious forces in a given society throughout the history. The engineer was in *a methodological dialogue* – as social valuation – with:

- the Greek ancient philosophy (Plato);
- the Emperor of Rome;
- the French Catholic Church;
- the humanists of Florence’s neo-platonic Academy;
- the American Congress;
- the Romanian contemporary philosophy (L. Blaga).

The envisaged historical series of images and perceptions were approached as *a symmetry*: philosophy marked both the beginning and the end; finally, philosophy has conceived the engineer in terms of creativity, valuation and partnership. Through a certain “*revenge*”, this professional has been accepted as *the Great Engineer*.

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