The Influence of Secularism from Greek Mythology on Teaching in Engineering Culture

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Abstract: Greek mythology is the crystallization of human wisdom and valuable cultural heritage of western civilization, in which the anthropomorphized god reveals the humanistic tendency in secularism of the ancient Greeks. Engineering is the product of human civilization, which develops in the objective and realistic schools of thought, and the engineering culture reflects the social ideology of a certain historical period. The Greek personified gods were restored to the world in the engineering culture. Therefore, the study of the relationship between Greek mythology and engineering culture has transcended narrow professional boundaries and has far-reaching historical value and modern significance on engineering education and teaching.

1 The introduction

Throughout history, ancient Greece, with its wisdom and strength, has undertaken great responsibilities and contributions in the process of western civilization. No nation can match Greek contribution to human freedom, and its noble pursuit and belief are unsurpassed. Myth has become an integral part of western civilization in human achievements. Joseph Campbell defined myth as the four basic functions, which are magical function—the experience of the amazing universe, universal function—the explanation of the shape of the universe, sociological function—supporting and validating a particular social order; pedagogical function—the explanation on how human beings can survive in any situation. [1]

As the most complete ancient myth in the world mythological system, Greek mythology is regarded as a valuable cultural heritage in the universe, the crystallization of human wisdom and an important part of Greek civilization. In Greek mythology, the worship of god equals the worship of man himself. This kind of secular humanism is closely related to the life, culture and education of the Greeks, thus it had a significant and profound influence on the material and spiritual world of western civilization.

2 Greek mythology and secularism

(1) Anthropomorphism

The history of secularism in western civilization records the germination of free thought during the periods of ancient Greece, which is reflected in Greek mythology. Its religious influence had lasted for 800 years, and then was replaced by Christianity for a thousand years.

To a large extent, the gods of the ancient Greeks are anthropomorphic manifestations of natural forces. Their worship of gods is actually worship of nature. Their heroic legends belong to the explanations of history by ancient Greeks, or their vague memories and deification of their ancient ancestors. The worship of ancient heroes is actually worship of ancestor. The ancient Greek mythology is characterized by one thing, known as anthropomorphism, which means the representation of a god as having human form or traits. The gods of ancient Greece were highly personified, not only having the most human images and characters, but also including all the emotions and desires. Its divinity is both superior to and the same as human nature. The superiority lies in the infinite vitality of god, the supreme wisdom, and the boundless power within the scope of
duty. As the sameness with human nature, god has human feelings and even demerits. Gods struggle for power, fall in love with human beings, bear and raise children in a secular world as well. Even, gods can make mistakes. [2]

(2) Secular humanistic ideology

From the very beginning, the characteristics of the anthropomorphism presented the secular tendency of the ancient Greeks, which is the unique trait of Greek mythology compared with other religious myths in the world.

Ancient Greek religion is a kind of polytheism, although it is the religion of the whole Greek people, but it still possesses the original characteristics of folk belief. Because of this primitiveness, ancient Greek religion is demystified and people-oriented. [2] The humanism of Greek mythology emphasizes the value and dignity of people, as well as the happiness from secular life. In ancient Greek mythology, human beings never surrender to gods. As Thucydides, a famous historian, once declared: “human being is the first and most important thing. Everything else is the fruit of man’s labor.” [3]

Mythology is the original explanation of nature and history by ancient Greeks, which is a non-idealized, non-transcendental primitive belief with secularism. God is highly personified, mainly characterized as: no classical doctrine, no organization of church or clergy, but emphasis on sacrifice and ritual. [4] Compared with other mythologies, this makes the ancient Greek mythology less moralistic. Consequently, ancient Greek mythology has more humanistic ideology of being naive, lively and romantic from human childhood, and more fully reflects the rich imagination of ancient humans for the creation of heaven and earth and the promotion of human life. [2]

As Burns put it, “the Greek gods exist for the benefits of human being, so praise for god is equal to praise for man himself.” [5]

3 Greek mythology and engineering culture

The rise of secularism mainly comes from the vulgarization of divinity. Man is the creator and master of life, therefore man creates gods in his own images. Belief expresses human being’s thoughts and emotions, and myth makes personality and desires sacred. Thus, the combination of recognition and respect for thought, emotion, personality and desires in life is the key to the transformation of divinity to vulgarity.

(1) Ancient Greek engineering, a tool to restore mythology to secularity

The subject of engineering activities is human, and the purpose of engineering is human, which reflects that engineering inherently contains human values. In this sense, ancient Greek engineering reflects a people-oriented secularism.

The ancient Greeks never ceased their spirit of “why”, and created western civilization through coastal city-states and maritime commerce. [6] Geography had a profound influence on the development of ancient Greece. The geographical range of ancient Greece, in addition to the present Greek peninsula, included the region of the entire Aegean Sea and the northern regions of Macedonia and Thrace, Apennines and Asia Minor. The steep hills of the Greek peninsula formed small geographically isolated units that prevented communication between the continents. The coastline of the Greek peninsula was tortuous, and almost all the city-states were within the distance of 40 kilometers to the sea. Relying on the sea and sea routes became the way for the development of ancient Greece, so Greece developed into the first great harbor builder.

In the process of city-state development, faced with the problems of regional planning and public water supply facilities, the Greeks initiated the excavation of tunnels, built public water supply facilities, seaports, drainage projects and urban regional planning, which demonstrated the advanced and outstanding technical level and cognitive ability of the Greeks. In the true sense, they mastered the technology of arch architecture and formed the unique architectural methods and procedures, which were used for centuries by later generations. All this became necessary for Greece to build strong, dynamic engineering projects. [7]

The Hellenistic city-states tended to demonstrate their pursuit of political status and their
economic, cultural and technological capabilities with unrivaled engineering works. This is the royal power to deify their own governing. The engineering shows the ancient Greek civilization in politics, economy, culture, technology, spiritual belief and other levels, and it restored the religious belief in secularism to the reality. [4]

(2) Influence on teaching in engineering culture

Engineering is a growing and developing industry that plays an important role in the rise of western life and the history of human civilization. Since all engineering activities are carried out in the three-dimensional field of “nature, man and society”, “intersection” between engineering activities and culture is inevitable. This “intersection” is engineering culture, the internal power that determines the future prospect of engineering, and has gradually penetrated into every field of life [8].

As “engineering has the attributes of being ‘social’ and ‘material’, it becomes the synthesis of ‘fact orientation’ and ‘value orientation’. It is also regarded as the synthesis involving natural science, social science and humanities, as well as the material bridge spanning ‘two cultures’”. This is the value basis of the interaction between engineering and social factors, and this is the way to communicate the gap between scientific and technological culture and human culture. [9]

4 Conclusion

As Walter Beckett pointed out, “the Greek gods were human beings, not any abstract concepts.”[1] The shift from the divine to the secular means the advance of history. Greek civilization was founded on the ideal of liberalism, optimism, secularism, rationalism. On the basis of aesthetics, it praised people and spirit, and highly valued individual dignity and value. The ancient Greeks hailed humanity as the most important creation in the universe and refused to give in to gods’ will. The Greek outlook on the world is marked by secularism and rationalism. It worships the spirit of free exploration and worships knowledge more than faith.[10]

The progress of Greek engineering culture reflects the typical characteristic of “serving the needs of human beings”. As one of the oldest industries with a long history as civilization, engineering has restored the anthropomorphic god to the secular world. Engineering culture reflects the social ideology of a certain historical period. As the economist professor Seligman puts it, “No matter how civilized human beings become, material happiness is consistently the foundation, on which most lives are built.” Because of this, the pursuit and yearning for a better life originated in ancient Greece.

Under the influence of today's cross-culture and critical thinking, education concept and teaching strategy of engineering culture changed dramatically. Consequently, in this era, it is of vital importance for the education and teaching of engineering culture in China to attach full attention to this characteristic, striving for rational utilization of native culture and foreign culture, breaking through the boundaries of geography to reach the international level.

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