

TOK Essay

**Essay Title 3: Should key events in the historical development of areas of knowledge always be judged by the standards of their time?**

It seems that humanity's judgment of the work of scientists and artists changes over time, as many did not receive acclaims until after they passed away. But why is that? It is natural for work to be judged by the standards of the author's time, but we would only know that the work is significant to the historical development of an area of knowledge after it has been tested over time, proving to serve as a growth factor and making it a key event. This raises an important question: by what standard should key events be judged? Key events are generally of two types: one is immediately appreciated but less appreciated later while the other is only then appreciated by the next generations. Since both involve paradigm shifts, or a change in perception over time, a knowledge question can be deduced: What role do paradigm shifts play in the way knowledge in the arts and natural sciences is valued over time? Thus, "paradigm shifts" will be treated as synonymous with "key events." This essay argues that they should be judged by both the standards of their time and our time, although a standard may be more favorable than another at times. By considering both types, I will analyze how the perceptions of key events in visual arts and physical sciences change over time.

Throughout the history of physical sciences, many theories proved to be wrong; nonetheless, these mistakes are key events that helped develop

the field, as they served as paradigm shifts that inspired other physicists to come up with better theories. This may imply that a theory should be judged by the standards of scientists' time due to the idea that theories can build upon other theories, which will move experts closer to the truth. One example is the Plum Pudding model created by J.J. Thomson (1856-1940) in the late 19th century. His discovery of electrons led to the creation of his model, which was due to his use of reasoning and his imagination. When the concept was presented to the world, it received wide acclaims. However, subsequent experiments disproved the model, and Rutherford Model replaced the plum pudding model in 1911, which was interpreted from the Geiger-Marsden experiments conducted in 1909. Throughout the whole process, reasoning was the primary drive, followed by sense perception. Although the Plum Pudding model contained huge misconceptions, it is admittedly a crucial step in the development of the Standard Model of particle physics (Williams, "What Is the Plum Pudding Model?"). In this case, because the plum pudding model was judged based on the standards of Thomson's time, it survived and became widely known, inspiring others. Nonetheless, we should be aware that there are theories that may lead scientists in an entirely wrong direction and hinder the search for truth. Therefore, scientists should think critically about which theories to trust and develop upon.

On the other hand, there is knowledge that is rejected based on the standards of the creator's time but is eventually proven to be true by later standards. This could mean that the latest standards, or the standards of our time, are best for judgment, as we build our standards upon past experiences. This idea can be demonstrated through the heliocentric model of the universe

proposed by Nicolaus Copernicus (1473-1543) in 1532. Many religious scholars tried to reject his model, but defenders like Galileo Galilei (1564-1642) successfully advocated the model (Williams, "What Is the Heliocentric Model of the Universe?"). Heliocentrism was widely rejected due to religion and the faith of people of the time that limited their visions. The idea was only accepted by the society after a while, despite the scientist's solid evidence. By our standards, such a model will most likely be approved based on our scientific methods. As time goes on, humans may tend to become more objective when facing a new idea because of the standards of contemporary science and the emergence of the scientific method and will less likely reject an idea solely due to a biased perspective. Thus, we can say that it is better for people of our time to judge the value of an idea. However, as there were plenty of scientists who worked on the heliocentric models, we need a clearer definition of what "standards of their time" mean. If we assume that it means standards of the creator's living time, then all subsequent involvements are arguably judged by standards of the later date, which were once standards of "our" time. And even in that case, the judgments performed later by people of another occasion may be wrong. Therefore, we cannot be sure that our current standards are always suitable for judging.

Artworks in the past may not fit the artistic standards of our time due to the difference in technical skills and aesthetics; thus we can argue that artworks should only be judged by the artist's time. Even if people of our era do not consider a piece beautiful, people at the time might have perceived it as beautiful. The artifact, "Venus of Willendorf," is around 22,000 years old. Along with other Venus art, this piece demonstrates an obese female, and the

artist emphasized her breasts and pubic region. Art historians suggest that these pieces are strongly related to fertility and people of the time valued such aspects of a female; others suggest that it could have been a cultural or aesthetic preference of the time (Zygmunt). If such works were produced during the period of our time, we might not value it as much, and if such pieces were not perceived as valuable to the people of their time, there might not have been this many Venus art. If Venus art is only created today, artists may not appreciate them because of their aesthetic sensibility, unless there is a deeper message behind it, as we know that the criteria for judging art are not solely the aesthetics. Even though we may not perceive the body shapes as beautiful due to paradigm shifts in beauty, art historians appreciate the beauty of the past and how it can reveal history and culture. Therefore, it is valuable to people of our times as well, but more so due to its historical value.

Although an art piece may not be liked by the people of the artist's time, it could be loved by later generations due to paradigm shifts. Such changes are caused by the change in standards, which is likely due to other key events. Claude Monet (1840-1926) is known as the leader of the Impressionism movement, but his art style was not appreciated at the time it was shown to the world. Since his paintings did not follow the traditional style and method of painting, art exhibitions and other experts rejected them all. Nonetheless, impressionism lived on past his death and set the foundation for Post-Impressionism, which started in the 1880s, leading to another development in the history of visual art (Web Design Schools Guide). Judgments on his art then changed. We can thus argue that art pieces should be judged by people of our time, as we are more experienced and open-

minded in this globalizing society. However, the artistic value of an art piece may be once again rejected by the future society which, according to this theory, has better standards. Thus, we need to be reluctant when saying that an artwork should always be judged by a certain standard and that no standards may be the “best.”

Now that we have considered aspects of why both standards can be appropriate for judging, it is safe to say that knowledge in the natural sciences and art should be judged by both standards to use its value to the fullest extent, but there are no absolutes. There are also different types of standards, regardless of time. For instance, there could be aesthetic, emotional, social, cultural, or technical criteria that are applied to a single area of knowledge at a single period. Moreover, different cultures may judge a work differently; thus there is the issue of cultural paradigms. Also, it is not safe to say that both standards are always needed; because a standard may serve to be more important than another standard due to the impact the standard has on how the key event helped develop the field. Ultimately, it is the people who are using the knowledge in science and art that can judge the value of the key event.

Key events in the historical development of the natural sciences and the arts should be assessed by both the standards of their time and the standards of our time, but depending on the knowledge, certain standards could be more useful in evaluating whether the knowledge did prove to develop the area of knowledge or not. As we considered the strengths and weaknesses of both types of standards in the physical sciences and visual art, it can be said that judgments should be made case-to-case, as different

judgments will lead to a different amount of impact on the development of the area of knowledge. We should be careful when dismissing knowledge that emerges in our own time and knowledge that proved to be foundational in past events. Most importantly, we should be aware that the criteria by which we judge a key event might not be ideal and comprehend our limitations. As seekers of knowledge, it is also critical to remain fairly skeptical and understand the impact of paradigm shifts, and that knowledge may not be accurate or reliable until it is tested to be true for an extended period.

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