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6 March, 2018

**3. “Without the assumption of the existence of uniformities there can be no knowledge.”  
Discuss this claim with reference to two areas of knowledge.**

In order to understand the importance of assumptions about uniformities, we must first consider the nature of these assumptions and how they contribute to our understanding of the world. We assume that the world is uniform and that the universe functions according to some set pattern. Events don't just take place randomly without cause and rules, laws and “the way things are” apply everywhere, not just in a certain place. In other words, there is a reason for every event that takes place and these reasons can be applied to other similar situations. Uniformity depends on abstraction and it requires us to generalize and decontextualize situations so the general rules are valid everywhere. This assumption allows us to make connections between isolated events and gain knowledge from the bigger picture. However, a question arises: how necessary are these assumptions in order for us to have knowledge?

In the natural sciences, the nature of assumptions is universal. The very mission of science is to identify and explain the natural causes for the things that happen around us. The scientific method itself relies on the assumption that nature is orderly and reasons exist for the occurrence of natural phenomena. Absolute laws and rules about how the world works, such as the laws of physics, are formulated and applied to all situations, based on this assumption about nature. The law of conservation of energy, law of universal gravitation, laws of thermodynamics, motion, and electrostatics, are some examples of fundamental principles of science that cannot be broken or denied. However, who makes these assumptions about uniformities and on what basis are they

made? Assumptions made in the natural sciences can be tested, and have been tested, resulting in so-called universal laws. These laws are statements that summarize a large number of facts derived from empirical evidence and repeated observations. Scientific experiments are conducted by experts, scientists, who factor in assumptions about the universe's consistency and know that the obtained results will be applicable to other situations all over the world. An object anywhere on earth falls down towards the earth, whether it is a few meters or a few thousand meters above the surface. The Universal Law of Gravitation was based on Newton's observation of the behavior of objects on earth and behavior of objects in space. He found several similarities between the two and made an inference based on the assumption of uniformity: gravity must be a fundamental force that holds true everywhere, even for other celestial bodies, and not just on earth. Yet, it is sometimes possible to have knowledge without assuming uniformities.

Now, a problem arises: how can we expand and extrapolate scientific laws to the entire universe when we cannot access most of it? The natural sciences are rooted in the careful observation of nature and the search for patterns, structure and uniformity. Observation of a wild lion hunting its prey would provide us knowledge about the behavior of that particular lion. However, in this scenario, without assuming that other lions all over the world also behave similarly, we cannot extrapolate the knowledge of a lion's hunting methods and apply it to lions in general. Without assuming similarities between different natural phenomena, we can only know about a particular, isolated situation. Although we cannot observe every part of the universe, we can reasonably assume the laws, that are supported by every experiment we have performed and every phenomenon we have observed so far, apply to the rest of the universe. Science is inseparable from the way of knowing of perception. Based on the observation of nature, our perception allows us to experience and interact with the world. Humans have created these assumptions about

uniformities based on their own interpretation of the world. Nevertheless, their interpretation may be incorrect and the truth, the reality, may be different from what we think. For example, we assume the existence of the phenomenon of color everywhere. We only see these certain colors because our bodies are built in a certain way. The universe is too vast for us to access fully and we live in a very small part of it. We are restricted by our senses and our body's abilities and cannot interact with reality fully. So, we must make assumptions due to our limited sense perception. In the natural sciences, we can only perform experiments and explore the space accessible to us, our earth, and the areas accessible by space probes and telescopes. The areas beyond our reach remain a mystery but we assume that those unknown areas are similar to the ones we are familiar with and know about.

Looking at the issue of uniformities from the perspective of historians rather than scientists reveals several interesting implications. Assumptions made in history are less explicit than in science, where laws are stated and sometimes even written out, in the language of mathematics, as mathematical equations. Historians analyze various pieces of evidence available to them, including relics, artifacts, fossils, letters, and documents that reveal parts of the past. Since they cannot access all aspects of the past, they must use what they have and focus on the important events and people to tell the story of the past. Based on available evidence, historians join together several pieces of history with threads, or links, to weave together a picture of the past. They must assume the aspects that they have no proof of and also unimportant pieces of information in order to fill in the gaps in their understanding. They assume people's way of living and the general atmosphere in the time period under study. For example, during the British colonial rule in India, the general atmosphere among the Indian public was of resentment against the British power. Even Indian kings were under the control of British officers, obliging people to give in to the terms of the British. Although

historians cannot know every common man's situation, whether he be a farmer, artisan, or potter, they can assume that the general conditions that the public lived under were oppressive and unpleasant. These assumptions allow historians to describe the collective situation and focus on important figures such as generals, kings, emperors and leaders of movements when creating historical accounts. The common foot soldier, peasant, and citizen are ignored as individuals, and instead generalized into "the army" or "the public". It is assumed that all common men of a certain town, city, or country live under similar conditions in a similar manner and the public is treated as a single mass of similar subjects.

Historians assume the uniformity of basic human behavior and their basic emotions, requirements, and basic ways of living do not drastically change over the years. Humans in the 1800's were fundamentally similar to humans today. Historians use firsthand accounts by members of a group to understand the general sentiment of people from that group. For example, in 1917, Siegfried Sasson, a British poet serving as a soldier in World War 1, wrote, "I am making this statement as an act of willful defiance of military authority because I believe that the war is being deliberately prolonged by those who have the power to end it. I am a soldier, convinced that I am acting on behalf of soldiers." <sup>[1]</sup> Sasson's statement was a sign of revolt and defiance against the prolonged war, something that several other soldiers must have felt but were unable to express openly. In this way certain people in history are representative of the entire group of people. When historians find artifacts or evidence such as a sales journal from an artisan, they are able to determine what the artisans of that period sold and traded. However, the historian must grapple against the problem of anomalies. In order to determine whether the person under study is truly representative of his people, or merely an anomaly, the historian must consider all other evidence of that time period, and often must make a reasonable, educated guess.

In conclusion, the assumptions that we make about the uniformity of the world are necessary for us to be able to connect the events, people, and other things in our lives. In both the natural sciences and history, experts assume uniformity and lack of randomness in their exploration of the world. Although these uniformities do not necessarily exist, our observation of repeated events in the world around us allow us to make a safe assumption that the rest of the world is similar to the situations we study. It is interesting to note that our everyday lives go on under these universal assumptions and they allow us to expect certain behavior from both people and nature.

Word Count: 1441

### **Bibliography**

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