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What are the academic disciplines that psychology was built upon?

Psychology was not always respected as an academic discipline as it is today. Psychology has roots in philosophy, anatomy, and biology. Ancient Greek philosophers were pondering the mysteries of human nature for years. They had so many ideas and theories that modern psychologists still study, such as memory, behaviors, motivation, abnormal behaviors, thought, perception, etc. Research methods of physical and biological sciences were also applied into the field of psychology. It didn't take researchers too long to realize that there were biological and physical aspects to psychological phenomena and then they were researched.

Define the term *Zeitgeist* **and** name three factors that are part of it.

Zeitgeist literally means spirit of the age, and is mostly defined as the mood or spirit of the time period. It encompasses the major beliefs and ideas of the time, and was influenced by the coextensive economic and social issues, and the technology available.

One factor of zeitgeist is the economy. Development of psychology, and any academic field for that matter, relies on funding given to its research. In the early 1900's, the American want for practical uses of psychological research and techniques dramatically increased. There were also many more psychology labs and universities being built, so being a psychologist was becoming a rising occupation.

Another factor of zeitgeist is the social issues being attributed. The development of psychology was probably significantly hindered by the culture of how people treated each other. If you weren't a white male with an "normal" name then one probably had a lot of trouble finding a job in the field of psychology. Black Americans, and other people of color were not usually given any respect at the time, they weren't allowed to go to most schools, and there were limits to how many of them were allowed to enroll in schools for white people, and they were discriminated against because of their race. Women were also not allowed in some colleges or schools, and there were sexist policies against them. Some white men were also not exempt from discriminatory practices; if their last name sounded Jewish or foreign, they might have been rejected for those factors alone. There were also discriminatory practices against those with different ethnic origins, people who were Jewish had quotas against them. While things eventually did get better for them via the civil rights movement and the women's rights movement, things are still not as fair as they could be.

During the world wars, there was a surge of German psychologists fleeing Germany due to their radical policies. Germany had some of the most prominent psychologists due to certain circumstances and early adoption of psychology as an academic field. Also during that time period were people applying psychology to certain aspects of the U.S. military, like personnel selection.

Define *determinism* and *empiricism*.

Determinism is a philosophical belief that everything that happens is based on past events. Supposedly, if we know past events, we can predict the future. In terms of a clock, if we know how it works, we know how it's going to work.

Empiricism is a philosophical view that experience comes from the senses, this includes observation and experimentation, and is the only source of knowledge.

What are the differences between John Locke and Rene Descartes in terms of how they believed humans gained knowledge?

John Locke believed that when we are born, we are born tabula rasa, or a blank slate, meaning that we don't know anything at all when we are born. He also rejected the notion of innate ideas, that we are born with some type of knowledge built in. This is compounded with his theory that everything we learned was taken in through experience, even ideas such as the idea of God, which sounds innate, was a concept taught to children. Locke believed we have two types of experiences: from sensation, or from reflection. Sensation refers to what we sense and take in, as sensory inputs of objects in our environment, while reflection is more of forming ideas by recalling sensation, forming abstractions and more developed ideas.

Renes Descartes, on the other hand, believed in innate ideas, ideas that come directly from the mind and consciousness. An example of an innate idea would be the concept of God, and the self, as well as concepts like infinity, and perfection. He also believed in the concept of derived ideas, which are ideas that come after receiving a sensation from a stimulus. Derived ideas are external, while innate ideas are internal.

Define the *Spirit of Mechanism* **and** explain why it was important.

The spirit of mechanism is a philosophical belief that the universe is metaphorically a machine, its parts and the way it works can be explained as such. If you know how it works, you know what can happen. Philosophers and scientists applied this philosophy to the human body and mind, believing that the body and mind are also machines, that must mean they have parts that can be broken down and observed. It also means that we can figure out how it works.

What was unique about the way that James Mill viewed the human mind **and** what was his goal?

James Mill believed that the mind was a machine, and he wanted to prove that while also destroying notions that mind supposedly subjective and psychic activities. When he says the mind is a machine, he means that the mind is predictable, functions like a machine, set by external forces and run by internal ones. He also believed there is no creativity because it comes into the mind, gets processed like a machine, until it spouts out an idea like a product of that machine.

He also believed in John Locke's theory of tabula rasa, where humans are born with a blank slate as a mind, and that humans know nothing at birth. He also believed in Locke's idea that the mind had to be imbued with experiences. To test this, he heavily tutored his son, John Stuart Mill, in a variety of advanced academic topics. While James Mill was somewhat

successful in creating an erudite scholar, John Stuart Mill did state claim that his upbringing was harsh and cold.

What was the significance of David Kinnebrook's mistake?

David Kinnebrook was an assistant to the Royal Astronomer of the Royal observatory in Greenwich, England, before he was fired for making a mistake. That mistake, however, was significant in the development of psychology. One of his tasks was to observe a star and track its movements. However, his boss realized that his calculations must be wrong, because they weren't the same as his and told him to do better. Even though he tried, his results actually got worse, resulting in him getting fired. Twenty years later, the incident was later investigated by Friedrich Wilhelm Bessel, another astronomer, who theorized that his mistakes were due to "individual differences" that everyone had no control over and tested his hypothesis and found it to be correct. This led to two conclusion: astronomers had to take their personal characteristics and perceptions into account as they could influence what they reported; and that if the role of the observer had to be taken into account in the field of astronomy, then the role of the observer had to be taken into account of all fields of study, including psychology.

Why were the early developments in physiology important to the field of psychology?

Early developments in physiology were starting to discover how the brain and nervous system worked, and particularly the topic of sensations. By the late 1800's, there were developments and experiments in the field of physiology. One particular physiologist, Johannes Muller, did many papers and experiments on the topic of physiology. He had a theory that a stimulation of a certain nerve led to a certain sensation, as each nerve had its own specific. This idea led to even more research that focused on the nervous system, nerve locations, and nerve functions.

What was extirpation and of what value was it to psychology at that time?

Extirpation was a method in behavioral research that involved destroying or removing a part of an animal's brain and observing what changes are present behaviorally. Pierre Flourens, a professor of natural history in the 1800's, did experiments where he extirpated pigeons and observed the behaviors based on what part of their brains he destroyed. He was able to conclude that different parts of the brain controlled different functions. For example, the medulla controls parts of the autonomic nervous system (heartbeat, respiration).

Why did so many of the early developments in psychology happen in Germany?

Psychology was accepted as a field of academic study faster than in countries like England and France. One factor they had early developments is that they were more willing to adopt the inductive approach, where they'd make specific observations and then draw conclusions from that, while other countries would have rather strictly stick to a deductive approach, where they follow a theory or premise first to follow a conclusion.

Another factor was that they were more willing to define science more broadly. Scientists from countries like France and England only believed that physics and chemistry were a true science, while German scientists also defined disciplines like linguistics, history, esthetics, etc. Academics from France and England were hesitant to use scientific methods on the human mind, but Germany was not afraid of doing so.

The last factor was that German universities were given much more freedom to explore academically. Teachers, research, courses, they were given the ability to do what they wanted within reason, including the field of psychology. England and France gave no such freedoms to their universities.

What was Hermann Helmholz's major contribution to psychology?

Hermann Helmholtz's major discoveries were on the subject of nerve impulses and sensation. Before he did his experiment on nerve impulses, the most common belief was that nerve impulses were instantaneous, or at the very least, too fast to be accurately measured. Helmholtz did an experiment on a motor nerve of a frog's leg, and recorded the delay between the nerve and the muscle, and kept repeating the experiment with nerves further and further away from the muscle. He was able to measure the speed to be 90 ft/s, and was able to conclude that nerve impulses were not instantaneous. He tried to replicate this experiment with humans, but quit when he realized that humans had different speeds.

He also did research on vision, specifically on how the eye works, how it focuses on objects, and he helped revise a theory on how color vision works.

What is the two-point threshold?

Two point threshold is the point where two separate sources of stimulation can be distinguished. Weber's experiment showed a relationship between the body and mind, and was the first demonstration of a threshold. For example: you take two tips of a paperclip and directly apply it to someone's skin; if they are too close, then it feels like one point is being touched. If you move far away enough, that person will eventually feel two different points.

What is the just noticeable difference?

The just noticeable difference is the smallest difference that can be detected between stimuli. An example of this would be holding a weight in each of your hands, they feel like they weigh the same, but one is slightly heavier than the other. To get to the just noticeable difference, you increase the weight of the heavier one ever so slightly and get to the point where you can finally realize that one is heavier than the other.

What two ways did Fechner propose for measuring sensation?

Fechner proposed two ways for measuring sensation. The first way is to determine if a stimulus is present at all, sensed or not. The second way is measuring the stimulus intensity when subjects first perceive the sensation, which is the absolute threshold. The absolute threshold is

the point of sensitivity below where no sensations can be felt, and above where sensations can be perceived. Think of the absolute threshold like a line: any points above the line are where sensations can be felt, but below the line, nothing can be felt.

According to Fechner, what does a change in sensation depend on?

According to Fechner, a change in sensation depends on the differential threshold. The differential threshold is the point at which the least amount of change of a stimuli to when a subject actually notices a change in perception.