

19. What counts as a good justification for a claim?(Knowledge and Technology)

1. Titration Experiment(Malenga, 2017)

Word count: 261



Experiments have been used by humanity for the last hundreds of years as the checking part and proof for their claims in the form of hypotheses and theories. Actually, titration experiment is the justifying type of experiment, which is made as the proof for experiment goal.

For the last 500 years experiments have been the one kind of objective proof for scientific claims, hypotheses and theories. Their advantage is the full objectivity of data. In addition, experiments consider probable uncertainties, which helps to identify objective and very precise data, which can be tested for

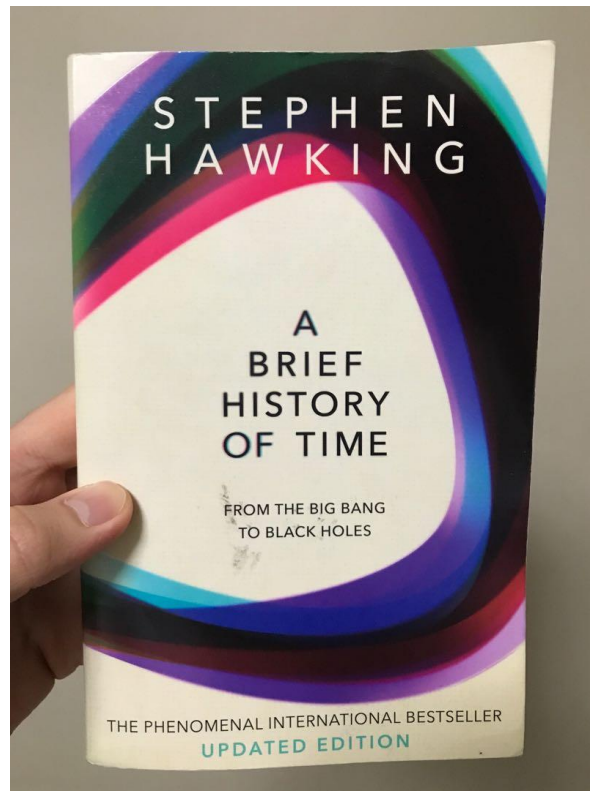
unlimited times. Because of this scientific society recognized experiments as the most precise way to justify scientific hypotheses and theories. Titration experiment is also an accurate way to identify concentrations of substances in compounds and colour them. The one advantage of this is the full objectivity of the experiment, because hypothesis or theory can be refuted by the titration experiment's results, so if a claim is proved by experiment and it's recognized, it is an excellent justification for this claim.

Personally, I studied titration experiments during Chemistry SL classes and we used this experiment to prove our hypothesis about the amount of concentration of one substance in another one. I justified my hypothesis with the experiment's data. It was the justification for my first claim and I was right in hypothesis. Some students had mistakes in the hypothesis, so the experiment showed its insolvency.

So, experiments can be counted as a good justification, because they are fully objective, consist of minimum mistakes and can refute wrong claims.

2. "A Brief history of time" book - Astronomy book, Stephen Hawking(Personal photo)

Word count: 246



Stephen Hawking is considered as the expert in astrophysics and physics. His theories and hypotheses are justified by a lot of scientific books and articles. Hawking's books consist of all his knowledge and theories. So, I took his book "A Brief History of Time" as a good justification for the claim.

Personally, I have this book and I use knowledge and a lot of graphs from this book as the justification and support for my claims and arguments. Actually, it is useful, because justification from this kind of book and expert author is very strong and can not be challenged by others.

Nowadays there are a lot of theories and hypotheses about astrophysics. A lot of them are proved and justified by accurate experiments, books and other

tools. For example, this “A Brief history of time” book is the perfect example of the knowledge, which is designed by the expert. This book can be considered as a good justification. It is objective, because the author is the expert, who studied this sphere properly and made some discoveries. In addition, astrophysics is natural science, which is precise and based only on neutral facts. Book consists of explanations and descriptions of the basic history of our universe, matter, planets and other objects. In addition it consists of a lot of easy and understandable graphics and schemes, which are related to the topic. Book is also written in easy form, so it will be a perfect justification for the claim.

3. BRESSER JUNIOR 60/700 AZ1 Refractor

Telescope(Bresser, n.d.)

Word count: 222



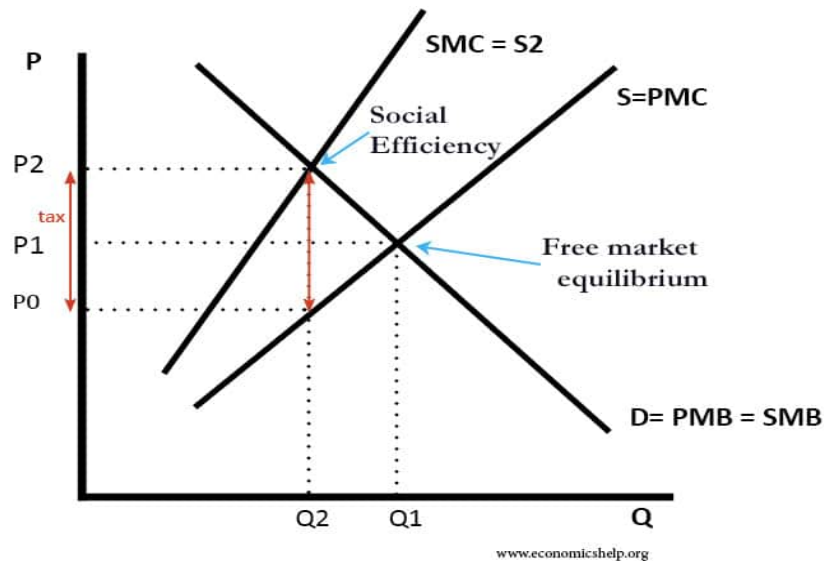
There are a lot of justifications for many claims, but some of them are criticised by people, who are not competent enough to understand the justification's relation to claim or justification's solvency. In real life there is the example of denial of some astrophysical basic theories by the members of pseudoscientific movements. They criticise many claims and argue this with the fact that they didn't see these objects with their eyes. But there are a lot of comfortable and high zoom refractor telescopes to observe space objects.

Personally, I have used this kind of telescope many times to observe space objects clearly and with zoom. These telescopes are portable, so a person can observe any object in the solar system and some stars at suitable periods of year and location. Also some models of this telescope can take a photo of a space object.

Because of the advantages of this telescope, which are described above, a telescope is a good justification. People, who don't believe in official sources will trust if only they will observe and search it personally, because humans take 90% of information by vision and we are too suspicious and self-confident to trust somebody without personal regard. So, a telescope will help them to observe some objects and it will justify the claim with direct proof of the claim.

4. Economics: Market Failure Graph(Pettinger, 2019)

Word count: 192



Market Failure graph is used to show and describe the relationships between quantity of goods, price, producers and social efficiencies and their benefits with overall welfare loss. With this graph we can model this kind of relationship and use it as the support or with special areas of the graph to justify some economic claims.

Personally I studied this topic and graphs during Economics HL classes and I can say that they are used as the justification for some claims in economics to predict some events or changes in the market.

This graph is good justification, because it consists of precise and brief knowledge, which is presented in the form of relationships, which are shown on graph. In the graph we can identify possible changes, some factors change and amount of some terms such as welfare loss, change in price, increase of social efficiency and market equilibrium change. They are understandable for a person, who has basic knowledge in economics and graphs are flexible, so it can be used as justification for several claims with different goals. In addition, human's best information searching tool is vision and graphs are suitable for this.

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