

## **In what ways may disagreement aid the pursuit of knowledge in the natural and human sciences?**

### I Introduction

In this essay I am going to show that doubts and disagreement about granted facts and theories may lead to progress and to the acquisition of new knowledge in the field of natural and human sciences.

**HOW? WHY? Can there also be too much disagreement so that progress is blocked?**

### II Examples from Natural Sciences

#### A When disagreement is useful and inhibits progress

1. Copernicus and Galilee rejected the idea that the earth was the center of the universe and claimed instead that the sun was the center of the universe. This helped to pursuit knowledge and this is what is taught nowadays in schools.

#### B When disagreement is dispensable and non-essential

1. Doubts and disagreements are not justified when someone is not enough knowledgeable in a certain field.  
For instance in school, we should not doubt everything taught by the teacher because we need to gain knowledge and to be more educated in order to be able to establish a well-founded criticism.  
Example of the cell theory which was developed in the 17<sup>th</sup> century and although it would only need an exception to prove the theory wrong, students and people other than scientists are not in the position to disagree with it.

### II Examples from Human sciences, History

#### A When disagreement brings about positive change for individuals and their nation.

1. The coup d'état and the French revolution between 1789 and 1799 provoked the abolition of the absolute monarchy and the old ideas concerning the principles of aristocracy, monarchy and religious authority. These were overthrown by new principles of equality, citizenship and inalienable rights.

#### B When disagreement brings about tragic consequences: Disagreement is one of the main reasons why a conflict or a war happens

1. From my personal experiences, I know that it can be difficult to express disagreement because it often brings about frustration and sometimes even anger to the person I am disagreeing with.

2. Example of the Irish civil War. It is a good example to show that sometimes disagreement can be fatal. It opposed the nationalists who supported the Anglo-Irish treaty and the Republican for whom the treaty represented a betrayal. Although the war was short it has been estimated to provoke 4000 deaths.

**Be careful here. I think that the examples of history are quite interesting, but history is more about OUR CURRENT VIEW of the past. How has disagreement on past events helped or blocked progress? How has disagreement of our current view of the coup d'état and the French revolution helped or hindered progress in historic understanding of the event? (It's not so much about disagreeing with aristocracy and the political situation at that time).**

**Make a comparison between natural and human sciences?**

**Can you also include TOK theory? Like the principle of falsification? Experimental results disagreeing with theories?**

**Other possibility: paradigms. When you are stuck in a paradigm, then you do not disagree with certain ideas.**