

## Laughing Philosophy

Plato was walking home, it was a hot afternoon, and he just wanted to get back into the cool space of his house. He was in a rush, despite the temperature, not only because he wanted to get home, but also because he was in a bad temper. Plato was annoyed, something this ridiculous had not happened to him for quite some time. He was a well-established philosopher, certainly amongst the most renowned ones in Athens, and Athens that was at that time the center of the world – at least the civilized world. As every morning, Plato had gone into the Academy, a school he had founded, to teach some of his students philosophy. This time, things had been different. This time, an old man had been standing around, asking whether he might benefit from Plato's wisdom. And Plato, feeling a bit flattered by the old man's admiration, had agreed. Oh, what a fool he was!

Things had developed a bit unusual, as he started to discourse on the structure of the world. He was just discussing material objects, that they are all to be interpreted due to the four principles, Water, Fire, Earth, and Air, and that these four elements can be related to the regular bodies, the Icosahedron, the Tetrahedron, the Cube and the Octahedron. When he made this statement, he was interrupted by a weird sound, and he noticed that the old man was the source of the sound – he stood there, bend over and one arm in front of his face. Evidently, at least that though struck the mind of Plato, the old man was not well. He continued to develop his argument, but only after a few sentences, he could not overhear the sound again, and this time, it did not only disrupt him, but also his students could not but notice. “Are you not well?” Plato asked, “shall someone fetch you a glass of water?” The old man looked up, took away the arm from his face, and this was the moment when Plato noticed that the old man was laughing. Laughing, in his lecture! This was an unprecedented incident, and Plato felt his anger rose immediately. “How dare you disturb my thoughts?” he said, or shouted, but the old man, just wiping away a tear, started to cough at first, and then said: “Oh, I am so sorry, but the development of your argument is – despite its seemingly logic –missing a point so evident and clear that I could not help but laugh about that. I am really sorry, I did not mean to upset you, but I just could not control myself.” The excuse – if it was intended to be a real excuse – did not work to calm down Plato, on the contrary. “So, you think I have missed a point, and what could that be if I may dare to ask?” Plato's voice had become sharp and cold, and the old man seemed to get sober from that tone. “I beg your pardon, honestly, I did not mean to offend you. But when you were talking about the symmetrical bodies and their relation to the four principles, or four elements, I could not help wondering myself: If these four bodies are symmetrical, then what about a sphere? Isn't a sphere the most perfect body, and aren't due to

this reason all the heavenly objects – Sun, Moon, Planets – objects that are spherical and that move on circles?” Plato had been struck by this weird argument, but even before he could respond, the old man had continued: “So if we agree that the ideal object is spherical, can we not assume that matter is formed by little spheres, spheres that are indivisible and shall therefore be called atomos [this is a Greek expression that would translate as indivisible particles] and that these atomos can combine in different manners that serve to form all the earthly objects.” Plato was well familiar with this kind of conception that had been developed by Leucippus and had been further elaborated by Leucippus' student Democritus – Democritus! “Well, my dear friend” responded Plato in an extremely friendly voice, “before getting into our discourse, shouldn't you introduce yourself to the students that are present here?” The old man laughed again: “Well, my dear Plato, apparently you have finally recognized me, so my thoughts seem to be well known to you. Maybe you should introduce me as your guest to the students that are attending your class?” Plato did not smile when he addressed his students: “This is the famous Democritus, one of the great philosophers from Thrace – I haven't introduced you to his work as it appears to be so absurd that it should not disturb the learning mind.” To Plato's surprise Democritus laughed again and said “So, my thinking is that dangerous that it may even confuse the thoughts of your students that are structured by the great Plato's understanding of the world – what does this tell us about the structuring power of your conceptions when they are so easily perplexed?”

Plato was aware that now his students expected a proper response, yet at the same time he was annoyed by the laughter of Democritus, and he was in a bad mood due to this unexpected disturbance, and he was smart enough to realize that at the moment, he was in a defensive position and that Democritus had advantages in the upcoming controversy. Thus, instead of responding directly,

he made a completely different proposal: “Well, my dear Democritus, you are of course right, the understanding of my students is so profound that even they will notice the absurdity of your thoughts. But as it is already getting hot and this meeting was not supposed to last for very much longer, I would like to invite you for tomorrow morning to present your understanding of the formation of matter, and then my students can judge themselves.” Democritus seemed to be somewhat surprised by this proposal, yet, as it was actually getting hot, and as the students seemed to be fine with this proposal, he had no other choice than to agree.

Plato finally reached home, and when being inside the house, with the cool air also his temper cooled down. He was thinking of what he should do the next day, and with his temper cooling down, his thoughts became more focused again. After a few minutes, a smile went over his face: He knew how he would act, and he knew that this would stop Democritus from laughing.

The next morning was significantly cooler, and Plato was in a good mood when he was walking towards the Academia. His good mood was changing to the worse when he was approaching the Academia, unmistakably there was a very peculiar sound – Democritus was already there and already laughing again. When Plato arrived, he noticed that Democritus was talking to the students, and that the students seemingly were eagerly waiting for him so that the dispute could start.

Plato greeted Democritus and then started the dispute by saying: “I think we should start by learning from you yourself about your conception of how the bodies on the earth are constructed.” Democritus looked a bit puzzled: evidently, this was an opening that he did not expect. He cleared his throat and started to talk “When we look at a piece of iron like this rod, we can easily break it into two parts. When we take one of these two parts, we can half it once again, and we can repeat this procedure a couple of time. At one point, our fingers might not be able to separate the remaining bit once again, which you could easily imagine if you take a sand grain and try to divide it once again. But we may imagine that we can develop tools that might be suitable to half such a small particle again and again. If we can imagine that we can develop such a tool, we could ask ourselves whether there is a natural limit of partition, that is, whether there is a natural limit caused by

the fact that there are smallest particles which constitute matter.” There was a weird noise, and it evidently came from Plato, Democritus paused and waited, but Plato was silent again, looking innocent and indicating with a gesture that Democritus should go on.

“You may of course suppose that there is no limit whatsoever, but there are good reasons to believe that this is not the case. If we look at a rock, this is reduced over time into pieces of sand, but at the same time rocks are formed again – thus there seems to be some internal structure that makes it possible that similar forms are developed again and again.” Plato interrupted: “This is very interesting, but could we perhaps learn a bit more about your so-called ‘atomos’?”

Democritus, being interrupted from his argument hesitated, and then started once again: “Well, of course. Those smallest particles have a mass, and particles of one kind (e.g. iron particles) are indistinguishable. There are different particles, so iron particles are different from water particles or salt particles. Iron particles are solid and heavy, water particles are soft and greasy, salt particles are sharp as they bite our sense of taste, ... “ There was again some noise from Plato that interrupted Democritus, but again, Plato just signaled that he should go on.

“Atoms are freely moving around ...” Democritus did not get any further, this time it was not just a noise that came from Plato, but he was just laughing “Ha, ha, ha” – somewhat to the puzzlement to his students who could not remember to have him heard like that ever before. “So you think that these particles are moving around – and according to which laws should such a movement take place?” Democritus looked somewhat puzzled: “There is no law as we know it, the particles obviously cannot be moving in a particular direction but they move entirely irregular.” “Hahaha”, Plato responded again, “this is really an absurdity, of course all motion has to take place according to certain laws, this is evident to everyone with a sound mind. But maybe we should put this detail aside for a moment, there is another question I have: If one of your so-called atomos is moving from one place to another, then what has been at this place prior to the arrival of this atomos?” “What do you mean by this question?” Democritus responded. “Well if we assume that those atomos exist, and if we further assume that they are moving in an irregular manner, than the following question arises: When one of these ato-

ma moves to a place, let us say one of the water atomon, and at the very place there has previously been another water atomon, then does the first atomon enter the second?" "No, of course not, what an absurd question" replied Democritus . "Fine, you are beginning to see how absurd your concept is" Plato went on. "So if the moving atomon is not entering the one that occupies the space where it should go to, then what happens?" Democritus looked somewhat distressed and said: "What makes you think that there is an atomon at all?" Plato pretended to be puzzled for a second and then responded: "Well, do you really think that there is a space that is completely empty? Do you think that in water there is a space where no matter is? Do you think that in a piece of iron that is so extremely solid and hard, there are empty spaces? Hahaha, this is really an absurdity that is even bigger than the previous one." Plato noticed that some of his students were also smiling, and he went on: "I have another question: Have you ever seen one of those atoma? Can you show us one of those atoma?" "Well, no ..." Democritus could not finish his sentence, as Plato interrupted him again with his "Hahaha", and then Plato went on:" So you want us to believe absurdities such as motion that takes not place according to laws, and as space that is completely empty, and you have not even an observational evidence to make such absurd assumptions? Hahaha, this is ridiculous" and this time, also the students started to laugh with

Plato. Democritus body language indicated that he was aware that he had lost this dispute, and Plato went on: "Well, I think my students have become aware why I was not talking to them about such obscure theories . But of course, my dear Democritus, if you want to learn some more so that your philosophy will improve, you are welcome to stay with us and learn some proper philosophy". Democritus was not laughing at this point, but just looked like an old, tired man as he waved aside and started to move away.

The atomic theory that was developed by Leucippus and Democritus was not accepted at the time of its development, it took more than 2000 years until scholars around 1800 started to take up this model once again and to develop it further.

---

**Laughing Philosophy** was edited by Panagiotis Kokkotas and it is based, in part, on **Historical Background: Atoms** written by Peter Heering and on **Biography: Democritus** written by Emilia Dobrowolska.

---

**Laughing Philosophy** was written by Peter Heering with the support of the European Commission (project 518094-LLP-1-2011-1-GR-COMENIUS-CMP) and the University of Flensburg, Germany. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.