

# Theory of Elements

1      Heraclitus and Parmenides proposed two opposite views on the problem of change: Heraclitus holds  
2      the view that everything is always changing while Parmenides believes that change is impossible. Still,  
3      this riddle is not solved. Things seem to persist, like mountains and oceans and all those heavenly bodies.  
4      However, things also seem to change, like the transformation between water and moisture. Younger  
5      philosophers try to blend such two opposite ideas in a mechanical way. Empedocles, Anaxagoras and the  
6      atomists agree with Parmenides that absolute change is impossible, but there is change in relative term.  
7      Things are composed of permanent particles, or elements. Through the combination or separation of  
8      these particles, things originate or decay. So change and transformation are attributed to motion. These  
9      philosophers differ in the answers of the following two questions: what is the nature of these particles and  
10     what causes them to combine or separate?

## 11    **1    Empedocles**

12     Empedocles (495 BC-435 BC) is famous for his theory of four elements. There are four kinds of elements,  
13     or “root of things”, of different qualities: water, fire, earth and air. These permanent elements combine,  
14     separate or rearrange their relationships, resulting in the origin, decay or transformation of objects.

15     Then, what drives the motion of these particles? Empedocles attributes it to two mythical forces,  
16     Love and Hate. Love makes elements come together while Hate drives the separation.

17     The effect of the two opposite forces results in the cyclic recurrence of the universe. At the very  
18     beginning, all particles are intermingled together, forming a sphere and Love reigns supreme. The universe  
19     is in a state of complete combination. Gradually, Hate grows, leading to the separation. The universe  
20     comes to a state of partially combined and partially separated. In this process, air appears first, forming  
21     the arch of heavens. Then it is fire, forming the sphere of stars beneath. Water is pressed from earth  
22     by rotation and is evaporated to moisture, resulting seas and lower atmosphere respectively. Organisms  
23     arise from earth: first plants, then the different parts of animals, like arms, legs, heads and eyes. All these  
24     parts combined with each other randomly and produce animals of weird forms, which would separate  
25     again because they are not fit to live. Such process continues until animals of normal forms, which are fit

26 to survive, are produced. These are perpetuated by generation. During this process of separation, Hate  
27 is keeping growing. Finally, Hate gains the upper hand and leads to the universe to a state of complete  
28 separation. Elements are completely separated from each other and no objects would exist. Then Love  
29 grows, and the whole universe moves to the state of complete combination again and things would recur.  
30 Briefly, the universe is always changing from one extreme state to another, from complete combination  
31 to complete separation or the reverse. Things only exist when the universe is in the state intermediate  
32 between two extremes.

33 Man is composed of the four elements and that is why we can sense all these elements. We can feel  
34 water, fire, earth, air and objects composed of them by the same elements in us. For example, we see  
35 earth by earth, and water by water. Particles from the things we sense meet the same particles in us, by  
36 which we see, hear, smell and taste.

## 37 2 Anaxagoras

38 Anaxagoras (500 BC-428 BC) disagrees with Empedocles' four elements. He argues that a world so rich  
39 of different qualities cannot be explained by a so limited number of kinds of elements. Besides, water,  
40 fire, earth and air are not elements. For example, man's body is composed of skin, bone, blood, flesh and  
41 so on. They are all of different qualities. Since the body is nourished by food, food must contains all  
42 the elements of which the body is composed. While food gets its nutrition from earth, air, water and the  
43 sun, so the later must contains the elements which compose food and body. So they are not elements,  
44 but mixtures of multiple kinds of elements. Hence, Anaxagoras assumes an infinite number of kinds of  
45 elements.

46 Perhaps being inspired by the revolution of heavenly bodies, Anaxagoras assumes a rapid and forcible  
47 rotation drives motion of elements. At the very beginning, all elements combined with each other. At a  
48 certain point in this confusing mass, a rotation started and extended, bringing similar particles together,  
49 and will continue until the initial mixture is finally disentangled. The rotation caused the separation of  
50 the dense and the rare, the warm and the cold, the bright and the dark, the dry and the moist. Then the  
51 dense, the cold, the dark and the moist were collected at where earth now is, while the rare, the hot, the  
52 light and the dry departed toward the further part of the ether. Some solid masses on earth were hurled  
53 from the earth by the force of rotation and became heavenly bodies. As for the formation of things on  
54 earth, the heat of sun dried up the moist earth, and from the elements filling the air which fell into the  
55 earth-slime by rain, organisms arose. The motion of creatures is attributed to souls.

56 How did the rotation start since it is the cause of all the following motion? To answer this question,  
57 Anaxagoras finally gives up mechanical principles and attributes it to *nous*, an absolutely simple and

58 homogeneous substance, absolutely separated from any other elements. It has power over all being and  
59 is the free source of all motion in the world. It knows all things past, present and future. It arranges all  
60 things and is the cause of all things. The *nous* is purposive. It forms only one unique and perfect universe.  
61 So the universe cannot recur as other philosophers like Empedocles proposes.

62     Parallels are drawn between *nous* and spirit. The word *nous* means mind, intelligence and intuitive  
63 apprehension in Greek. It may sound like something immaterial and spiritual, but in fact, it is difficult  
64 to draw a conclusion whether the *nous* of Anaxagoras is material, immaterial or something neither not  
65 entirely material nor not entirely immaterial. To Anaxagoras, *nous* is something distinct from other  
66 elements, which makes it seem to be immaterial. However, he also expresses it as the most rarefied of  
67 all things, suggesting it is material. Perhaps Anaxagoras himself is not really sure about it. A reference  
68 from Aristotle may help understand Anaxagoras' attitude on spirit and material:

69 *Anaxagoras uses mind as a device by which to construct the universe, and when he is at a loss for the*  
70 *cause why anything necessarily is, then he drags it in, but in other cases he assigns any other cause rather*  
71 *than mind for what comes into being.*

72 Perhaps Anaxagoras wishes to explain everything using mechanical principles and only uses mind unwill-  
73 ingly when the former fails.