What Is

Among the ancient natural philosophers and metaphysicians, we find numerous attempts to discuss the nature of things in the world. Of particular interest are the accounts of what is and what problems these accounts raise. I will expose some of these problems as present in the works of some Pre-Socratics and make it clear that some of them are still relevant today, despite the developments in science that have occurred.

Some ancient philosophers thought that there was only one thing. This form of monism was held by Parmenides. He explains that there cannot be more than one thing for the following reason. Granted that it is meaningless to talk about what is not, coming to be and passing away are meaningless. For if something comes to be, it wasn't before; and if something passes away, it becomes what is not. And hence, in both cases, we see that which is not is necessary, and so both coming to be and passing away are meaningless. Simplicius records Parmenides words on this subject: "nor was it at some time past, nor shall it be, since it *is* now all at once, one, continuous"[1] . An cosmic eternalness is attached to this viewpoint. In later science, we find that there was a 'occurrence' after which time itself began. But, if we look at the subjective time as we approach the 'beginning' it diverges to infinity. Similarly, at the 'big crunch end' or the 'open universe end' subjective time goes to infinity, whereas proper time remains finite. We have to ask ourselves - is Parmenides right? Is the universe actually eternal? Or, alternatively, are the contents of the universe eternal - the universe may have came to be, but will it last forever?

His word 'continuous' also has its share of problems. There are several ways in which this word can be interpreted, with interesting consequences in the light of his monism. If there is only one thing, it is impossible for it to be discrete, for then there would be several things. This implies that the universe is whole - all interconnected, at all times. However, if one looks at the universe with such a paradigm, how does one account for apparent changes? Are they illusions? The Parmenidean answer is not available. A modern scientist who asserts that the one is just the universe has to answer this as well. In other

[1] Selection 296, Presocratic Philosophers as prepared as handout by Eric Lewis

words, for Parmenides and for the modern scientist, is the universe itself a 'thing.' Another way to see the word continuous is to thing of continuity in time. While this doesn't have the problem of interconnectedness, it does share the problem of change. If something is contiuous in time, and there is only one thing, how does it change? And we fall into the change problem discussed above; we do apparently see change in something through time. The same modern problems of continuity occur as they do in the case of space.

A different tactic which still disallows coming to be and passing away, but allows for more than one thing is the view held by Anaxagoras. His view is recorded by Simplicius as well, and says "But before these things were separated off, while all things were together... mixture of all things prevented it, of the moist and the dry, the hot and the cold, the bright and the dark, since there was much earth in the mixture and seeds countless in number and in no respect like one another..."[2]

In this passage, Anaxagoras begins to characterize the things that are. Anaxagoras is infamous for stating that 'everything is in everything,' which is usually interpreted to mean that in each section of what is, there are portions of everything else[3] . (For instance, in motor oil, there is a little bit of red Jell-O.) This belief, coupled with movement, allows for changes in things by changes of proportions. A change in motor oil to red Jell-O would require that the amount of red Jell-O in this area increase, until it dominated the other constituents. Anaxagoras' views have several problems.

First, when it is said that everything is in everything, <u>what</u> is in everything? It is not clear whether there a finite number of things which are in everything or an infinite number of things in everything. Some philosophers believe that Anaxagoras held that there were an infinite number of things[4] , where as it is not clear that this was intended, for there could simply be vast numbers of things.

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[2] Selection 468, ibid

[3] I ignore the Anaxagorean 'Nous/Mind' as it appears to be in another ontological category of 'things' and requires special treatment.

[4] Some people might point to the 'seeds infinite in number' above, but to me it doesn't appear clear whether there are supposed to be an infinite number of seeds, or an infinite number of kinds of seeds.

Also, what kinds of things are permissible (even allowing for an infinite number of things doesn't mean that there is every possible item conceivable as a thing in everything)? Some things that some would be tempted to put in, like 'shortness' have some problems. Shortness being present in Mount Everest is strange, as is having 'taxi' in mango chutney. This last problem is still a problem to modern scientists - determining exactly what is in what is difficult. A chemist will tell you that sodium chloride is present in salt water. Does that mean that sodium (a metal) is in salt water? Some will say to add an electron to the metallic ions and the sodium metal will appear. Anaxagoras would tell us that the sodium is already there, waiting to be extracted. But we have to do something to get it out. Are we doing a process of extraction when we electrolyze salt, or are we making sodium from something that wasn't sodium? A word game is dangerously close here; it is not clear what 'making sodium' or 'process' means. The underlying question about the things that are here is twofold: is anything new ever produced?, and exactly what is meant when it is said that something is <u>in</u> something else. I focus on this latter problem below.

Chemists will tell you that (within a sufficiently large volume) every chemical element can be found. In that sense, Anaxagoras was right, every chemical thing is in everything. But this isn't exactly what he meant: "Neither is there a smallest part of what is small, but there is always a smaller (for it is impossible that what is should cease to be). "[5] Anaxagoras is stating that instead of taking a large volume to find examples of all the things that are, we can take as small a volume as we like. This answers our question about what it means to be <u>in</u> something else. Based on the quote, above, Anaxagoras appears to mean that any volume of stuff again has everything.

So we have seen that Anaxagoras allows for any number of possible things that are, but doesn't give us any indication about what they might be. Instead, he provides an account of how these things are arranged in the universe and how things that are appear to change.

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[5] Selection 472, ibid

Another account of what there is the account given to us by Leucippus and the other Pre-Socratic atomists. According to the atomists, "Leucippus and his associate Democritus hold that the elements are the full and the void..."[6] . What this means is not immediately clear with regards to the 'exists'. It can be interpreted in at least two ways, both of which appear again with their associated problems in modern science.

If exists is taken in a sense such that it means that everything is the full, accounting for qualitative change may be problematic. On this subject, Aristotle describes the atomists as saying "... but rather all things are generated by the intertwining and scattering around of these primary magnitudes."[7] But this is just an assertion. An exact account of how something from our experience (a rock, clouds, people, and so forth) forms out of these interactions with all the properties it has. This is also difficult in the modern account, which is somewhat similar to this ancient atomic view.

Later, the atomists characterize the atoms in an attempt to better explain the emergence of properties from aggregates of them: "... while others, becoming intertwined one with another according to the congruity of their shapes, sizes, positions and arrangements, stay together and so effect the coming into being of compound bodies."[8] But this helps not a bit, as it just refines the mechanism of aggregation, and doesn't explain how the aggregation is to produce emergent properties.

The other problem that arises from the atomistic account concerns the void. There is some debate on whether the void is an actual 'thing' or not. Does it 'exist' in the same way the primary magnitudes (atoms) do? It seems bizarre to accord existence to what the atomists apparently thought that which was not.[9] The commentator who wrote the handout (ibid) seems to think that the atomists justified their apparent paradox by believing that void was the 'empty' and exists because it occupies a place[10]. An account of the vacuum in

6 Selection 555, ibid
7 Selection 579, ibid
8 Selection 584, ibid.
9 Selection 555, as discussed above
10 discussion on p.415, ibid

modern science runs into a similar problem. A vacuum is described as being empty of matter and energy, which sounds a lot like the atomist's void. Any account of a vacuum in modern science has to grapple with the same difficulties - that is - in what sense does 'nothing' exist?[11]

We have now seen how attempts to answer the metaphysical problem 'what is?' have been given since at least as early as the presocratics, and each answer carries with it its own set of problems, despite answering this question. We have also seen that these questions are still around for a modern scientist with a metaphysical bent to grapple with. One thing can safely be concluded from this narrative, namely, that accounting for what is, has been, and is an important issue, but attempts to resolving it often will create a cluster of related questions, which, in some cases, are more difficult to answer.

[11] Some modern physics suggests that there is no such thing as a true vacuum due to some quantum effects of spacetime itself, but this is neither here nor there, as one can still have particle 'a' over here and particle 'b' over there, and what is between them, right now? 'vacuum'.