On the Smarandache Paradox

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Abstract

The Smarandache Paradox is a very interesting paradox of logic because it has a background common sense. However, at the same time, it gets in a contradiction with itself. Although it may appear well cohesive, a careful look on the science definition and some logic can break down this paradox showing that it exist only when we are trying to mix two different universes, where in one we have two possibilities and in the other we have only one. When we try to understand the second possibility in the universe which has only one possibility, we end in the Smarandache Paradox.

1. On the Smarandache Paradox

The Smarandache paradox can be enunciated as follows. Let A be some attribute (e.g., possible, present, perfect, etc.). If everything is A, than the opposite of A must be also A! For example, "All is possible, the impossible too" and "Nothing is perfect, not even the perfect" [1]. This paradox is very interesting because it has its logic but it makes no sense at the same time.

It's very easy to break down this paradox by simply taking a careful look on the definition of science. If we have two possible states, but the whole universe is immerse on only one of the states, then there's no sense talking about another state. It does not exist at all. The same logic can be applied on the Smarandache paradox.

Let P be a Boolean property (i.e., it assume only "true" or "false", "0" or "1", etc., as value). Now, suppose we have a group of particles that have this property, where half particles are P = **true** and the other half P = **false**. Restrictively in this group, say G_1, its possible to have both properties. However, if we define another group, G_2, where all particles are P = **true**, then it makes no sense talking about P = **false** in that group because that property does not exist at all. In other words, if all is possible, then it makes no sense saying that even the impossible is, because in this group we do not have any impossibility. It's a mistake trying to say that even the P = **false** is P = **true** in G_2 because in that universe P does not assume any value different from "true".

Moreover, if we have a group where nothing is perfect, then the perfection does not exist in that group. The paradox simply tries to get the perfection, which is possible in other groups, to this particular group where it is not. Thus, a truth for a particular group may be not true for another one.

Another way to get to this conclusion is by the principle of science stating that if we cannot deny it, then it does not exist. For instance, let me take the great example of the dragon in the garage of Carl Sagan [2]. If you tell me that you have a dragon on your garage, then I would ask you to take me there to prove it. However, when we get there and you shown me it, there's nothing there for me. You say that the dragon is invisible. Therefore, I ask you to throw some flour on the ground, so we could see the steps of the dragon. Now you say that the dragon is always flying. So I ask to use some infra-red detector to "see" the dragon fire. Now you say that the fire of the dragon is heatless. Patiently, I suggest throwing paint all over the garage so we could see him. Nevertheless, you say that the dragon is actually not made of matter. Now I ask you what is the sense in talking about a dragon like this? Why don't we just say that the dragon does not exist at all? Accordingly, if even the impossible is possible, then impossibility does not exist and therefore we can exclude it and have only the possibility. Consequently, is impossible to talk about impossibility in a restrict universe where only possibility is allowed.

2. CONCLUSION

The example of the groups of particles with the property P showed here, lead us to the fact that the Smarandache Paradox exist only when we are trying to understand the meaning of P = **false** in a universe where only P = **true** is allowed. Yet, the definition of science make clear that there is no sense in P being false in a universe where all Ps are true.

References

[1] Weisstein, Eric. *World of Mathematics*, "Smarandache Paradox" http://mathworld.wolfram.com/SmarandacheParadox.html

[2] Sagan, Carl. *The Demon-Haunted World*, Chap. 10