A Common Reason behind the Structure of the Universe and the Mud cracks

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Abstract

The method of physical analogy is used to generate general explanations to the structure of the universe.

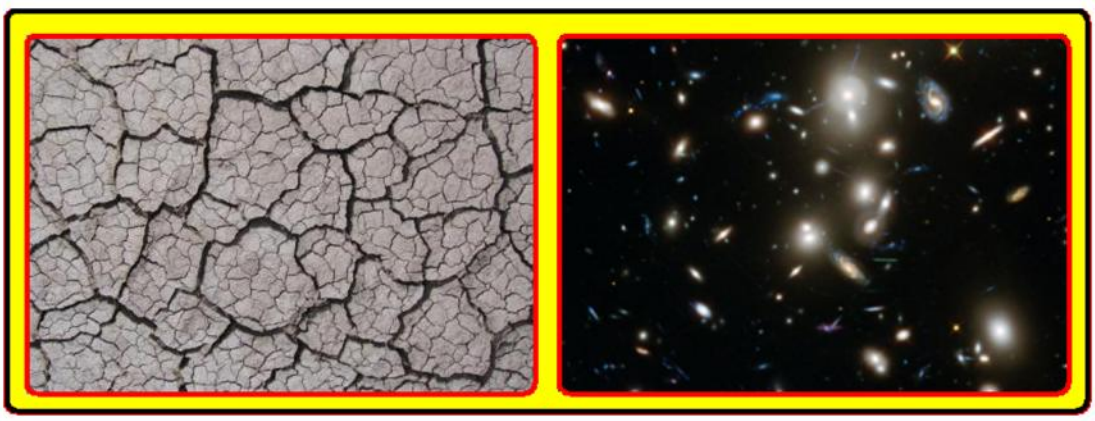
Introduction

Scientific literature contains many examples of both the usefulness and the danger of taking physical arguments from our experience with what we see around us to employ them in more abstract or unfamiliar phenomena that belong to different branch of science but have something in common with our experience.

Although not intended to be taken too seriously , this proposed analogy between the structure of the universe in the stage of the formation of separated parts and the shape of the dried mud maybe another example of the usefulness or danger of this method.

The Structure Formation

The early universe is thought to be in a very dense and uniform state .However it is known from observation that the universe today has a more complicated structure that may be described as a combination between uniformity and irregularity. This conflict between the initial state and the final result reminds us of the similar case of the formation of mud cracks from nearly uniform state so that we are seduced into investigating other similarities concerning the causes and results of the two phenomena.



The comparison between the two phenomena is shown in the following table :

	Mud Cracks	**The Structure of the Universe**	**Common Language**
The Shapes	The dry mud is divided into smaller parts which is divided into smaller subdivisions following the normal distribution	The universe is divided into smaller parts which is divided into smaller subdivisions following the normal distribution	Divisions and subdivisions following the normal distribution.
The Cause	The dry mud strain arrives the breaking point because the top dryer layers try to shrink while the material bellow stays the same size .	The strain of the dense mater of the early universe arrives the breaking point because of the expansion of the universe.	The matter is strained because of its response to opposite requirements until it arrives its breaking point.
Deviation from Homogeneity	Resulted from irregularities in the initial state .	Resulted from irregularities in the laws of physics.	Irregularity find its source in contents or the tools .
The size of divisions	The dried mud is not broken in every point as predicted in the case of total homogeneity but is divided into several parts with considerable sizes which is subdivided again into smaller pieces for the same reason .	The universe is not broken in every point as predicted in the case of total homogeneity but is divided into several parts with considerable sizes which is subdivided again into smaller pieces for the same reason .	The state of matter after breaking is in the middle between total breaking up (predicted in the case of homogeneity) and the state of holding together . So the opposite requirements are partly fulfilled

If the probability of the quantity of matter in the separated parts in both cases of the dried mud and the universe follows the normal distribution (the bell curve) then this distribution can be described completely by the mean and the standard deviation , so a very important question remains which is that : what are the properties in each case responsible for the determination of these two parameter ? Will there be any similarity between the answers of this question in the two cases ?

Conclusion

When the matter is subjected to strain caused by opposite requirements , the seeds of Irregularity which are found in the initial state (in the case of dried mud) or in the laws of physics (in the case of the universe) help matter to release much of its strain with the minimum breaking costs .. for if there is total homogeneity in the initial state and the laws of physics the matter will break in all the points at the same time and so will not benefit from the releasing of strain which is given to the region around the broken line of points which would have to stop the need for more breaking.