

BIRTH OF STRUCTURES IN THE UNIVERSE

EVERYTHING ARE BORN AS CONSEQUENCE OF EVOLUTION OF OBJECTS EXISTING IN A HIGHER SCALE

In big-bang cosmology the blue star-forming dwarf structures took their birth at a particular time in the creation of the universe as it expanded and evolved. These blue objects then coalesced together to form higher cosmic structures like galaxies. The galaxies then came together to form clusters of galaxies. These clusters gave birth to super-clusters as the universe became older.

In this hierarchical clustering model, the cosmic structures follow a time line, with a beginning in time, while the larger structures take birth as the universe evolves. In the universe without beginning and end, which I have proposed, the creation process takes place in a very different way than the above scenario which resembles a factory line of production: Smaller parts are sent to the next stage in the production line where they are put together to form larger units. These larger units then go to the next production phase, where they are assembled to create even bigger cosmic objects.

BIRTH IS A CONSEQUENCE OF EVOLUTION OF OBJECT EXISTING IN A SCALE HIGHER THAN ITSELF

In the new theory of creation without beginning and end, everything exists as parts of the whole, which exist always. A star in the universe, like our sun, exists as a part of a galactic system; a galaxy exists as a part of a cluster structure; a cluster exists as a part of the super-cluster structure; a super-cluster exists as a part of the universe, which exists always. Structure belonging to a particular scale like a star, or a galaxy, or a cluster, or a super-cluster does not pop up at a particular moment of time in the history of creation to be used as an assembly part to create larger units. If the structure in the higher scale does not exist, the smaller structures would not come into being. So, like the whole universe, structures in all scales – from stars and planets to the clusters and super-clusters of galaxies - have existed as long as the universe has existed. Although the stars, galaxies, clusters etc. have existed as classes of cosmic objects, the individual stars, galaxies, clusters etc. are not eternally shining objects. As individuals they all come and go in an eternal universe. The individual objects take birth (or die) as results of the evolution that occurs in the higher object of which they are parts. The evolution from birth to death in the higher scale, in turn, is a consequence of the evolution taking place in the next higher level. The birth and death of stars are consequences of the evolution taking place in a galaxy, the evolution of the galaxy is a result of the evolution in the cluster, the evolution of the cluster is destined by the evolution of the super-clusters to which the cluster belongs, the evolution of the super-cluster results from the evolution of the universe. So the eternal universe evolves in the sense that everything embodied in the universe moves and undergoes changes and evolutions. Though things are born anew, or they die following a path of evolution everywhere, that bring forth the concept of time, the universe self-creates itself from its own death and decay. Thus it remains the same in the way it sets forth the dynamics of changes and evolutions

everywhere, and maintains its own existence as an eternal entity. I have called this process as timelessness in time.

When we see a thing being born somewhere within a larger unit, like a star in a galaxy for example, the universal and unchanging dynamics is enacted to channel information from the global arena to the local spot where the object is being born. The birth of a body occurs because the global information of the evolution taking place in the whole system is transmitted to all parts. By enacting this mechanism the universe can locally adjust itself to its plan of self-creation from its death and decay taking place everywhere. By birth and death the universe reshuffles material from one part to the other, while adhering to its eternal global plan.

MOSAIC OF SPIRALS

This global plan appears in the form of a complex network of inflowing and out-flowing material entering and exiting local arenas. The birth of an object taking place in a part of the network is not a locally driven phenomenon, but a process where the entire global system participates. The birth here creates turmoil, which reverberates by channeling flows throughout the complex network, which have consequences throughout the body of the global system which destine the conditions of new birth or decay somewhere there. Everything occurring locally is thus interlinked globally with everything else.

This global network is made by weaving of filamentary flows of incoming and outgoing materials. This weaving process gives birth to a mosaic made of a unique cosmic form, which is a three-armed spiral structure. When a cosmic body, in any scale, takes birth it inherits this unique form. This three-armed spiral is the foundation of the universal mechanism by which every cosmic body channels outflow from the centre and refuels itself by turning the outgoing material as incoming flow. The evolution of all structures is associated with the mechanism encoded in the three-armed spiral form, which evolves following a universal path. As said before, the evolution in the mother body generates seeds of births of smaller bodies inside the larger unit. These seeds appear from the fragmented clumps and ejected objects which result from the interactions of the outgoing and incoming flows mediated by the spiral. These interactions transform the network as a mosaic of three-armed spiral structures which are interconnected with each other. Thus the mother spiral turns into a mosaic of spirals, while each daughter spiral in turn fragments and becomes a mosaic of even smaller spirals in hierarchically descending scales. Every such three-armed spiral acts as the dynamic arbiter of birth of a new structure.

BIRTHS RESULTING FROM LOCAL TURMOIL

The three-armed spiral, which mediates all creation process, contains the seeds of turmoil where cooler incoming streams and hotter outgoing flows meet. The turmoil passing through the network, constituting the mother body, creates clumps of filaments in local groups where they rearrange to form the three-armed spiral form - the new seed of turmoil - once again. These smaller spirals become the site of births of new structures. This new structure, born of the local turmoil, affects the surrounding by ejecting even smaller bodies from the sites of birth. The ejections occur to fit into the global plan of evolution of the mother body. The ejected material gets entangled in the network to fall in the right places to support the design which destines the path of evolution of the mother body. How does the universe assemble the complex network scales after scales, while affected by the

process of creation and destruction of structures everywhere, and maintains the universal dynamics, is certainly beyond the grasp of human intelligence.

EJECTED OBJECTS CARRY THE SAME MOULD

The births of structures, in all scales, follow by the mechanism of fragmentation of the mother structure into clumps bearing the three-armed spiral mould. The births of structures result in the ejections of smaller spirals from the birth sites which merge with the surrounding environment. These ejected objects carry the same three-armed spiral mould like the one which appears in the mosaic of the mother body.

In this lecture the births of cosmic structures as results of fragmentation and ejections, mediated by the three-armed spiral mould, is discussed by showing examples of star-clusters and stars. The same is true for galaxies and galaxy clusters.

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