Merological Morphogenesis and the Lexical Notions Meronym/Ameronym

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The Merological Morphogenesis

By morphogenesis, R. Thom (1972,1980) intends the destruction or generation of forms. Our interest resides on the merological morphogenesis of qualitative objects, which concerns their physical genesis by consociation and synthesis of their parts. Pragmatically, this process consists of assembling their parts in accordance with the schematic organizations we got in mind about these objects, and which could have been computerized. Let us illustrate on the following taxonomic representation:

<table>
<thead>
<tr>
<th>Scopic value 1</th>
<th>Table</th>
<th>Amerological unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scopic value 0</th>
<th>Feet</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is about a simple table made of feet nailed to the platform. We find different kinds of tables, and each instantiates a specific systemic merological organization reflecting its proper complexity. The above taxonomic representation possesses two plans: the vertical plan structured by phyletic relationships, and the horizontal plan structured by connective unions that are active and interactive. These unions can be reinforced by connective agents namely nails, screws, glue, soldering... In this functional context, connective unions are not associationist: they are consociationist because they engage contents (or parts) sharing structural and functional affinities. So while phyletic relationships are conceptual and schematic, unions are material and connective.

The above phyletic organization of the table is parametered by scopic values that are 0 and 1. The entities of the mesoscopic plan (feet and platform) are primitive merological contents with scopic value 0. The table is itself a modular macroscopic whole with scopic value 1, directly made of its mesoscopic parts. When the completeness and fullness of the whole is reached, the process of its formation stops. It could not continue because it reached its ontological end. As Husserl (1972) stressed it, whereas parts are characterized by their functional dependency, the whole is characterized by its structural autonomy and independency. This gives justice to our claim that the part is merological, and the whole, amerological (with negative prefix “a”).

In the left taxonomic representation, the phyletic relationships are prior inductive / affiliative, oriented from bottom to high. In this shape, the function they play is to form a non pre-existing table. These relationships can also be deductive / derivative from high to bottom and shaped like that, the function they play is to constitute a pre-existing table. Thus, merological affiliations are prior to merological derivations: the former “form” a non pre-existing entity, and the latter “constitute” a pre-existing entity. Otherwise, affiliations and derivations can annul themselves to just appear static and generic. For simple objects like table, chair, book… the representation of their merological organizations could appear simple because the number of their contents is ontologically reduced. But for complex objects like cars, planes, boats, computers... the endeavour of representing taxonomically their merological organizations is very difficult: it could need computer assistance. Generally, the extension and complexity of a given physical entity reside both on its modularity degree, and on the phyletic irregularities that can characterize its own progressive merological synthesis.

Meronyms and Ameronyms

We derive these lexical notions from the logical notions merology/amerology. Meronym categorizes a lexical item denoting a part in the outer reality, and ameronym, a lexical item denoting something that is ontologically a whole.

However, in this functional context, a meronym should be enunciated with regard to the whole it integrates, as we can see below:

Meronyms of table:  Meronyms of animal body: platform, feet...
head, eyes, hair, mouth...
Meronyms of house : walls, floor, roof, rooms, kitchen...  Meronyms of tree : trunk, branches, foliage, roots...
⇒ETC.  ⇒ETC.

References