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The Motility Characteristics of the Protozoans Suggest Possible Infused-Integrated Active Animal Origin

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The motility algorithms of microbes, especially protozoa, could be compared to those of macroscopic organisms (Videos 11 1-7). There could be convergence at functional levels, but could there be genetic & mechanistic homology between the motility behavior traits of protozoa & higher animals given the phylogenetic distance? Microbes & Macrobe gametes have employed varied motility solutions- ciliary-flagellar, amoeboid, sporo-cystic & associated motility behaviors with their own fitness & aesthesis. Here, we would examine & contrast ciliate motility traits & behaviors with their sporo-cystic, prokaryotic & other counterparts.

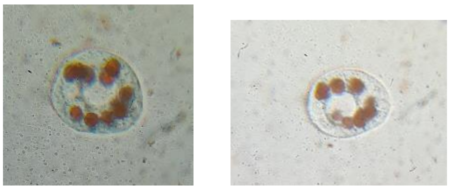


Image 11 1-2 Acrylic Stained Putative Ciliate

Image 11 3 Sporo-Cystic Bodies

The ciliate stained with acrylic colors & thus likely dead (Image 11 1-2, Video 11 1) seems to have multiple nuclei, which would accommodate for advanced phenotype & evolution while leading to considerable motility constraints & influences. The ratio of nucleic, per body, mass-volume, could thus indicate a trade-off between advanced genome & motility fitness, inter alia.
The evolution of genome packaging & transient genome functioning by means of epigenetic & regulatory factors would integrate with motility traits, even the mechanical factors. Cellular functions other than the genomic would also show trade-offs between being organellar to cytosolic, to support flexible cellularity.

The sensory & "mind" mechanism at microbial level, morphodynamics & motility would need to function adapting to the motility requirements. Sporo-cystic motility overcomes these processing trait requirements by being extreme of the trade-off of activity-quiescence, ultimately functional but dormant but rigid & still functional by virtue of employing external factors like wind or biotic vectors for transport. This indicates the requirement of the motile phenogenic mechanisms for motility traits themselves, while constraining the motility in a trade-off motif. Similar trade-off for phenogens would exist between their activity & requirement of fitness imparted by motility traits.

This is contrasted by rigid cellular organisms- they need lesser motility to contrapose with their rigid biology to free from activity-quiescence trade-off above; however, they lack motility fitness effects- they miss much transport advantage i.e. suffer stubbornness but are free from morphological stress: their motility is marred by rigidity but they benefit from evolvability of phenogens free from the motility stress & avail activity-complemented niche occupation (e.g. sporo-palynic transport media & vectors), *ab initio* &/or by evolution.

The large putative protozoan in the Video 11 2 finds its way out a chamber-like micro-habitat of aqueous decaying plant & associated materials. The algorithm of the very large stuck microbe prefers difficult ways out possibly given the difficult micro-phase of its life history. It compromises its voluminous shape to great extent & even responds by almost 180° turn to facing the suspicious cleft block. It doesn't still follow many simpler solution paths followed by smaller members of similar taxa around & consumes time at each alternative, indicating biological size & status changing the active algorithms of motility & extent of processing for decisions of transport. It consistently takes the wrong & difficult paths until it finally finds the way out. Its higher biological status might make it more apt to take on difficult paths & carry extensive processing to decisions, phenogens & phenotypes unavailable to similar lower status organisms.

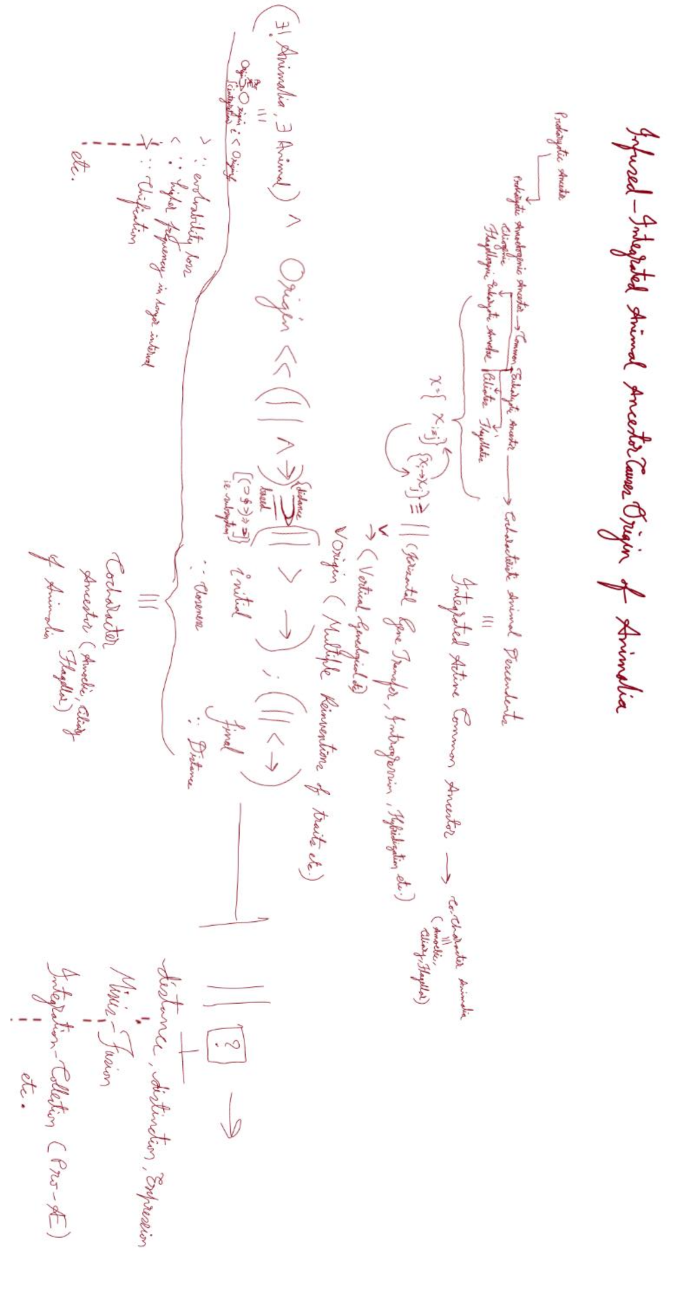
The ciliates gathered at a limit of their aqueous habitat (Video 11 3) appear to either "home" the site with senior microbe cyclically feeding the herd of younger ones &/or appear stuck- they don't turn back contrasted by the unhindered para-limit travelers, possibly suggesting lack of temporary sacrifice (reversal of direction of travel) for longer term benefit (availability paths, destinations & resources etc.). This is corroborant with the late turning back of large ciliate described above (Video 11 2).

The motility of the putative protozoans here could be contrasted with the prokaryotes (Video 11 4). They seem to show higher change motile function over body size- higher change in form per body size of spiraling prokaryotes & multiply longer than body flagella. This is contrasted with ciliary motions of protozoa, but similar to flagellar & especially amoeboid motion where length of flagella & change in body form per body size is higher respectively.

The necroting putative ciliate in Video 11 5, alludes to their basal coniform front for better ciliary motility. The putative ciliates (Video 11 6) don't appear to be proximally organotactic however, they move along, by & through organic material micro-habitats for possibly the one with resources without getting stuck at proximate insufficient organic materials. This contrasts the proximate protaxis of late turning of microbe but corroborates the higher processing for decision. It also suggests non-organotactic clinging to "difficult" organic material way outs to support more processing microbe (Video 11 2).

Video 11 7 suggests the chiral shape, form & function, with frontal motility bias with coniform front & lobose body & opposite pole; the frontal motion bias appears to function for both forward transport & turning with slight ciliary motion in other sides of the microbe. Turning is copious, however hasn't likely translated to all motile solution phenotypes as in finding the way out or being stuck at a limit of the putative ciliate in Video 11 2 & 3 respectively.

In view of poly-motile animals with trichotomic cell motilities in addition to stationary cells (e.g. adipose tissue cells)- ciliary (e.g. epithelia), flagellar (e.g. sperm) & amoeboid (e.g. macrophages), the animal origin(s) were pre- or co-dated by origin(s) & infusion &/or integration of the three phenotypes in their phylogeny (Note 11 1 on next page). The division of motile labor was transferred to locomotor organ systems from the cellular locomotory systems like above, sparing immotile cells & maintaining pro-Aesthetic trichotomic cellular motility.



Note 11 1 The Origin of Poly-Motile Animalial Ancestor by Infusio-Integration of Varied Motility Eukaryote(s);