Crutchfield, 2008). The latter ones will allow for a direct comparison of our proposed measures with the ones of Crutchfield, Shalizi, et al. (Crutchfield and Young, 1989; Shalizi, 2001; Shalizi et al., 2004).

7. Shannon's information was recently used as a measure of spatial complexity, with applications to urban areas (Batty et al., 2012). It would be interesting to compare this work with our proposed measure of complexity.

8. We are interested in studying a new complexity profile, combining Bar-Yam's profile and the σ profile to study the complexity of different phenomena at different scales.

9. The multiple scale approach could be extended to include the *meaning* of information (Neuman, 2008). Just like the same string can change its complexity with scale, information can change its meaning with context (Edmonds, 2001; Gershenson, 2002b; Edmonds and Gershenson, 2012).

10. We can extend our approach to measure and study autopoiesis (Varela et al., 1974; Maturana and Varela, 1980; McMullin, 2004), using the concept of life ratio (Gershenson, 2007b):

$$A = \frac{I_{self}}{I_{env}} \tag{11}$$

where the A is the ratio between the information produced by a system over the information produced by its environment.

11. Our measures could be generalized to computing networks (Gershenson, 2010), with potential applications to the study complex networks (Barabási, 2002; Newman, 2003; Newman et al., 2006; Caldarelli, 2007; Newman, 2010).

So many research questions are beyond the capabilities of the authors (another finite size effect). We invite the community to explore these questions in collaboration or independently.