

The Unspecific from the Perspective of Physics

Ille C. Gebeshuber

TU Wien, Institute of Applied Physics

Contact: gebeshuber@iap.tuwien.ac.at

Unspecific disease symptoms are symptoms that do not clearly indicate a specific disease or disorder. They can have various causes and may occur in different illnesses. Examples of unspecific symptoms include fatigue, loss of appetite, weight loss, headaches, dizziness, general discomfort or muscle pain. These symptoms can occur in both harmless conditions and serious diseases, so it is important not to ignore them and to understand the potential significance of the unspecific. With the specific view one cannot see the unspecific and *vice versa*. Investigations at increasingly smaller and more specific levels reveal a tendency towards unspecificity.

Tackling chaos (i.e., controlling unspecified signals) is closely linked to understanding health and its complexity. Immersing ourselves in the world of the unspecific allows us to better comprehend underlying principles and structures, thereby achieving more precise understanding. One example comes from hearing theory: below the threshold of hearing, even the most regular signals cannot be perceived. Adding physiological noise renders such signals more and more unspecific, and brings them closer to the possibility of being detected. Examples will be given from biology where noise is added to specific signals in critical situations, pushing them over the threshold.

Embracing the unspecific and not solely focusing on the specific yields a more comprehensive understanding of life and medicine. This perspective allows for restoration of the balance rather than merely applying a medical band-aid. Emphasizing the importance of addressing the root cause of a problem yields long-term stability and healing instead of merely treating symptoms or finding temporary solutions.