

The highly sophisticated and complex synchronization of antennas in the landscape of living agents

by Michael Striem

A living organism can be viewed as a sophisticated antenna embedded in the landscape of life. From the earliest stage of development, beginning with the zygote, the organism gradually accumulates structure, memory, and regulatory capacity. Through this developmental process, the body becomes a dynamic information-processing system capable of receiving signals, integrating them internally, and transmitting responses back into its environment. Importantly, this antenna is not confined to the brain. The entire organism participates: nervous system, endocrine system, metabolism, immune system, microbiome, and sensorimotor behavior together form a distributed sensing and responding network.

The history of the organism is not stored primarily as explicit data or narratives. Instead, past experience becomes embodied in the structure of the system itself: neural connections are strengthened or pruned, hormonal thresholds adjust, metabolic patterns stabilize, and behavioral tendencies form. In this way the organism literally carries its own history within its physical organization. Time becomes embedded as biological structure. The present state of the organism therefore reflects a continuous developmental trajectory from the earliest moments of life.

Within this system emerges the phenomenon we often call agency. Agency is not a separate object nor merely a transient feeling. Rather, it appears as a stable pattern of organization within a highly integrated living system. The organism continuously evaluates its internal and external conditions, drawing on accumulated history, bodily signals, and environmental cues to guide action. Decisions, reactions, and intentions arise from this integrated network of processes rather than from a single isolated center.

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Communication between living organisms occurs through multiple biological channels simultaneously. Visual signals such as eye contact and facial expression convey rich emotional and attentional information. Auditory cues such as speech rhythm and tone carry subtle timing and affective signals. Posture, gesture, and movement provide additional layers of communication. At slower timescales, hormones, metabolic signals, microbial exchanges, and immune signaling contribute to a deeper physiological dialogue between organisms sharing an environment. Together these channels form a high-bandwidth exchange of biological information.

When several organisms interact closely, measurable synchronization can occur across these channels. Brain rhythms may partially align, breathing patterns can synchronize, heart rhythms may influence one another, and movements often become coordinated. Such synchronization does not erase the individuality of each organism; rather, it allows several agents to form a temporarily coupled system. A striking example is the symphony orchestra. Individual musicians remain autonomous agents, yet through a shared score, a conductor, and carefully balanced signals from their instruments, they create a unified performance that no individual alone could produce. Similar temporary collective systems arise in sports teams, scientific collaborations, political assemblies, and artistic performances.

These collective events demonstrate that living agents can form larger coordinated structures when conditions are right. Clear shared information, analogous to a musical score, helps synchronize activity. Effective coordination mechanisms guide timing and emphasis. Balanced signaling prevents noise from overwhelming the system. Under such conditions, groups of agents can function as integrated networks capable of producing powerful collective effects on audiences and participants alike.

Human civilization itself may represent a vast extension of this principle. Language, cultural traditions, scientific knowledge, and digital communication networks connect

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billions of individual agents. Through these connections, patterns of information can persist across generations. Performances recorded and shared through modern media continue to influence future audiences long after the original participants are gone. In this sense, collective informational patterns can acquire a form of persistence that outlives individual organisms.

The landscape of life may therefore be understood as a dynamic network of interacting antennas. Each organism senses, evaluates, and responds within its environment while simultaneously influencing other agents. This could be viewed as ripples of continuous signals, with gradients in several dimensions. Through synchronization and coordination, these agents sometimes form larger temporary systems that amplify their collective capabilities. Although many details remain to be understood, especially regarding the precise mechanisms by which synchronization begins and propagates, this perspective highlights the profound interconnectedness of living systems.

Life, in this view, is not simply a collection of isolated organisms. It is an evolving field of interacting agents, each carrying its own subjective history while continuously exchanging information with others. The sophisticated synchronization of these biological antennas, ripples through the landscape, shapes the rhythms of social life, culture, and perhaps even the long-term trajectory of civilization itself.

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