

# The Role of Plant Gestalt in Plant Embodied Cognition

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## Abstract

I propose that plant cognition is better understood by focusing on the overall form and structure of a plant that continuously unfolds via growth—its gestalt—rather than discrete movements of individual parts, such as roots, stems, or leaves. I conceptualize plant gestalt as a self regulating, dynamic, fractal structure that modulates information flow and simultaneously channels resources across scales, thereby coordinating perception-action within the plant and with other organisms. By integrating concepts like pink noise and self organized criticality, I link the statistical signatures of optimal coupling to the physical architecture of living plants. This structural lens reframes plant cognition: rather than being merely distributed beyond a nervous system, form follows function and is materially enacted by the ever changing topology of plant bodies. Recognizing gestalt growth as a cognitive substrate opens new research avenues into how plants sense, decide, and adapt, with the possibility of analyzing it as records of past decisions.