

The Leavening Word: Shakespeare, Microbes, and Re-Imagining the Artificial

Timothy Ryan Day

“The Leavening Word” is a book-length project in the environmental humanities that investigates how meaning and imagination emerge from living systems. Bringing together literary studies, microbial ecology, biosemiotics, and artificial intelligence, the project argues that language is an ecological phenomenon—arising from multispecies interactions and material processes rather than from human consciousness alone.

The project begins from a simple premise: life is semiotic. From microbial signaling and fermentation to human language and artificial text generation, living systems interpret and transform signs. Meaning is not outside nature but one of its metabolic processes. Tracing this continuity from Shakespeare’s fermentative metaphors of decay, generation, and renewal to contemporary AI systems, the book reframes the “artificial” not as a rupture from nature but as one of its latest experiments.

Shakespeare’s writing emerges as historically embedded in microbial realities—brewing, baking, digestion, plague—imagining bodies and polities as porous and ecologically entangled. Fermentation serves as the project’s organizing concept: a material process that models transformation, surplus, and emergence across biological and technological domains.

By situating AI within a longer ecological history of meaning-making, “The Leavening Word” intervenes in debates about anthropocentrism, automation, and environmental crisis. It connects microbial ecologies to cultural production and examines how imagination might be understood as a shared, multispecies achievement.

At a moment when environmental crises demand new forms of thought and storytelling, “The Leavening Word” offers a materially grounded account of imagination and responsibility in the Anthropocene.