

Islands of Order

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Not long ago, both ecology and social science were organized around ideas of stability. This view has changed in ecology, where nonlinear change is increasingly seen as normal, but not (yet) in social science. This talk describes two surprising discoveries about emergent cultural patterns in traditional Indonesian societies.

The first story is about the emergence of cooperation in Bali. Along a typical Balinese river, small groups of farmers meet regularly in water temples to manage their irrigation systems. They have done so for a thousand years. Over the centuries, water temple networks have expanded to manage the ecology of rice terraces at the scale of whole watersheds. Although each group focuses on its own problems, a global solution nonetheless emerges that optimizes irrigation flows for everyone. Did someone have to design Bali's water temple networks, or could they have emerged from a self-organizing process?

The second story is about language. In 1995 Richard Dawkins memorably described genes as a "River out of Eden", an unbroken connection between the first DNA molecules and every living organism. We are not accustomed to think of language in the same way. But we each speak a language that has been transmitted to us in an unbroken chain stretching back to the origin, not of life, but of our species.

"Language moves down time in a current of its own making," as Edward Sapir wrote in 1921. In a study of 982 tribesmen from 25 villages on the islands of Timor and Sumba, we use genetic information to seek patterns in the flow of 17 languages since the Pleistocene.



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Room 203, Luce Hall, 34 Hillhouse Avenue