## Is species coexistence an emergent property of communities? Community Species pairs No, species coexistence is **predictable** from pairs Yes, species coexistence is an emergent property (simplest units) (system) → **o** exclusion → **\** coexistence Both the community and all its pairs coexist The community coexists but not all the pairs do В Community assembly Pairwise species competition (I) Testing whether the community (III) Replicating the abiotic environment reaches assmebly equilibrium can be challenging for pairwise competition can be challenging (II) Beeding and relocating the dominant species can be challenging C **Community stabilization** Pairwise species competition dilution dilution dilution xΝ growth xNgrowth growth isolation (I) Stabilized communities (II) Isolable dominant species (III) Reproducible abiotic environment Family 1.0 Simple Others Relative abundance synthetic Relative abundance Enterobacteriaceae medium Pseudomonadaceae Aeromonadaceae 0.5 Constant incubation Sphingobacteriaceae condition Moraxellaceae Comamonadaceae dilution Alcaligenaceae Periodic C4R1-C8R4-C10R2-C2R6-C2R8-C7R1-C1R4-C1R5-C1R5-C11R5-C11R5xΝ dilution cycle 0 1 2 3 4 5 6 7 8 9 101112 growth Dilution