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| Authors | Year | Paper type | Topic | Study species | Key findings |
| Tikhonov | 2016 | Model | Niche-packing hypothesis | - | More niche-packed communities- greater invasion resistance. Greater co-evolution- greater community persistence |
| Sierocinski et al. | 2017 | Research article | Niche-packing hypothesis | Biomethane communities of bacteria | Supports hypothesis- most productive/ diverse community, dominates second and third most productive/diverse |
| Gilpin | 1993 | Model/ simulations | Community competition/ coalescence | - | Communities can behave as coordinated units when in competition, resulting in asymmetrical outcomes |
| Vermeij | 1991 | Review | Community competition/ coalescence | Fossil-> present day communities | Both historical (fossil) and present day records show communities of organisms coming into coalescence with asymmetrical invasions and subsequent extinctions |
| Rillig et al. | 2015 | Review | Community coalescence | Bacteria | Bacterial communities displaced by movement of environment. Suggestions for exp. designs. |
| Rillig et al. | 2016a | Review | Community coalescence | Soil communities | Intrinsic and extrinsic causes of soil community coalescence. Implications for global warming, plant productivity, decomposition, nutrient cycling. |
| Rillig et al. | 2016b | Review | Community coalescence | Microbiome engineering communities | Microbial communities mixed in microbiome engineering to increase diversity. Outcome depends on whole community v extract interaction |
| Meadow | 2013 | Research article | Community coalescence | Skin microbiota~ humans | Team members share a microbial fingerprint. After matches, the overlap between microbial communities increases as a consequence of community coalescence. |
| Livingston et al | 2013 | Research article | Community coalescence | Aquatic microbial communities | Mixing competitive bacteria communities resulted in significant asymmetry- communities had more guilds and more species per guild. Extinctions resulted. Mixing trophic/comp, asymmetry but non-sig |
| Ridaura et al. | 2013 | Research article | Community coalescence | Gut microbiota~ mice | Lean mice gut microbiota outcompeted obese mice microbiota |
| Bakken et al. | 2011 | Review | Community coalescence | CDI infections | Fecal transplants can be used to restore healthy gut microbiota of diseased patients (coalescence of healthy v diseased) |
| Guo et al. | 2012 | Review | Community coalescence | CDI infected microbiota | FT is a safe an effective procedure however research is lacking in empirical testing and understanding. |
| Kort et al. | 2014 | Research article | Community coalescence | Oral microbiota | Shared microbiota among partners can proliferate in the oral cavity, but collective bacteria in saliva are transiently present and are washed out. Whereas, those on the tongue’s surface found a true niche, allowing long-term colonization. Between couple tongue microbiota more similar. |
| Ashbolt | 2015 | Review | Community coalescence | Aquatic microbes | Drinking dirty water exposes gut microbiota to over 500 different pathogenic microbes, some of which can directly infect the gut bacteria. |
| Johnson & Stinchcombe | 2007 | Review | Community ecology | - | Community ecology and evolutionary biology are interlinked, however the importance of those links are poorly understood and have not been widely investigated. |
| Gonzalez et al. | 2012 | Review | Community ecology | Microbial communities | Next-gen sequencing has resulted in more studies investigating microbial communities- allowing for the production of statistical and predictive models of spatial and temporal variation. |
| McGill et al. | 2006 | Review | Community ecology | - | Community context matters when understanding the role of functional traits in biotic interactions. Understanding this has been a challenge and controversial topic for ecologists |
| Friman & Buckling | 2013 | Research article | Community ecology | *Pseudomonas fluorescens, Tetrahymena thermophile,* SBW25Φ2 phage | Community context is important when bacteria are adapting to multiple selection pressures- phage resistance and defence against protists. Resistance to phage is lower when having to coevolve with protists as well. |
| Levin | 1970 | Review | Species co-existence | - | Different species can coexist if they are limited by different factors which are independent and the overlap of their ecological niches is ‘sufficiently small’ |
| Roughgarden | 1976 | Model | Species co-existence | - | Partitioning of resources could be due to co-evolutionary processes in which there is a selection pressure for character displacement to avoid competition between species. This reduces niche overlap between species. Niche overlap has been reported to decrease with increasing species diversity |
| Freilich et al. | 2011 | Research article (analysis) | Species co-existence | Bacteria | ‘Cooperative interactions are typically unidirectional with no obvious benefit to the giver. However, within their natural communities, bacteria typically form close cooperative loops resulting in indirect benefit to all species involved.’ |
| Lessard et al. | 2009 | Research article | Species co-existence/ invasion | Ant communities | Individual taxa within communities were more distantly related to each other than by chance- competition excludes closely related genera- similar niches. Invaded and intact communities did not vary in species richness but did in composition. |
| Elton | 1958 |  | Invasion | - | high species richness should reduce invasiveness of communities. (Consistent reference in studies) |
| Shea & Chesson | 2002 | Review | Community invasiveness | - | Niche opportunities, robustness to environmental stress, community maturity- important for invasion resistance. Role of diversity critiqued |
| Amalfitano et al. | 2015 | Review | Invasion | Aquatic ecosystems | Community compositions change in space and time. More stable communities- greater resource exploitation- increased invasiveness. Diversity increase invasiveness on small spatial scales. Env. stressors affect invasiveness and movement of microbes |
| Crawley | 1987 |  | Invasion |  | “a community is invasible when an introduced species is able to increase  when rare.” |
| Hodgson et al. | 2002 | Research article | Invasion | *Pseudomonas fluorescens* | Dominance of WS depicted invasion resistance- role of DE discussed v diversity. |
| Jousset et al. | 2011 | Research article | Invasion | *Pseudomonas fluorescens~ Serratia liquefasciens* MG1 | Genetic dissimilarity increased invasion resistance- also more productive. Genotype richness inhibited invasion through toxin production (intermediate peak) |
| Brown et al. | 2006 | Research article | Invasion | E.coli~ phage | Phage most advantageous for colonisation when invader lysogenised E.coli are rare. Spite more beneficial for invasion at higher freq. |
| Eisenhauer et al. | 2013 | Research article | Invasion | *Pseudomonas fluorescens~ P.putida* | Low niche dimensionality- invasibility determined by specific competitor genotypes. High niche dimensionality- biodiversity key, resource use of resident/invaders |
| Bonanomi et al. | 2014 | Research article | Invasion | Fungi | Diversity reduced the invasiveness of P.chlororaphis strain M71 to colonize the soil. |
| Emery & Gross | 2006 | Research article | Invasion | Field plant communities | Dominance of *Andropogon* determines invasibility. Species richness increased invasibility (microheterogeneity). Relative abundance of dominant not important over 40% |
| Crawley et al. | 1999 | Research article | Invasion | Grassland communities | No correlation between species richness and n°/biomass of invasive sp. Greater species richness- more invasives. Dominant species matters more than diversity |
| Dukes | 2001 | Research article | Invasion | Grassland microcosms~ *Centaura* | Functional diversity reduced community invasibilityby reducing resource availability but invisibility was not determined by species richness- SR determined temporal invader effects to resident |
| Lozupone et al. | 2012 | Review | Invasion | Gut microbiota | Gut communities affected by diet, medicines, infection. Changes with age. Communities display invasion resistance- more vulnerable with obesity (high nutrient diet) and antibiotics- factors decrease diversity |
| Stecher et al. | 2010 | Research article | Invasion | Gut microbiota~ E.coli, Salmonella | Enterobacteriaceae were not found to mediate CR (colonisation resistance) but indicated levels of CR. Which species indicated resistance unknown. |
| Dillon et al. | 2005 | Research article | Invasion | Locusts~ Gut microbiota | Species rich communities had greater CR |
| Van der Waaij et al. | 1971 | Research article | Invasion | Gut microbiota | Antibiotics negatively affect CR |
| He et al. | 2014 | Research article | Invasion | Mice~ Oral microbiota~ E.coli | Bacteria form colonisation resistance pathway- sensor, mediator, killer |
| France & Duffy | 2006 | Research article | Invasion | Crustacean~ mobile grazers | Species identity not important to invasiveness. Species richness- main competitors for food and habitat important for invasion resistance. Residents had comp. advantage |
| Kneitel & Perrault | 2007 | Research article | Invasion | Protozoa communities | Disturbances decrease species richness by 53%- not affected by invasive species. Invader species richness and abundance significantly increased with disturbance and the success of invasion was dependent on disturbance. Undetermined whether niche availability or dominant species identity affected invasion success. |
| Kolar & Lodge | 2001 | Review | Invasion | Invasive species | Characteristics of invasive species- see full article |
| Knowles et al. | 2013 | Research article | Community dynamics | Parasite communities (nematodes, protists)~ host (mice) microbiota | Parasites within multi-parasite communities interact when co-infecting a host- treatment of nematodes increase protists. |
| Brockhurst & Koskella | 2013 | Review | Community co-evolution | - | Community co-evolution has implications for how we understand how organisms adapt to novel biotic and abiotic environments |
| Lawrence et al. | 2012 | Research article | Community co-evolution | Beech tea microbes | Species A-C- adapted to biotic environment. Species D- adapted to abiotic. Species interactions affected diversification and exploitation of niches |
| Gomez & Buckling | 2013 | Research article | Community co-evolution | *Pseudomonas fluorescens*~ soil bacteria | More diversity in absence of soil community- morphotypes stably coexist in absence of soil community |
| Gomez et al. | 2016 | Research article | Community co-evolution | *Pseudomonas fluorescens*~ soil bacteria | Preadaptation before adding to soil community reduces soil community density |
| LaRue et al. | 2016 | Review | Community co-evolution | - | The reintroduction of species, populations and communities will have implications on each other and on surrounding communities if they have not had a co-evolved history. |
| Spiers et al. | 2002 | Research article | P. fluorescens genetics | *Pseudomonas fluorescens* | WS morphotypes are biochemically characterised by overproduction of CLP. Regulatory sequences play role in WS phenotypic variation |
| McDonald et al. | 2009 | Research article | P. fluorescens genetics  +Parallel evolution | *Pseudomonas fluorescens* | WS morphs show parallel evolution with the same mutations occurring at specific loci- any mutations of which can cause WS. It is not the number of genes involved but their regulatory role |
| Bailey et al. | 2015 | Research article | P. fluorescens parallel evolution + genetics | *Pseudomonas fluorescens* | Parallel evolution was greatest in heterogenous environments- suggests this is important for constraining adaptation. |
| Schluter and McPhail | 1993 | Review | Parallel evolution | - | Resource partitioning has evolved very consistently across independently evolved populations |
| Adams | 2010 | Research article | Parallel evolution | Salamander sp. | Parallel evolution was found between two salamander species which exist in competition across a geographical gradient |
| Tyerman et al. | 2008 | Research article | Parallel evolution | E.coli | The degree of divergence was smaller than convergence (see Schluter, 2000). Parallel divergence observed |
| Rice et al. | 2009 | Research article | Parallel evolution | Spadefoot toads | Parallel character displacement found in spadefoot toads |
| Pigeon et al. | 1997 | Research article | Parallel evolution | Lake whitefish | “ |
| Stuart et al. | 2014 | Research article | Parallel evolution | Anolis lizards | Parallel character displacement across island populations. Resource dependent. |
| Taylor et al. | 1996 | Research article | Parallel evolution | Salmonids | Genetic evidence for parallel life-history evolution and adaptive radiation |
| Schluter et al. | 2004 | Research article | Parallel evolution | Sticklebacks | Parallel phenotypic and genetic evolution in sticklebacks- interesting refs for more para evo studies |
| Schluter | 2000 | Book | Adaptive radiation | - | the speed of divergence by character displacement is greatest when phenotypic distance is intermediate |
| Pfennig and Pfennig | 2005 | Research article | Adaptive radiation+ trade-offs | Spadefoot toads | Trade-off between competition and fecundity |
| Ingley et al. | 2016 | Research article | Adaptive radiation+ trade-offs | *Brachyrhaphis* | Trade-off between speed and endurance- predation selection pressure. Some evidence of parallel evolution |

‘Haldane (1932) that parallel evolution results in part from similarly biased production of genetic variation in close relatives’