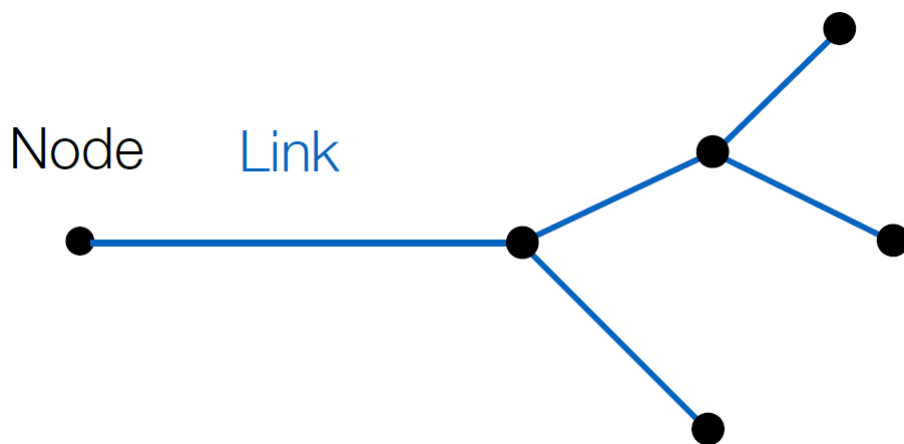


Networks in Linguistics

14 September, 2020

1

Network Basics



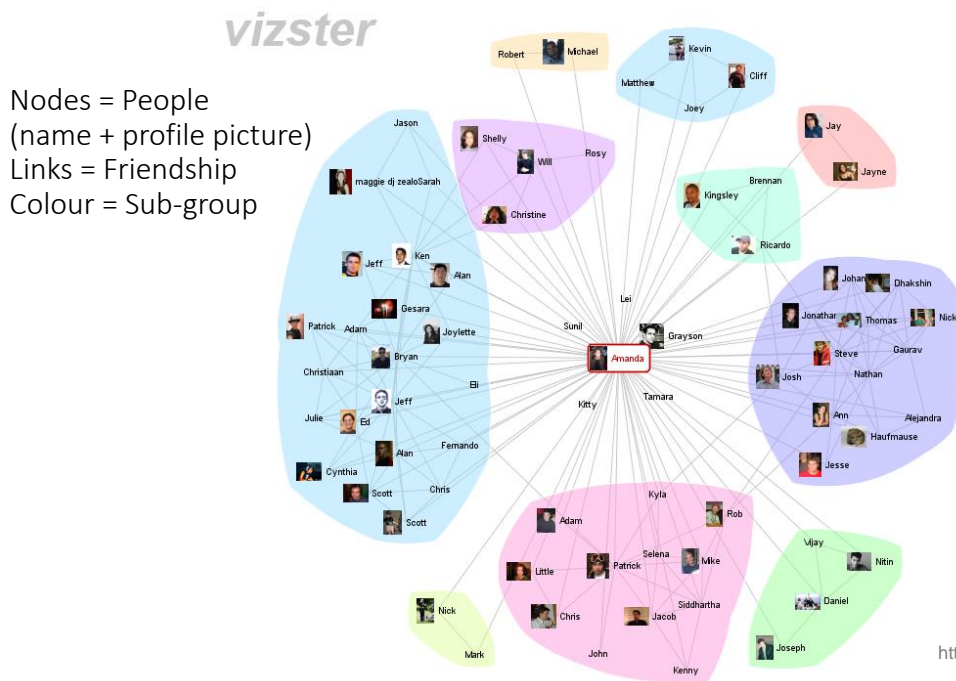
2

What are networks useful for?

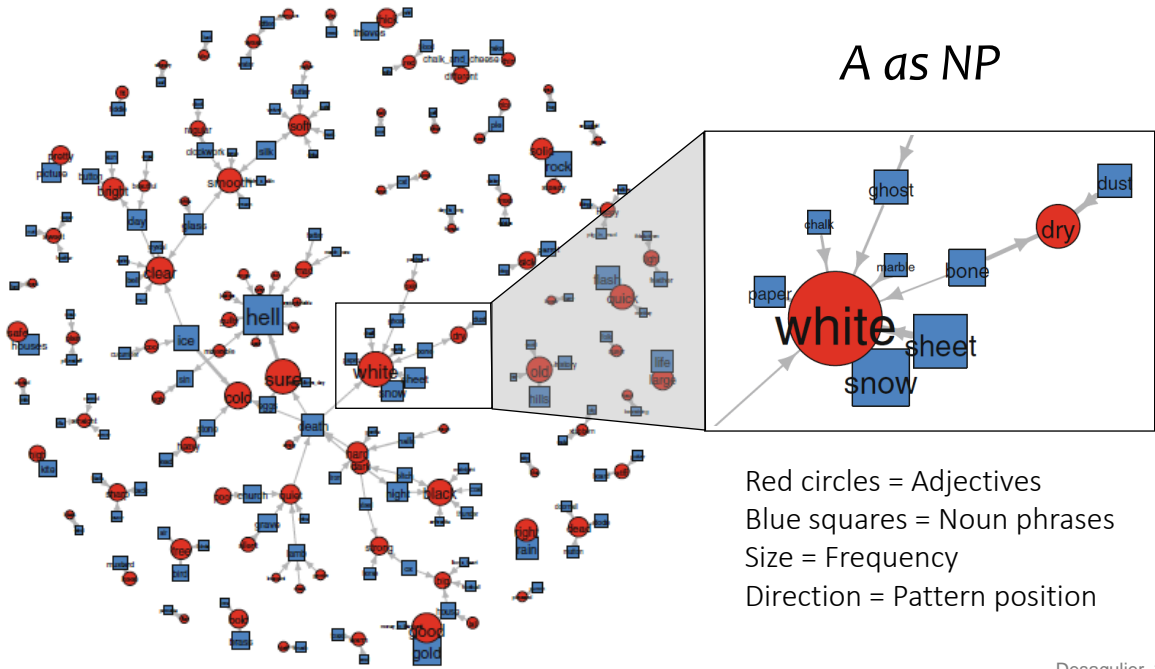
- Overview
 - Glance at the network's overall structure
 - Detect clusters and patterns
- Topology
 - What are the neighbours of a given node? How many are there?
 - What is the shortest path between two nodes?
 - Given a set of nodes, which nodes are linked to all of them?
- Attributes
 - What are the nodes with specific attributes (e.g. gender, age, ethnicity)?

Lee et al., 2006

3



4



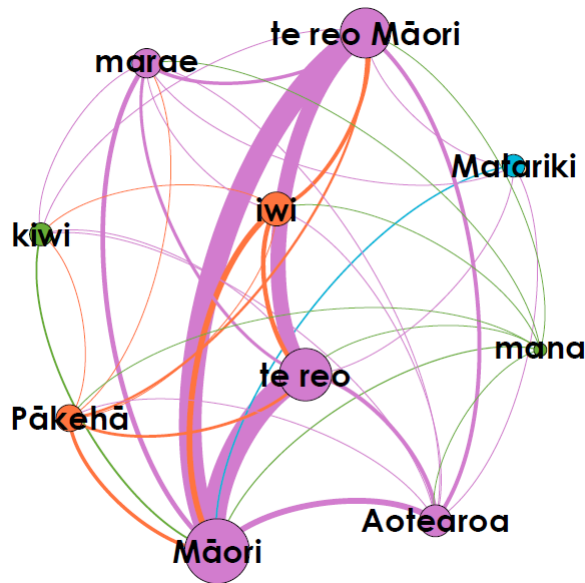
Desagulier, 2017

7

Loanword Co-occurrence

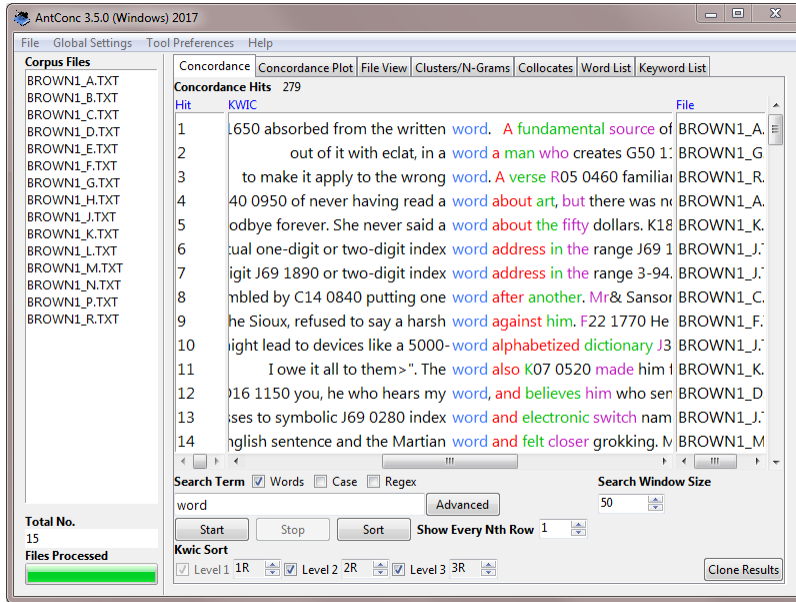


Nodes = Loanwords
 Links = Co-occurrence
 (at the text-level)
 Size = Frequency
 Colour = Degree



Data: Māori Language Week Corpus
 Software: Gephi

8



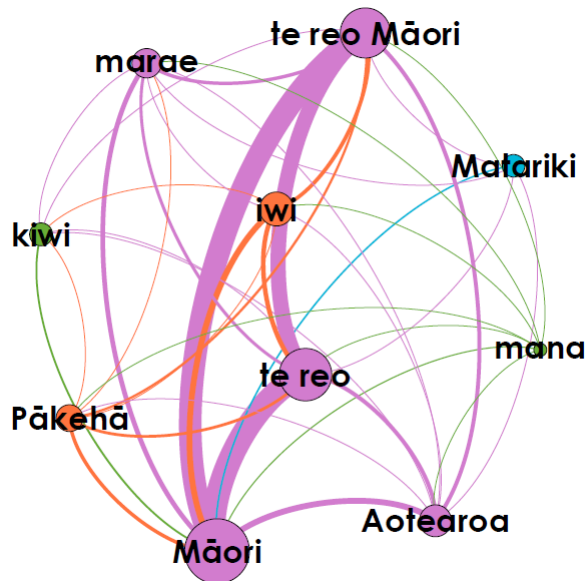
Software: AntConc

9

Loanword Co-occurrence



Nodes = Loanwords
 Links = Co-occurrence
 (at the text-level)
 Size = Frequency
 Colour = Degree

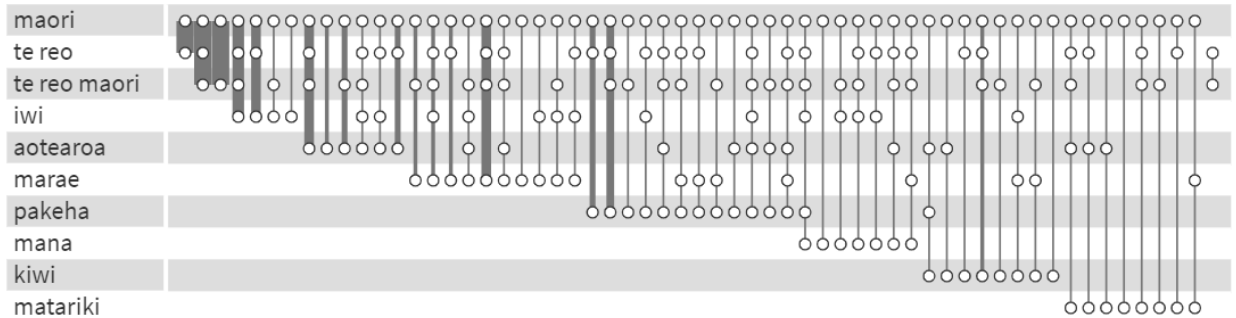


Data: Māori Language Week Corpus
 Software: Gephi

10

Hypergraphs

Moving Beyond Pairwise Networks



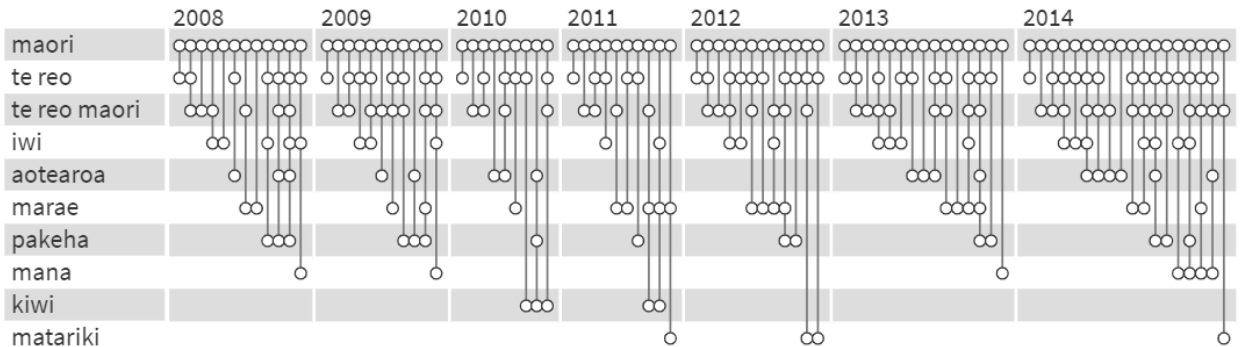
Nodes (LHS) = Loanwords

Hyperedges (vertical lines) = Exact combination of loanwords (at the text-level)

Data: Māori Language Week Corpus
Software: PaohVis

11

Dynamic Hypergraphs



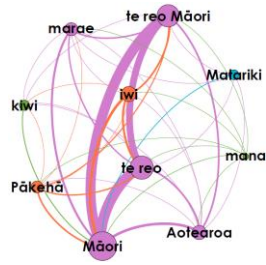
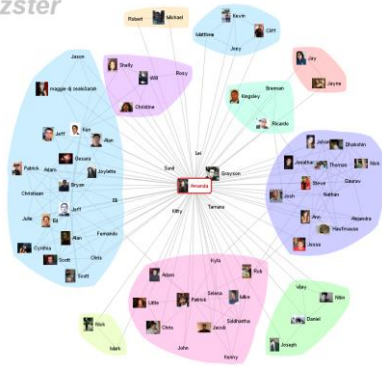
Nodes (LHS) = Loanwords

Hyperedges (vertical lines) = Exact combination of loanwords (at the text-level)

Data: Māori Language Week Corpus
Software: PaohVis

12

vizster



Thank you!

