

"DEPENDENCIES"

THE MAN COMES

THE MEN COME

THE OLD OLD MAN COMES
etc.

THE OLD OLD MEN COME

THE WOMAN SINGS

THE WOMEN SING

THE WOMAN REALLY SINGS

THE WOMEN REALLY SING

THE WOMAN REALLY REALLY SINGS
etc.

THE WOMEN REALLY REALLY SING

These languages are all finite state. Some have dependencies spanning an unlimited number of symbols

SS p. 21

aa bb abba baab aaaa aabbba
etc.

This language is not finite state. The dependencies are unbounded and nested. Inside a dependency, there are an unlimited number of nested dependencies

ab aabb aaabbb aaaaabbbb etc.

This language has the same abstract property as the preceding one. Both languages are context free.

aa bb abab bababa aabababb abbababb

This language is obviously not finite state. It is not even context free. Context free grammars are great at nested dependencies, but can't handle cross-serial ones.