Contrast

Recovery/decay different time scales – T1 & T2

Tissue have both T1 and T2 properties

T2 – simple

T2 decay, spin-spin

Magnetic interactions -> Decay

Signal from Mt only (not Ml)

Decay different rates

Proton density -> speed of decay

fat = high, CSF = low

Pick optimal TE

T2 – complicated

Decay too rapid for machine

Same coil excites, receives info

Takes time to switch modes (photons are slow)

By time ready to “read”, full T2 decay

Second 180 pulse

Reverse decoherence order

Then, in-phase when machine can read

Tissue properties still true

T1

90 pulse

T1 recovery slower time scale

Different rates

Fat fast, CSF slow

Maximal difference -> no Mt

180 pulse

Magnitude of Mt is a function of Ml before pulse

So, larger Mt from more recovered tissue

Quick TE – minimize T2 properties

Bash

Arrays, counters, cat, awk

Pipeline

JLF priors

ACT priors