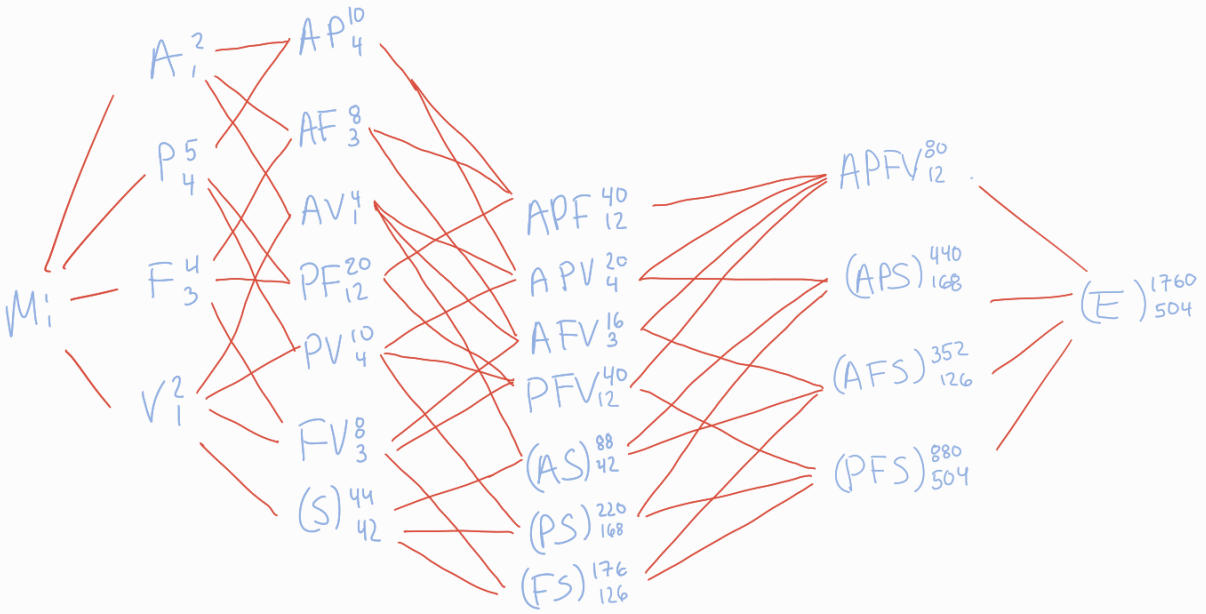
# Hasse diagram for Lages, Boyle & Jenkins (2017)

Mixed ANOVA

- A: adaptation, 2 levels [within]
- F: font size, 4 levels [within]
- P: letter position, 5 levels [within]
- V: visual acuity, 2 levels [between]

Experiment 1a: 44 participants (S), nested within visual acuity




Example of calculation

(a) 1) (AS) has $44^{(S)} \times 2^{A} = 88$ instances

2) Subtract degrees of freedom of ancestors: $\underset{M}{1} + \underset{A}{1} + \underset{V}{1} + \underset{(S)}{42} + \underset{AV}{1} = 46$

So DF of (AS) is $88 - 46 = 42$

(b) 1) APF has $2^{A} \times 5^{P} \times 4^{F} = 40$ instances

2) ancestors are w/ df: M, A, P, F, AP, AF, PF → $1 + 1 + 4 + 3 + 4 + 3 + 12 = 28$ > $40 - 28 = 12$ degrees of freedom

c) 1) (APS) has $2^{A} \times 5^{P} \times 44^{(S)} = 440$ instances

2) denominators are found by subtracting df of ancestors

$M + A + P + V + (S) + AP + AV + PV + APV + (AS) + (PS)$

$1 + 1 + 4 + 1 + 42 + 4 + 1 + 4 + 4 + 42 + 168 = 272$

Thus $440 - 272 = 168$ degrees of freedom for (APS)

Trick: anytime (S) occurs, one can view it as (VS)

Testing

1. V vs (S)
2. A vs (AS)
3. P vs (PS)
4. F vs (FS)
5. AV vs (AS)
6. PV vs (PS)
7. FV vs (FS)
8. AF vs (AFS)
9. AP vs (APS)
10. FP vs (FPS)
11. AFV vs (AFS)
12. APV vs (APS)
13. FPV vs (FPS)
14. APF vs (E)
15. APFV vs (E)