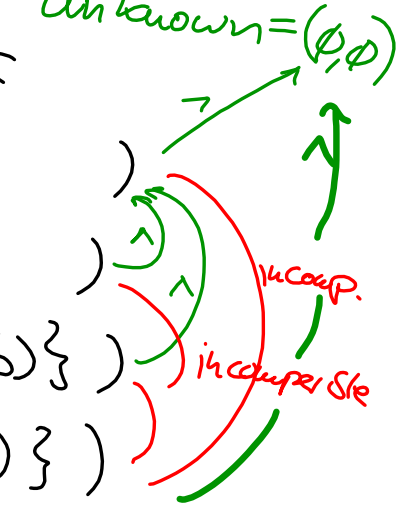
Sl. 632

ordering wrt. truth value: $t > u > f$

wrt. knowledge: $t \quad f$ (with u below)

the minimal model: everything is unknown $= (\emptyset, \emptyset)$

	T	F
I_1:	$\{p(a)\}$	$\emptyset$
I_2:	$\{p(a), p(b)\}$	$\emptyset$
I_3:	$\{p(a)\}$	$\{p(b)\}$
I_4:	$\{p(b)\}$	$\{p(a)\}$



Sl. 641

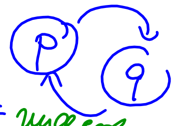
$P = \{ p(a) :- \neg p(a) \}$

$w = (\emptyset, \emptyset)$

P_w: $p(a) :-$ ~~$\neg p(a)$~~ undef

$T_{P_w}^{\omega}(\emptyset)$: $\emptyset \rightarrow \underset{\emptyset}{\text{val}}(p(a)) = u$

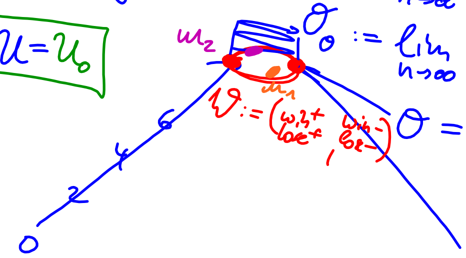
consider our win-move game +



⇝ running it: $\mathcal{U}_0 := \lim_{n\to\infty} I_{2n}$ = underest. ← not in

$\mathcal{U} = \mathcal{U}_0$

$\mathcal{O}_0 := \lim_{n\to\infty} I_{2n+1}$ = overest. $\supseteq$ {win(p), win(m), win(g), lose(h), lose(m), lose(g)}



$\mathcal{W} := (win^+, lose^+, win^-, lose^-)$

$\mathcal{O} = \mathcal{O}_0 \cup \{win(p), win(q), lose(p), lose(q)\}$

Note: Overestimate ⊭ Program, ∄ "necessary"

Underestimate ⊭ Program!

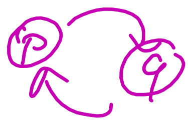
win(p) :- move(p,q), ¬win(q)
T T F

Program: win(p) :- move(p,q), ¬win(q)
F T T

⇒ merge them to $\mathcal{W}$ (3-valued)

- $\mathcal{W} \models_{3val} P$
- even stable

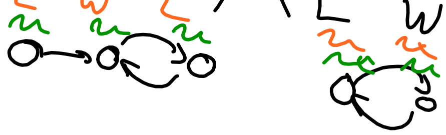
⇒ with winmove +



there are four total stable models:

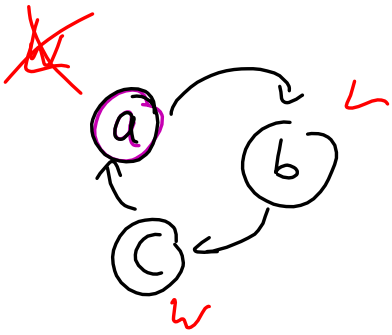
a|b|c|...	g	h	m	p	q
	L	W	L	W	L
	W	L	W	L	W
	L	W	L		

(the g/h/m pair and the p/q pair are combined: (…) × (…))



← is also a partial stable model = $\mathcal{W}$ = "minimal partial stable model"

⇝ potential exponentially many stable models (upto)



total?

→ no stable model!

Partial stable model: $(\emptyset, \emptyset)$