

Slide 552

"object creation" by function symbols

- recall "Herbrand universe" $=: HU$
 = all terms from terms that can be constructed by fct symbols

$HU = \{ a, f(a), f(f(a)), \dots \}$
 is infinite

→ With the ^{point} of Slide 552 there are only infinite models of P :

$M := \{ p(a), p(f(a)), p(f(f(a))), \dots, p(f^n(a)) \}$ = minimal model

Consider $M \cup \{ p(b) \}$ is not a model of P ,
 but $M \cup \{ p(b) \} \cup \{ p(f(b)), \dots, p(f^k(b)) \}$ is again a model

Mai 22-14:09

557 resolution calculus

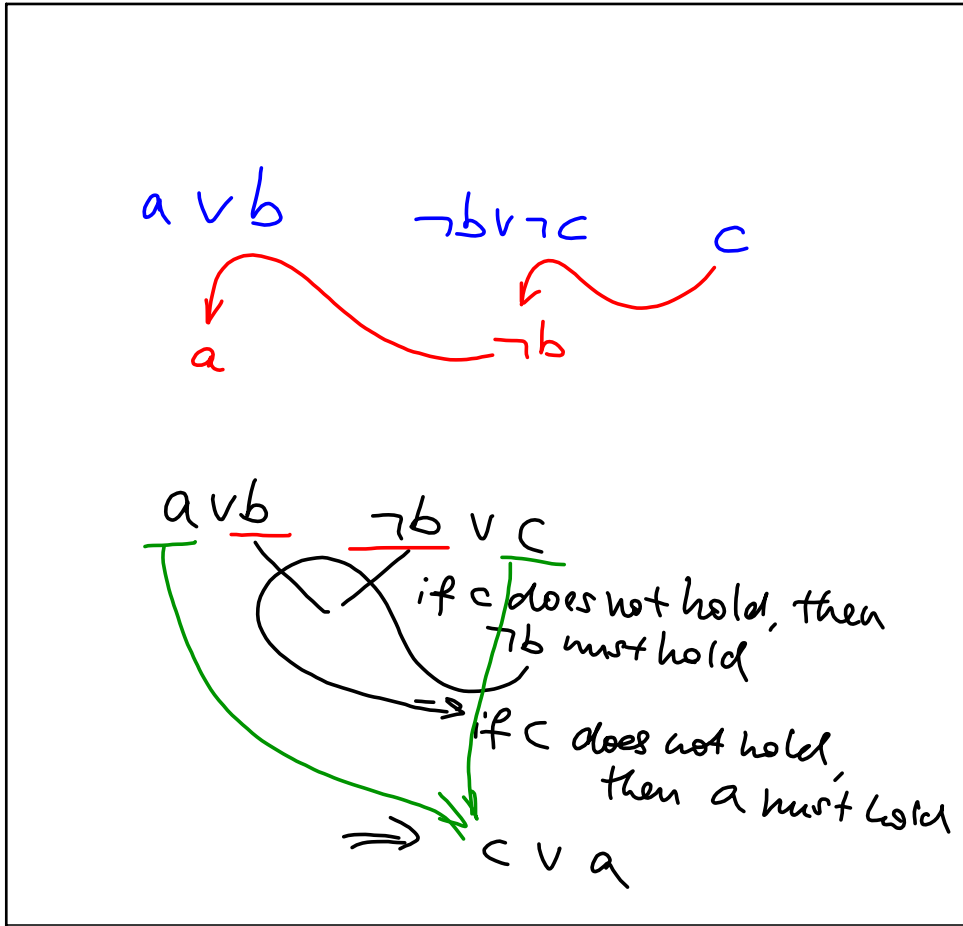
$a \vee \neg b$ $\neg b \vee \neg c$ c

↓ ↘ ↙

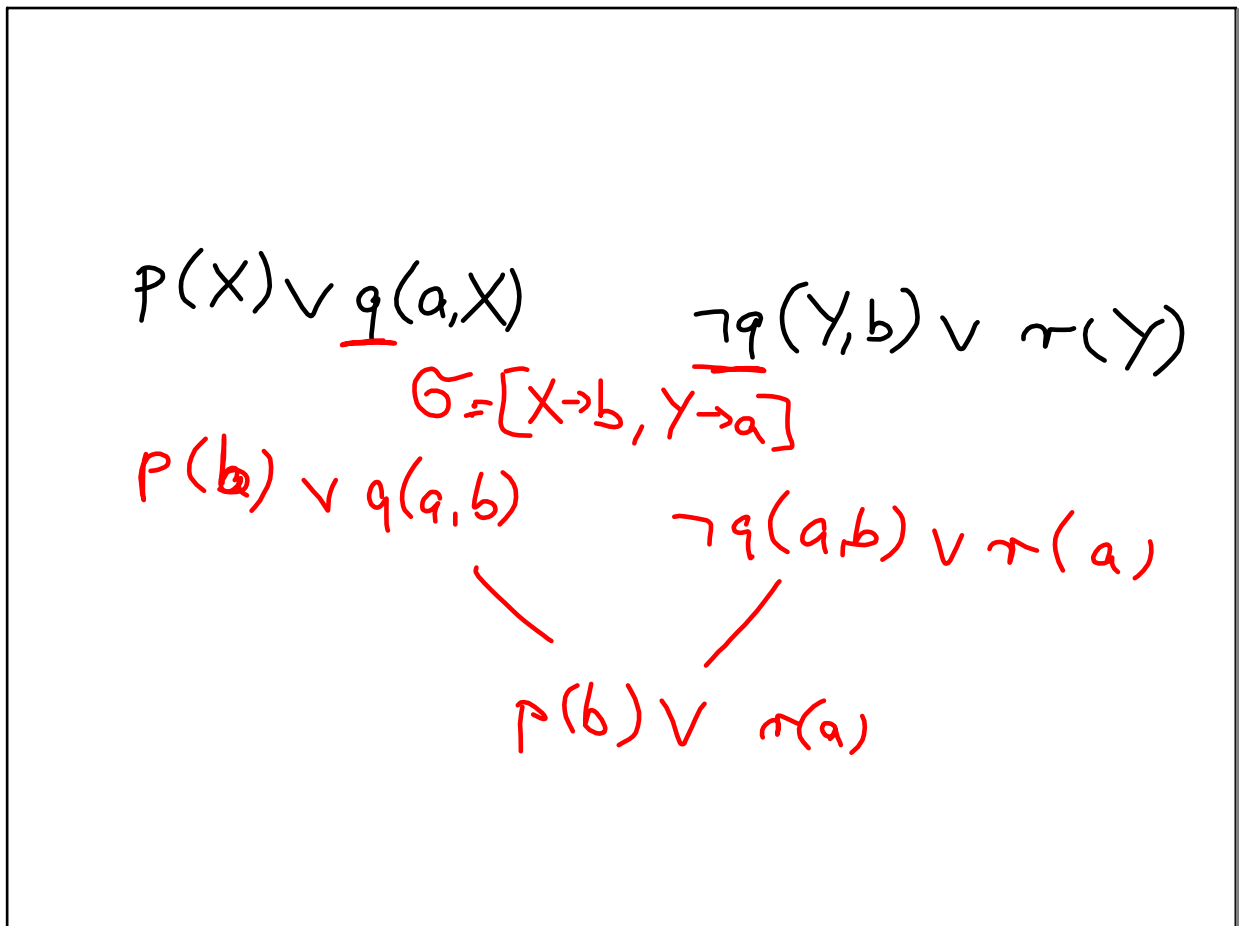
$a?$ $\neg b$ must hold

don't know

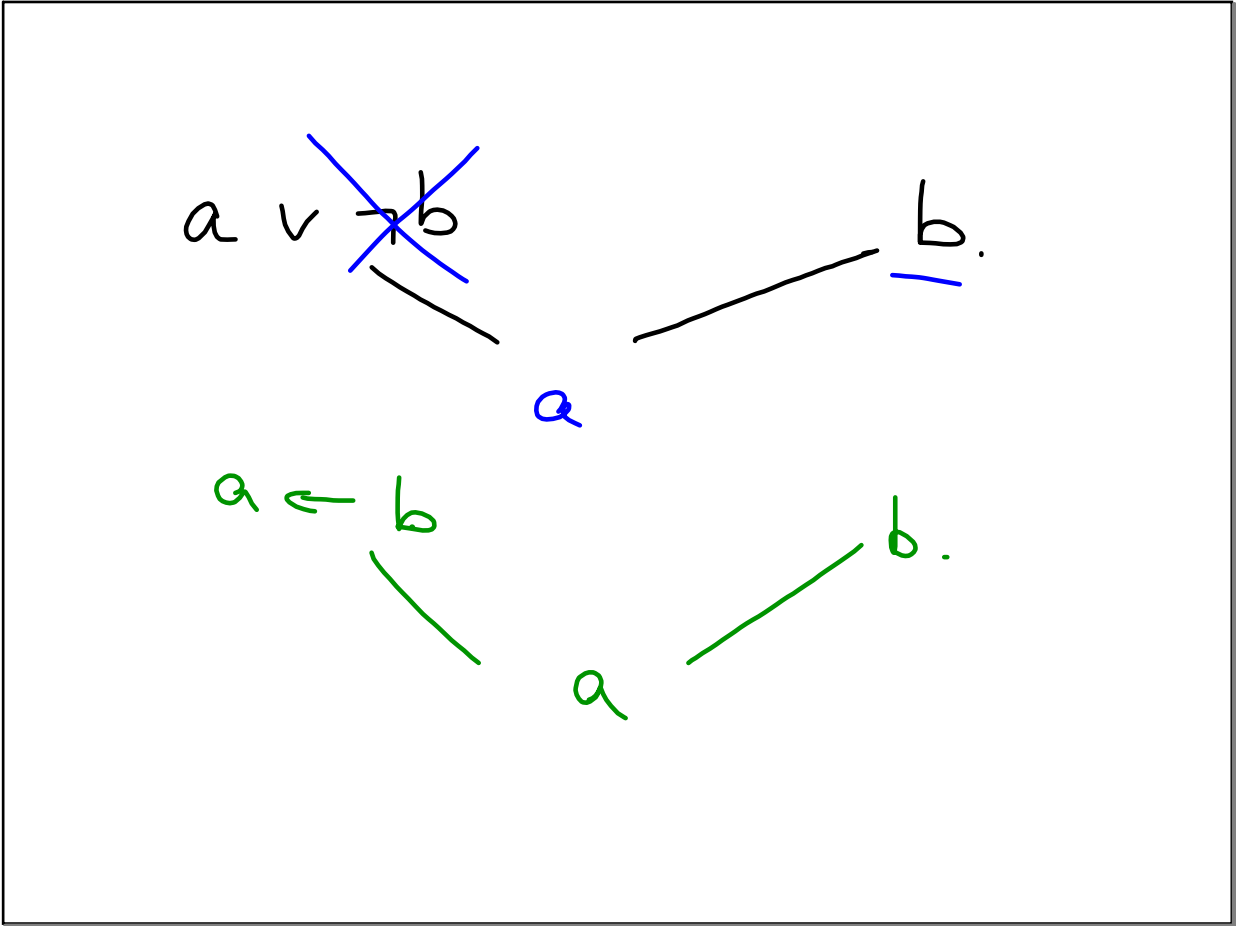
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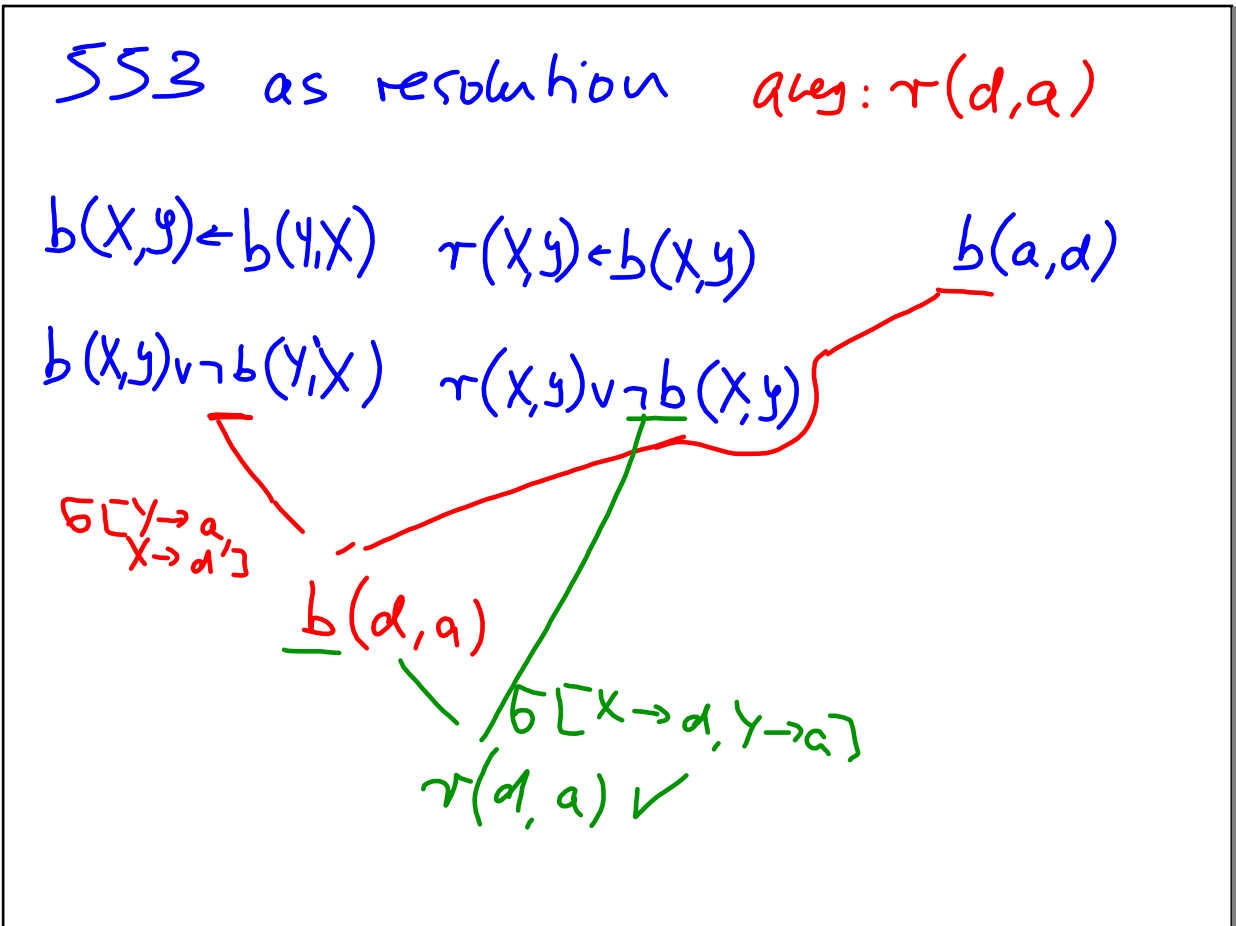
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Mai 22-15:05



Mai 22-15:10



Mai 22-15:13

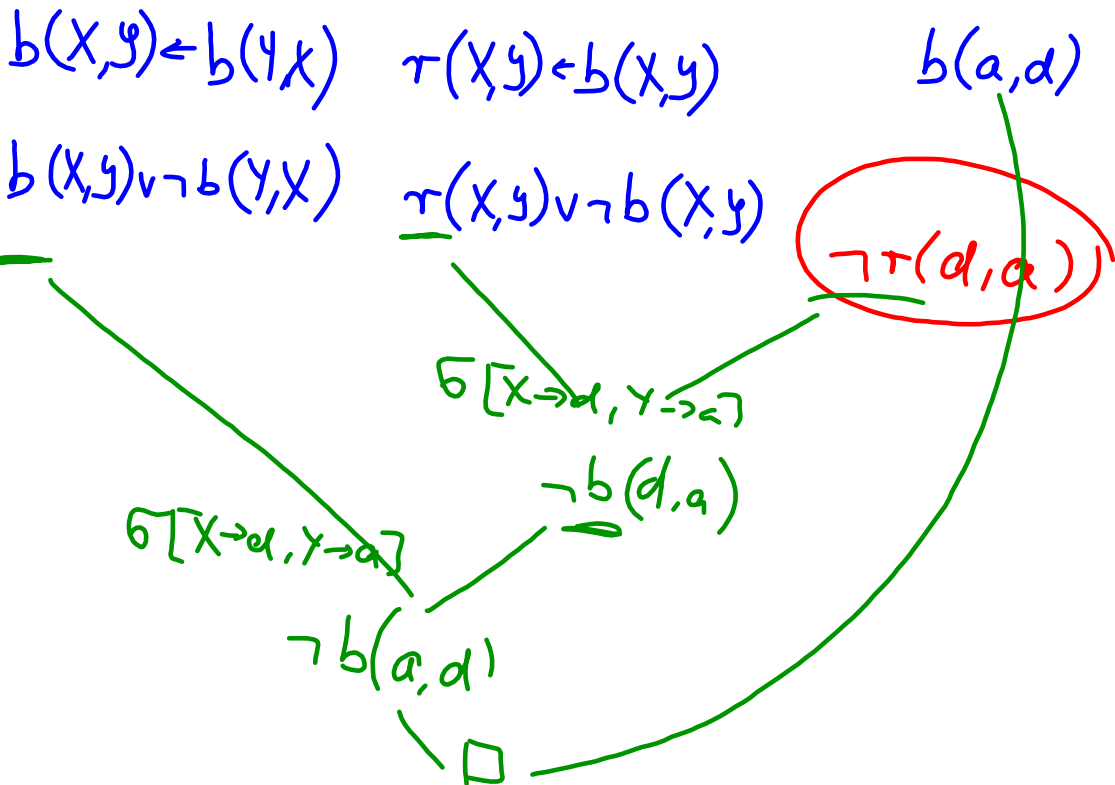
$r(d, a)$

- if $b(d, a)$
- or some X such that
- $r(d, X)$ and $b(X, a)$

→ is the case if $b(d, a)$ in the input facts,
or if we can derive $b(a, d)$
 ↳ if in the input facts ✓
 or

Mai 22-15:15

Query: $r(d, a)$



Mai 22-15:17



Mai 22-15:31