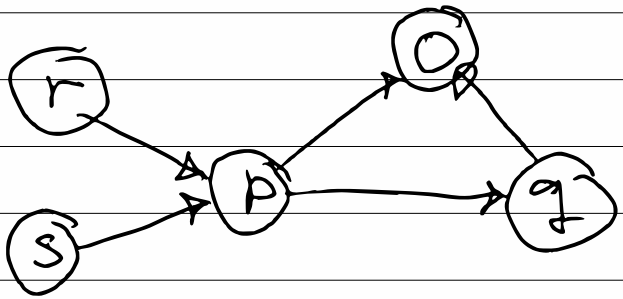
TEK 5010 MAS

Lecture 13: Arguing

Exercise: Arguing 1

Question 1

a) Give an example of a rationally justifiable position for this argument system, if one exist, else justify why none exist.



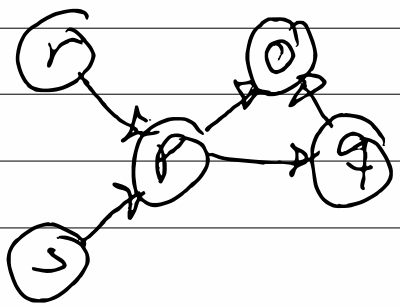
This is Dung-style argumentation system

1) Nodes are arguments
2) Arrows are relations between arguments, arrow from A to B means A attacks B

A rationally justifiable position is typically

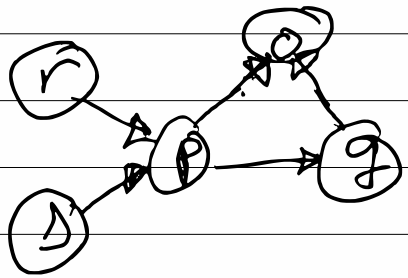
1) Conflict free
2) Mutually defensive
3) Admissible set
4) Preferred extensions
5) Grounded extensions

* Conflict free: A position S is conflict free if no member of S attacks any other member of S



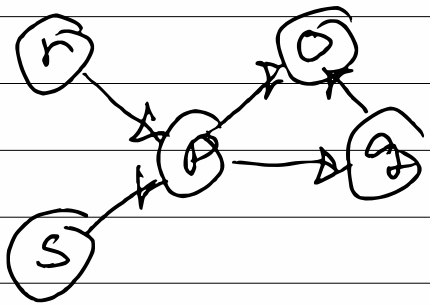
r, s, p, q, o
rq, ro, rs
sq, oo
rsq, rso

* Mutually defensive: A position S is mutually defensive if every element of S that is attacked is defended by some element of S



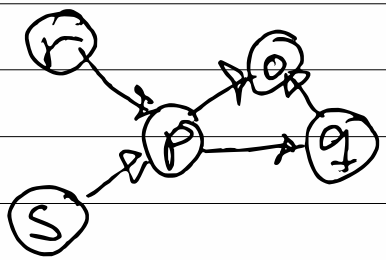
r, s
rq, rs
sq
rsq

* Admissible set: A position S that is conflict free and mutually defensive is an admissible set and internally consistent.



r, s
rq, rs, sq
rsq

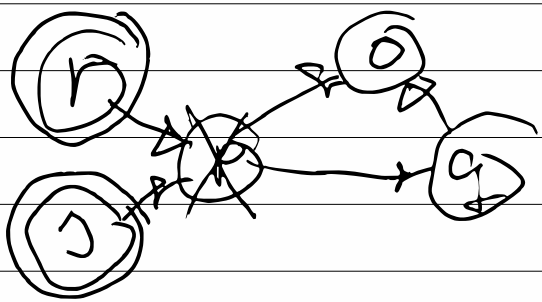
* preferred extension: the set S is admissible but every superset of S is inadmissible



~~r~~, ~~s~~
~~rq~~, ~~rs~~, ~~sq~~
rsq

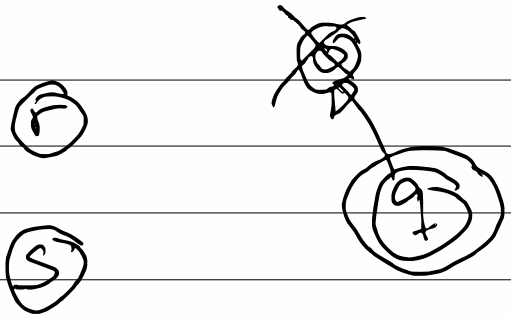
rsq is the preferred extension

* Grounded extension:

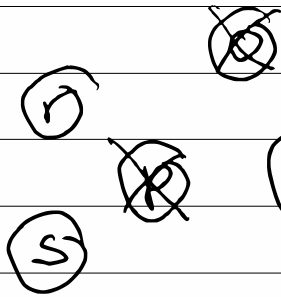


in: r, s

out: p

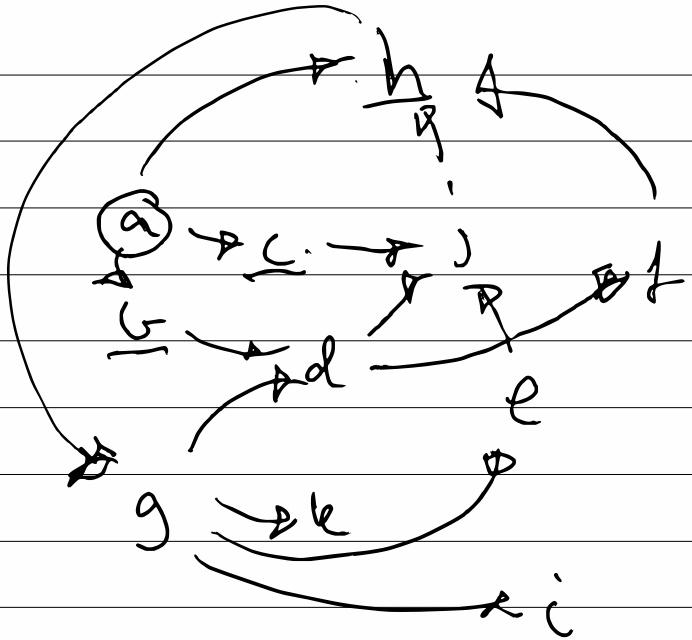


So

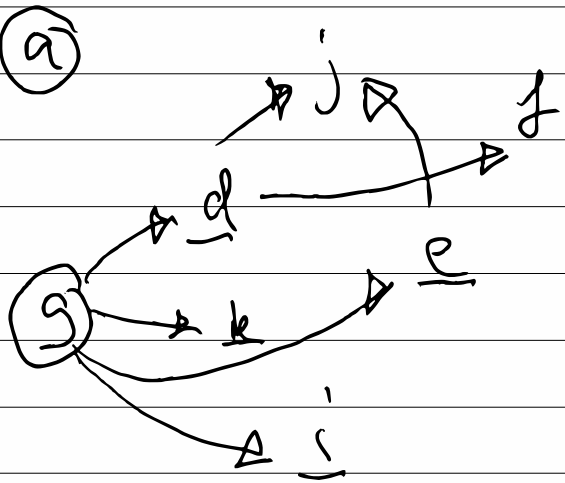


Question 2

a) Explain the status of the arguments by calculating the grounded extensions.



in: a out: b, c, h



in: a, g out: b, c, h, d, k, e, i

(a)

(j) (f)

(g)

in: a, g, j, f out: b, c, h, d, e, k, i