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Ivan Orlov's absurd sentences and inacceptable arguments in argumentation logic

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TALK OUTLINE

1. Introduction.
   a) Embarrassing deliberative argument
   b) Argumentation Logic and its semantic
   c) The problem and its solutions
2. Acceptability, non-acceptability and in-acceptability
   a) Critical questions
   b) Acceptability through NAF
   c) In-acceptability
3. Ivan Orlov's absurd sentences
   a) Ivan Orlov (1886 – ?1936) and his logic
   b) Compatibility and relevance
   c) Φ- and X-provability
4. Conclusion
5. References.

1A. EMBARRASSING ARGUMENT

(P) I will vote for President Jones

(M) I will not vote for President Jones

deliberative

(P1) President Jones is a dignified candidate

(M1) President Jones is not a dignified candidate

(P1.1) President Jones defeated terrorists

?

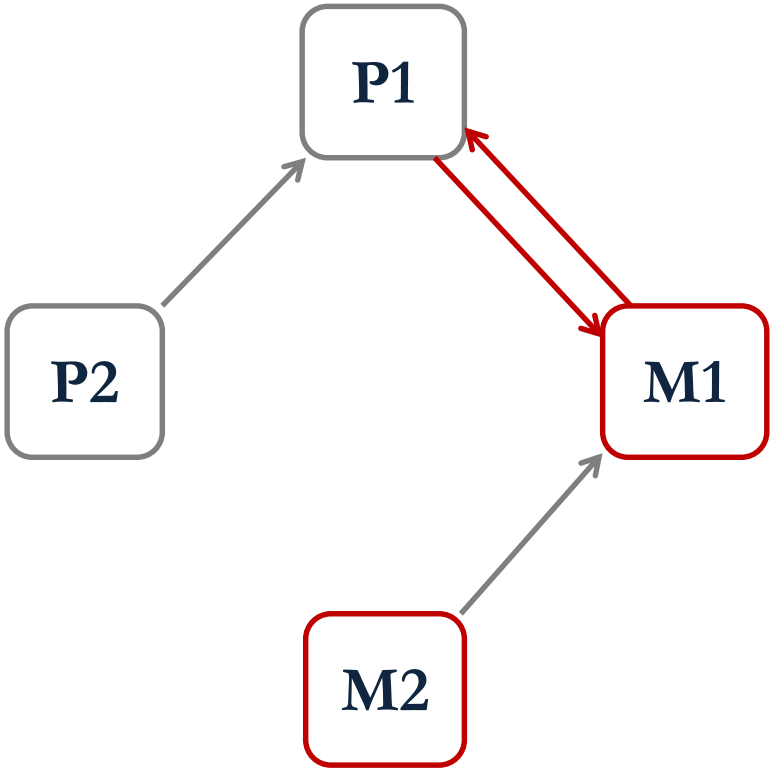
(P2) defeating terrorists enhances dignity

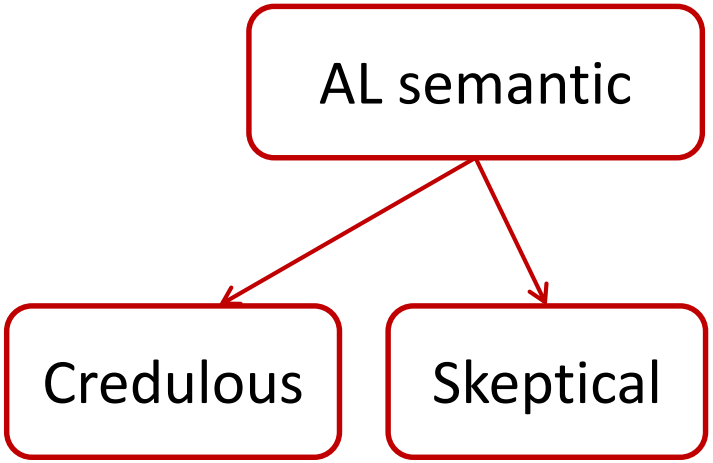
(M2) involvement in sexual scandals declines dignity

(M1.1) President Jones is involved in the sexual scandal

Wag the Dog
(1997, Barry Levinson)

1B. AL SEMANTIC. 'NIXON' DIAMOND…

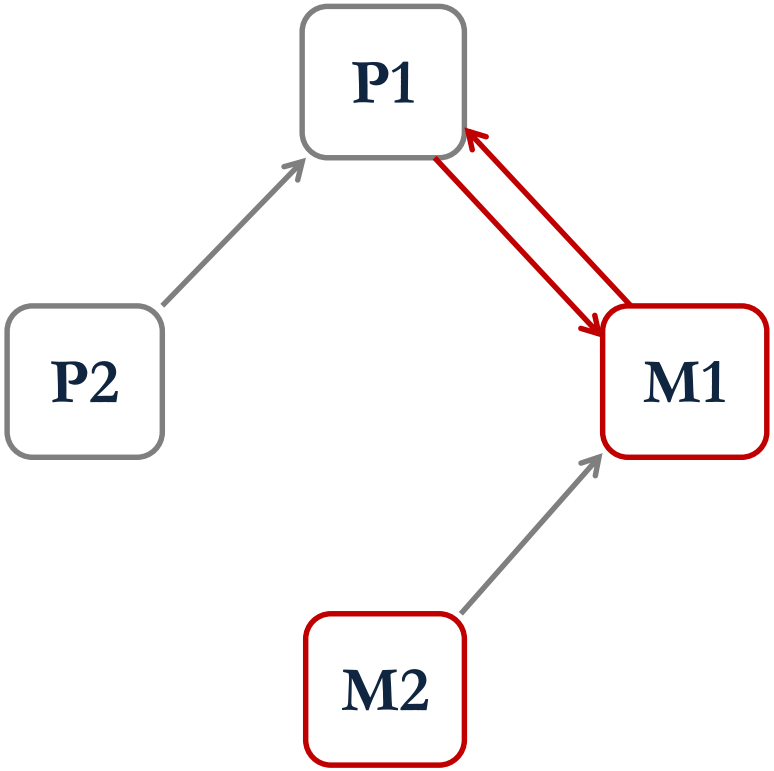


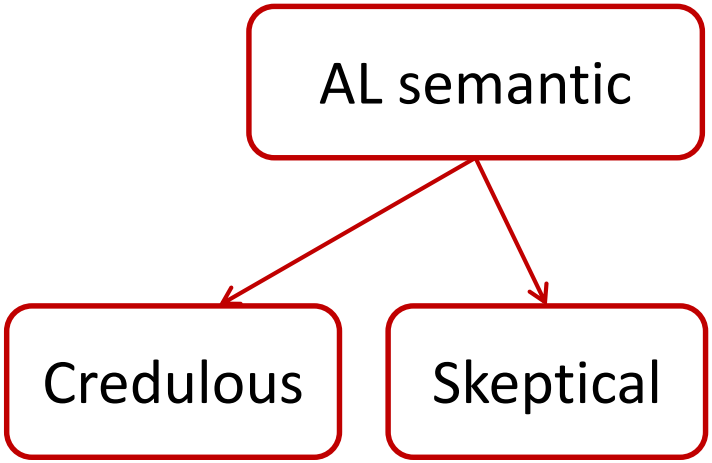


P1: Nixon is a militarist, since he is a Republican, and (P2) Republicans are militarists.

M1: Nixon is an anti-militarist, since he is Quaker, and (M2) Quakers are pacifists.

1B. AL SEMANTIC. 'NIXON' DIAMOND

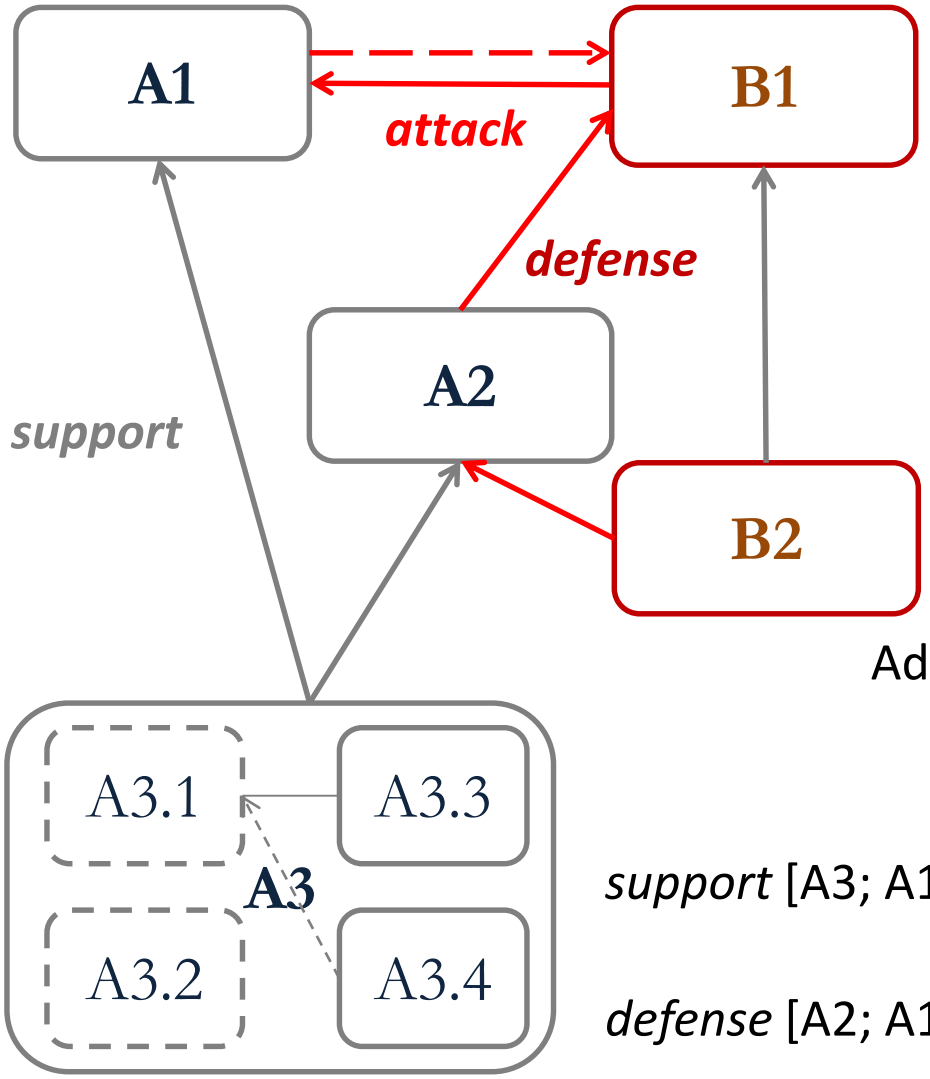




P1: President Jones is a dignified candidate, as he defeated terrorists, and (P2) defeating terrorists enhances dignity

M1: President Jones is not a dignified candidate, as he is involved in the sexual scandal, and (M2) involvement in sexual scandals declines dignity.

1B. ARGUMENTATION LOGIC….



AF = <*Arg*, *attack*>, *attack* ⊆ *Arg* × *Arg*

(B1, A1) ∈ *attack*; *attack* [B1, A1]

Acceptable $\mathbf{A_i}$ w.r.t. **S** ⊆ AF, $\mathbf{A_i}$ ∈ S:
if for each B: *attack* [B, $\mathbf{A_i}$],
there exists $\mathbf{A_j}$ ∈ *S*: *attack* [$\mathbf{A_j}$, B].

Admissible **S** ⊆ AF consists of acceptable $\mathbf{A_i}$.

Dung P. M. (1995)

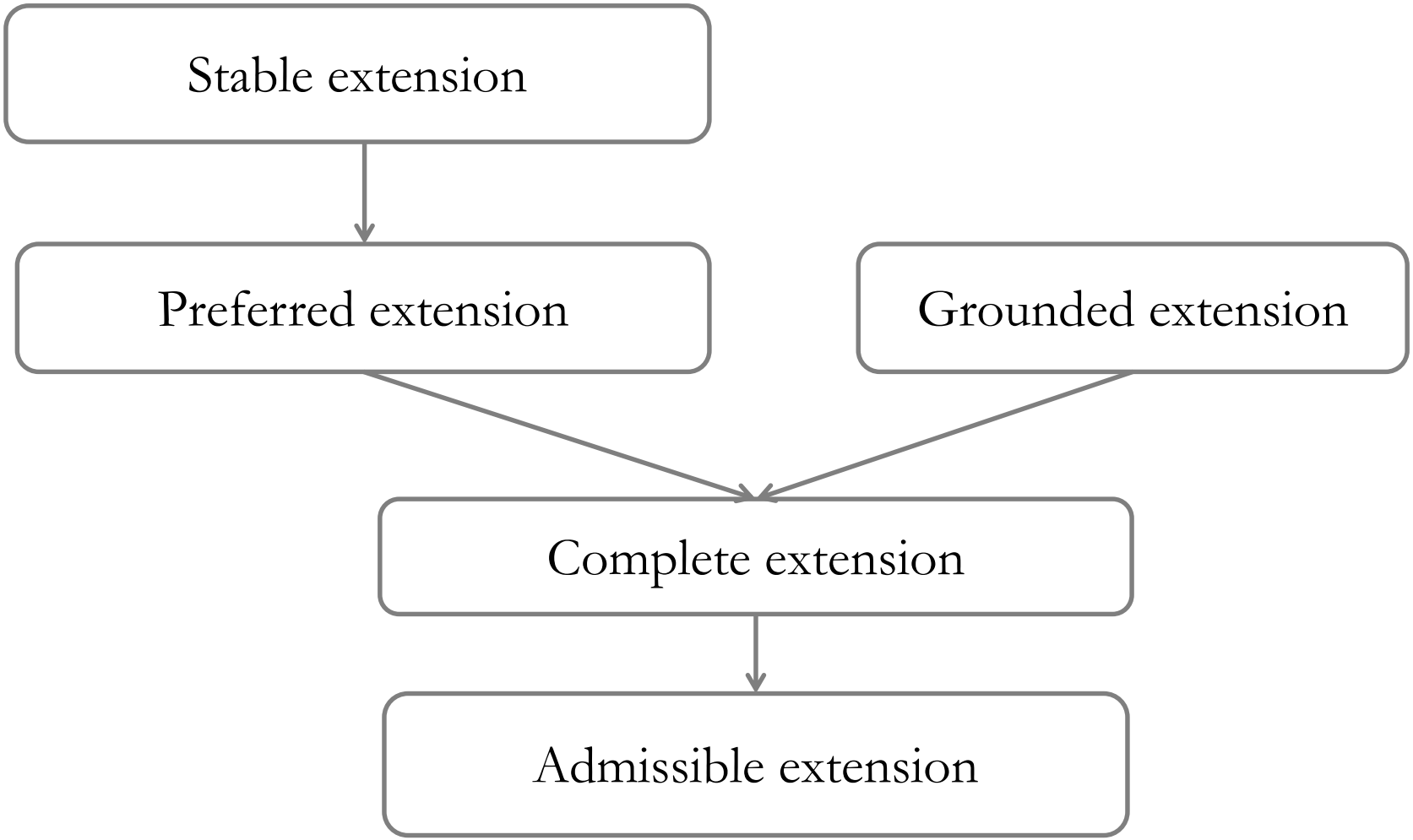
support [A3; A1]:= {*attack* [A3; A1]; *attack* [A1, A3]}= ∅

defense [A2; A1]:= if *attack* [B1; A1], then *attack* [A1, A3]

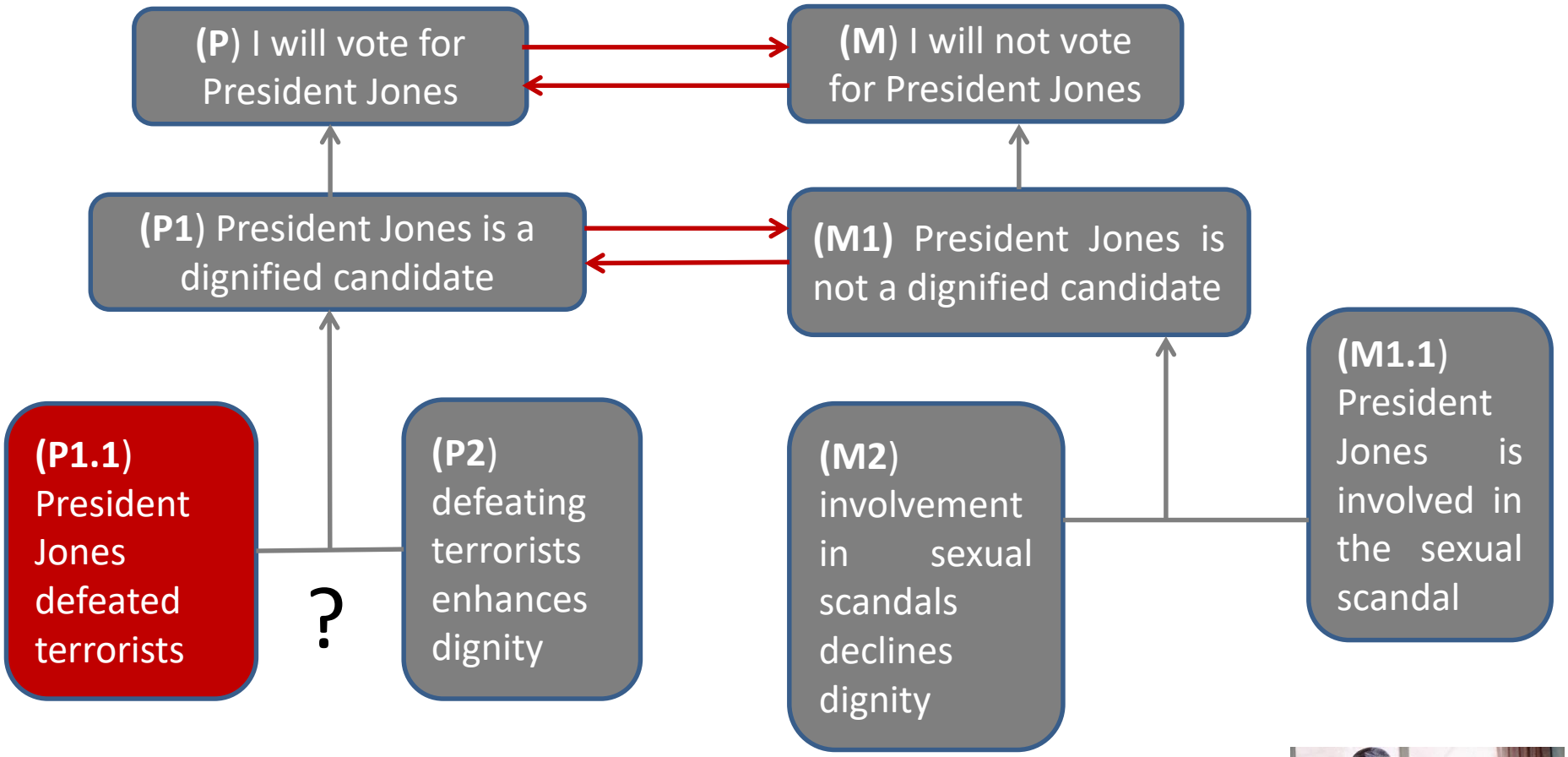
1B. ASPECTS OF PROCEDURAL SEMANTIC

1. Validity. Arguments are ‘valid’ or ‘invalid’ with respect to (their attacks on) other arguments in the framework.
2. Roles. Arguments in the framework can play different roles: attackers, counter-attackers, defenders.
3. Evaluation. Arguments are plausible assumptions for filling the information gaps in the dialog, which may either revise the previous moves, and thus may reinstate defeated arguments, or evaluate the relative weight of other arguments, and thus may defeat newly reinstated arguments again.

1B. ARGUMENTATION LOGIC

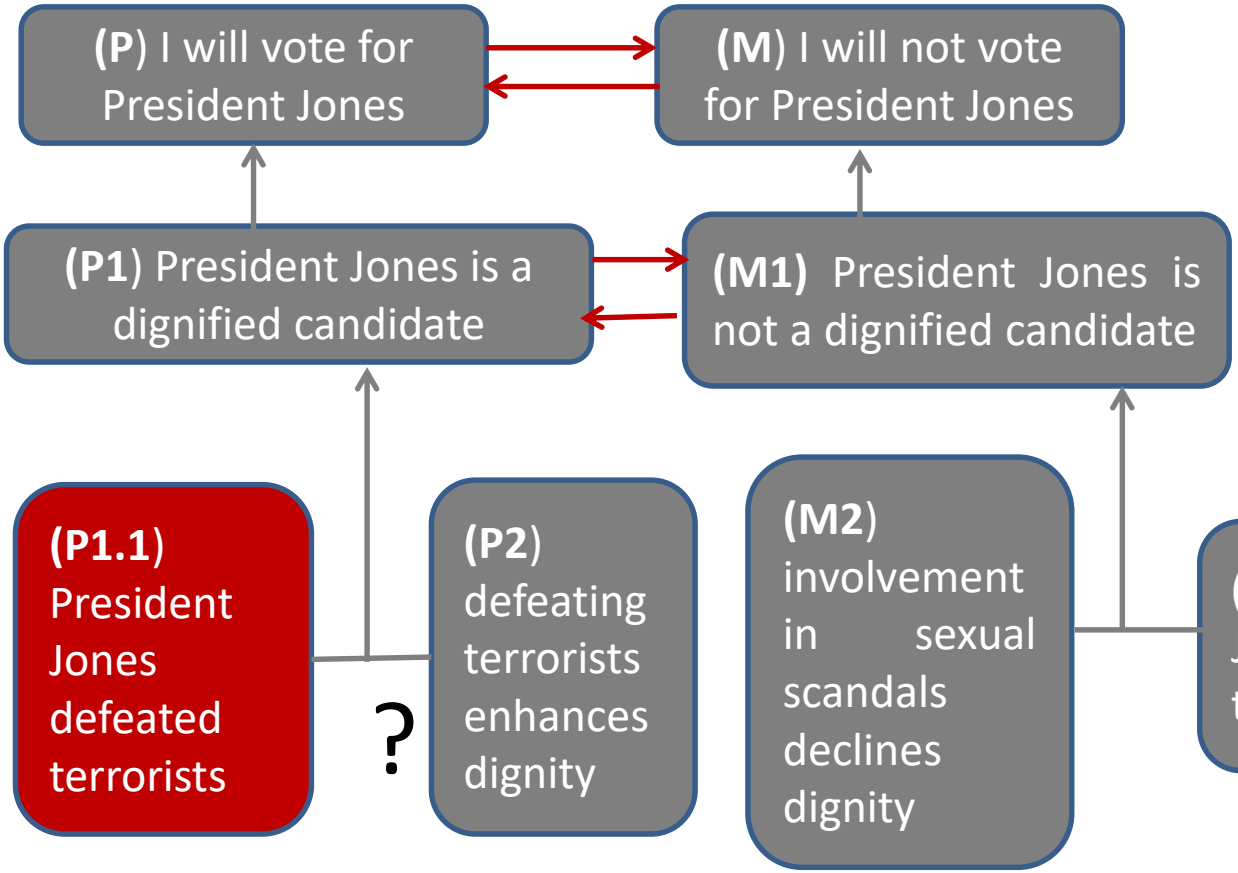


1C. THE PROBLEM



How can a suspicious deliberative argument be rejected in relation to other arguments given the credulous algorithm of AL?

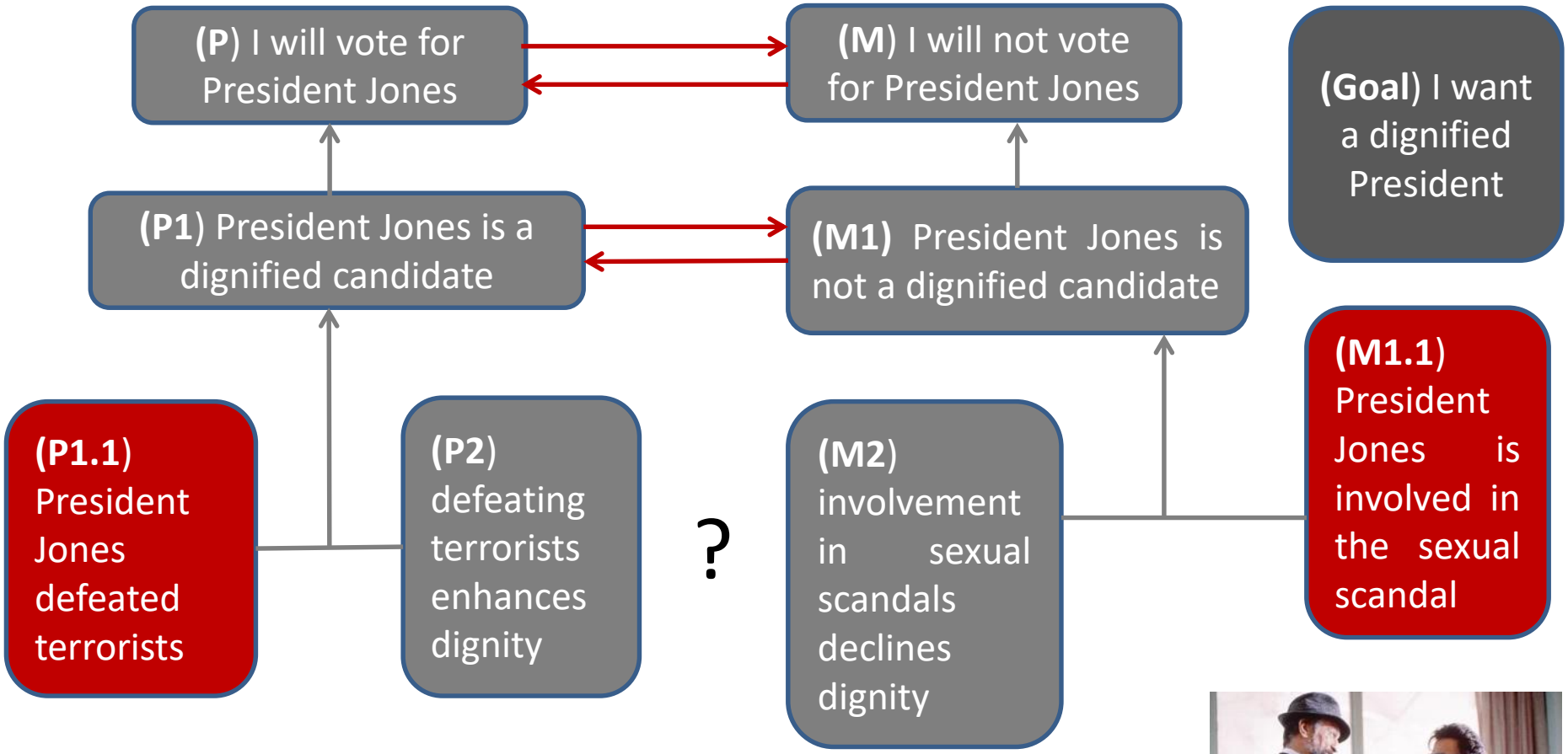
1C. ITS SOLUTIONS



- Critical questions
- Rejection
- Non-acceptability (NAF)
- **In-acceptability**

How can a suspicious deliberative argument be accepted or rejected in relation to other arguments given the credulous algorithm of AL and restrictions on verifying its propositional content?

2A. CRITICAL QUESTIONS



Does there in fact exist situation as described by P1.1 \ M1.1?
Given P1.1 \ M1.1, does P \ M achieve **Goal**?

THEORY OF REJECTED PROPOSITIONS

Słupecki J., Bryll G., U. Wybraniec–Skardowska. Theory of rejected propositions. Studia logica 29 (1) 1971, 75-115.

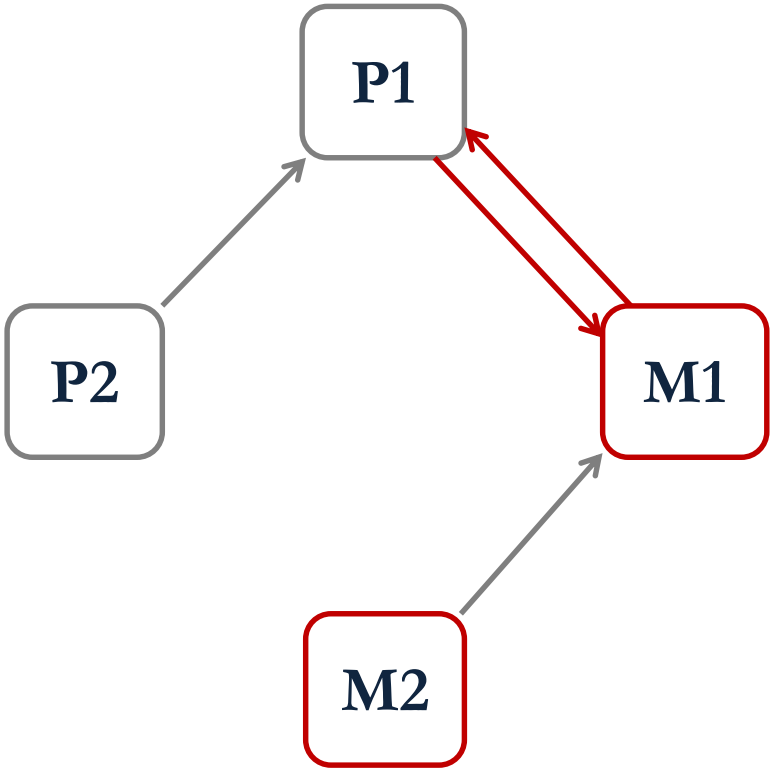
- The rule of rejection by detachment MT
- The rule of rejection by substitution: if β (α), β rejected, then α is rejected

The system is *decidable*, if every its expression which is not its these is rejected on the ground of finite number of axiomatically rejected expressions;

The system is *consistent* of none of its thesis is rejected.

<F, Cn+, Cn->

2B. ACCEPTABILITY THROUGH NAF

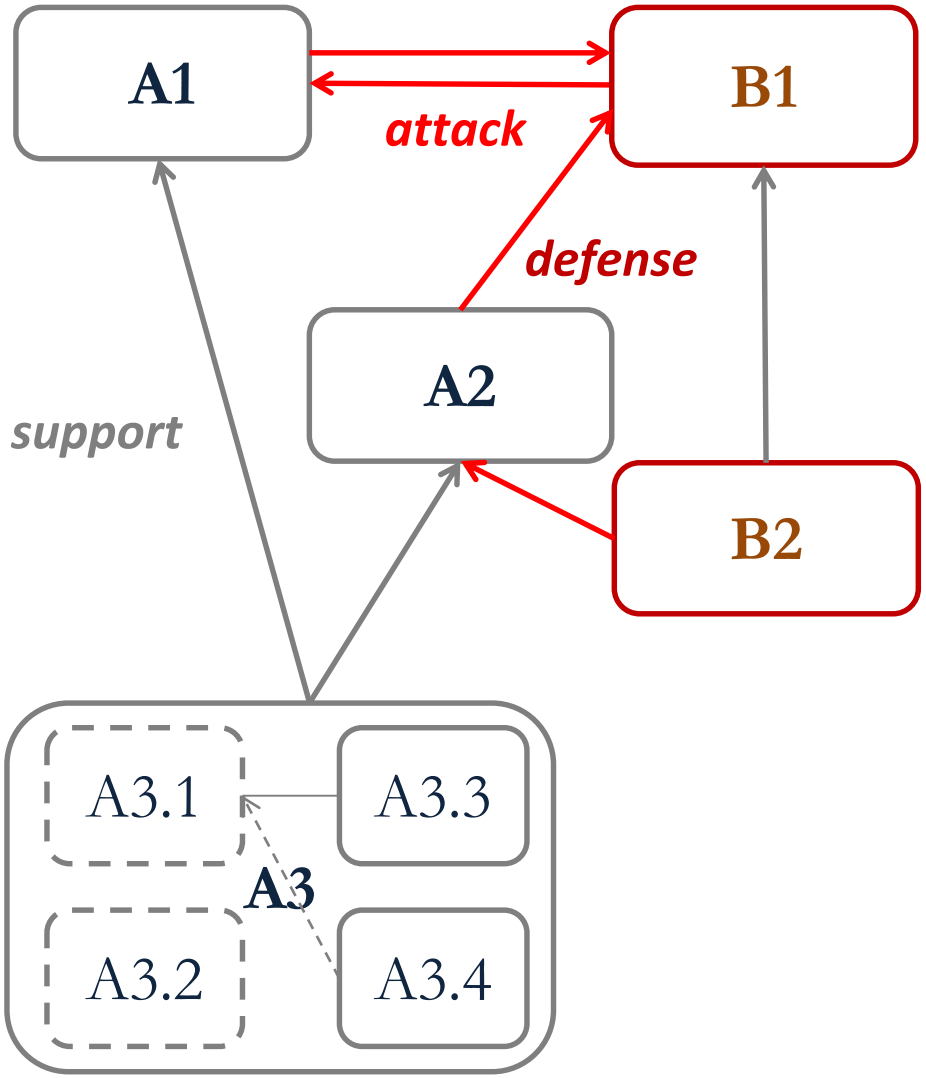


- ✓ Negation As Failure:
  - ‘not-*p* holds, iff *p* fails to hold.
- ✓ NAF-wise acceptability:
  - *H* is acceptable, iff any attack, *A*, against *H* is not acceptable.
- ✓ NAF-wise non-acceptability:
  - *H* is non-acceptable, iff there is an attack, *A*, against *H* is acceptable.

P1: President Jones is a dignified candidate, as he defeated terrorists, and (P2) defeating terrorists enhances dignity

M1: President Jones is not a dignified candidate, as he is involved in the sexual scandal, and (M2) involvement in sexual scandals declines dignity.

ACCEPTABLE AND NON-ACCEPTABLE ARGUMENTS



Conclusions of AL are sentences supported by **acceptable arguments** and for which no acceptable argument exists supporting the contrary position, i.e. the negation of the sentences.

Non-acceptable arguments support the sentences the contrary of which are supported by an acceptable argument.

Kakas A., Mancarella P., Toni F., (2018)

3A. IVAN ORLOV (1886 – ?1936) AND HIS LOGIC

The researcher's thought developed under the symbol of the search for a special meaningful logic of natural science, which should correspond to the spirit of dialectics. (Бажанов 2002, 50)

This logic is different in that, firstly, the conclusions are always more reliable than at least one of the premises. (Орлов 1924, С. 70).

The requirement of compatibility of sentences is sufficient, and the requirement of their joint truth is excessive. (Орлов 1924, С. 70).

3B. COMPATIBILITY AND RELEVANCE

For the possibility of deductive inference, the requirement of the truth of premises is, generally speaking, not necessary; enough if a weaker requirement is satisfied - **compatibility of the premises**. True consequences can be deduced from false propositions, but from premises that are incompatible with each other, conclusions are generally impossible. It follows that the requirement of compatibility of propositions is sufficient, and the requirement of their joint truth is excessive. A proposition a “is compatible” with proposition b, if a does not imply the negation of b (Орлов 1928, 264)

1. Emotional \ psychological
2. Topical
3. Probative
4. Dialectical

Walton D., Relevance in argumentation (2003)

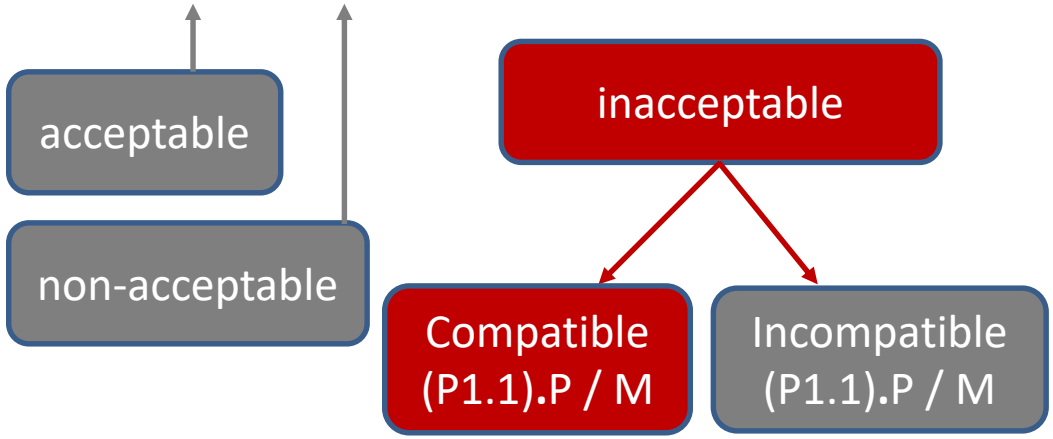
3B. AXIOMS

- Compatibility $\neg (a \to \neg b) =: a.b$ (def 1)
- Incompatibility $\neg (a.b) =: a \mid b$ (def 2)
- (A 1) $a \to \neg \neg a$;
- (A 2) $\neg \neg a \to a$;
- (A 3) $a \to a.a$, where $a.a = \neg (a \to \neg a)$
- (A 4) $(a \to b) \to (\neg b \to \neg a)$;
- (A 5) $\{a \to (b \to c)\} \to \{b \to (a \to c)\}$;
- (A 6) $(a \to c) \to \{(a \to b) \to (a \to c)\}$;
- (A 7) MP

3C. Φ- AND X-PROVABILITY…

- provable a : = Φ (a), absurd a (=provable a's falsity) : = X (a)
- (A 8) $\Phi(a) \rightarrow a$;
- (A 9) $\Phi(a) \rightarrow \Phi(\Phi(a))$;
- (A 10) $\Phi(a \rightarrow b) \rightarrow \{\Phi(a) \rightarrow \Phi(b)\}$.

- $\Phi(a) \neq \neg\Phi(a)$; $X(a) \neq \neg X(a)$
- $\Phi(a) \vee X(a))$; $\neg \Phi(a) \wedge \neg X(a)$;



An important feature of intuitionism is that in the works of intuitionists, the concepts defined do not depend directly on the defining propositions a, b, c .., but on the functions of the latter, of the following form: "a is reliable / a is unreliable," "a is provable / reducible to absurdity," " absurdity of a is absurd". (Орлов 1928, 263)

3C. INACCEPTABLE ARGUMENTS

(P) I will vote for President Jones

(M) I will not vote for President Jones

(P1) President Jones is a dignified candidate

(M1) President Jones is not a dignified candidate

(P1.1) President Jones defeated terrorists

(P2) defeating terrorists enhances dignity

(M2) involvement in sexual scandals declines dignity

(M1.1) President Jones is involved in the sexual scandal

Acceptable A_i w.r.t. $S \subseteq AF$, $A_i \in S$:

if for each B: *attack* [B, A_i], there exists $A_j \in S$: *attack* [A_j, B].

Inacceptable A_i w.r.t. $S \subseteq AF$, $A_i \in S$, if A_i if *attack* [B, A_i] = $\varnothing$.

CONCLUSION

(P) I will vote for President Jones

(M) I will not vote for President Jones

(P1) President Jones is a dignified candidate

(M1) President Jones is not a dignified candidate

(P1.1) President Jones defeated terrorists

(P2) defeating terrorists enhances dignity

(M2) involvement in sexual scandals declines dignity

(M1.1) President Jones is involved in the sexual scandal

How can a suspicious deliberative argument be accepted or rejected in relation to other arguments given the credulous algorithm of AL and restrictions on verifying its propositional content?

1. Evaluate it **inacceptable** ⇒ 2. Ask a critical question or attack it with a counter argument ⇒ 3. Check its **relevance (compatibility)** ⇒ 4. Accepted, iff defended, otherwise non-accepted.

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