Preferred Semantics as Socratic Discussion

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Socratic Discussion

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Answer me this. As soon as one man loves another, which of the two becomes the friend? the lover of the loved, or the loved of the lover? Or does it make no difference?

None in the world, that I can see

How? Are both friends, if only one loves?

I think so

Indeed! is it not possible for one who loves, not to be loved in return (...) ?

It is.

Nay, is it not possible for him even to be hated? (...) Don't you believe this to be true?

Quite true.

Well, in such a case as this, the one loves, the other is loved.

Just so.

Which of the two, then, is the friend of the other? The lover of the loved, whether or not he be loved in return, and even if he be hated, or the loved of the lover? or is neither the friend of he other, unless both love each other?

The latter certainly seems to be the case, Socrates.

If so, I continued, we think differently now from what we did before. (...)

Yes, I'm afraid we have contradicted ourselves.

Traditional Dialogue vs. Socratic Dialogue

P: claim tr

"I think that there will be a tax relief."

O: why tr

"Why do you think so?"

P: because pmp ⇒ tr

"Because of the fact that the politicians made a promise."

O: concede tr

"OK, you are right."

Traditional Dialogue vs. Socratic Dialogue

P: claim tr

"I think that tr."

O: but-then tr ⇒ bd

"Then you implicitly also hold that bd."

P: concede bd

"Yes I do."

O: but-then bd ⇒ feu

"Then you implicitly also hold that feu."

P: concede feu

"Yes I do."

O: but-then feu ⇒ ¬tr

"Then you implicitly also hold that ¬tr."

P: concede ¬*tr*

"Oops, you're right; I caught myself in..."

“because” versus “but-then”

reasoning goes backward	reasoning goes forward
proponent constructs path	opponent constructs path
originates from *true*	leads to *false*
both parties become committed	only proponent becomes committed

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definition

admissible labelling:

if argument is in then all its attackers are out

if argument is out then it has an attacker that is in

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proposition

An argument is in a preferred extension

iff it is in an admissible set

iff it is labelled in by an admissible labelling

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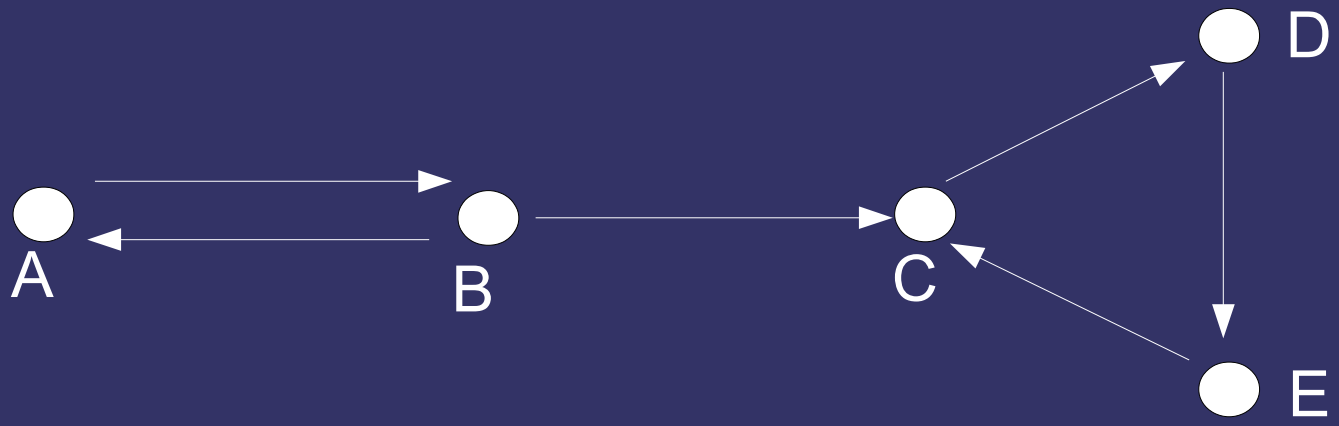

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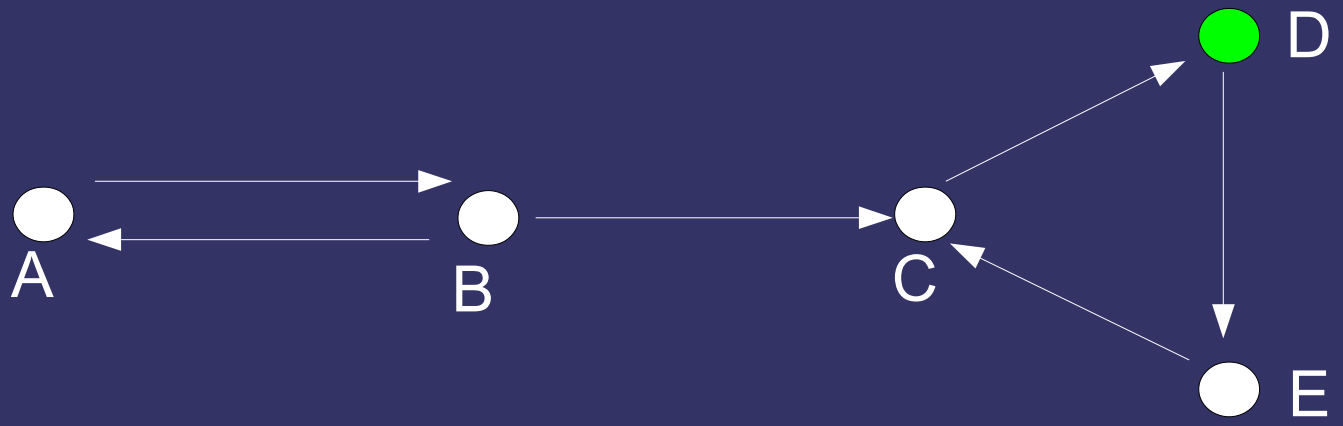

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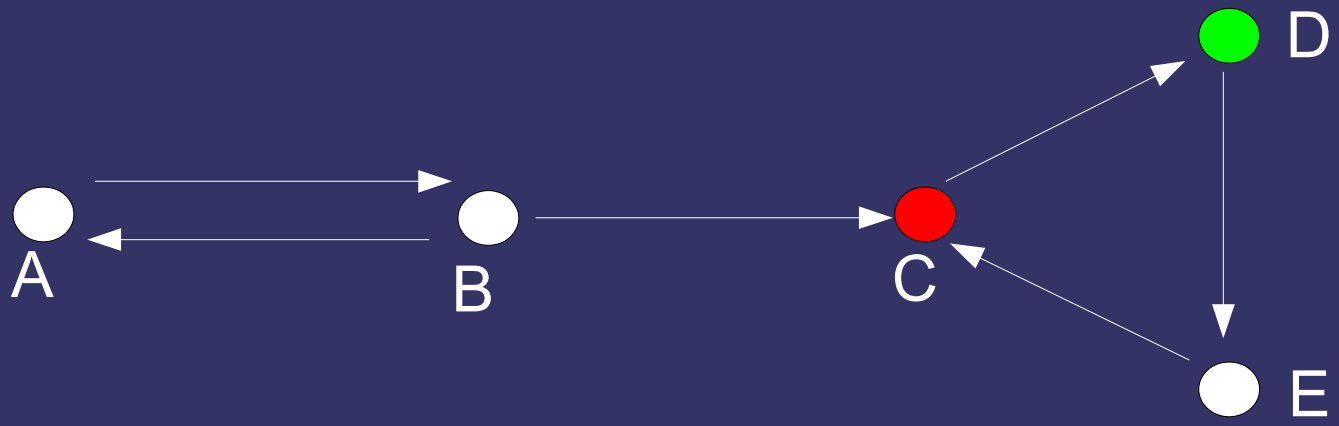

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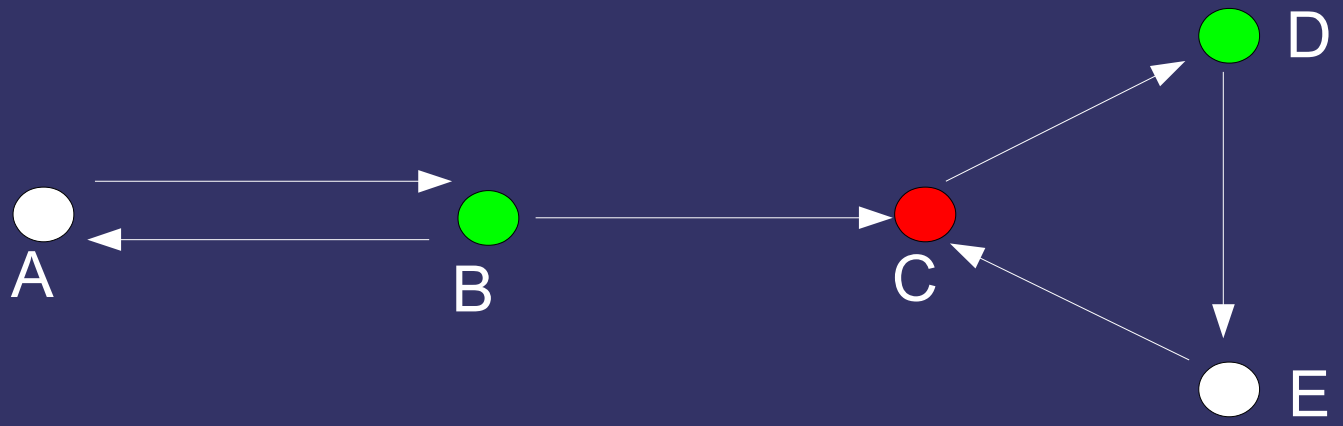

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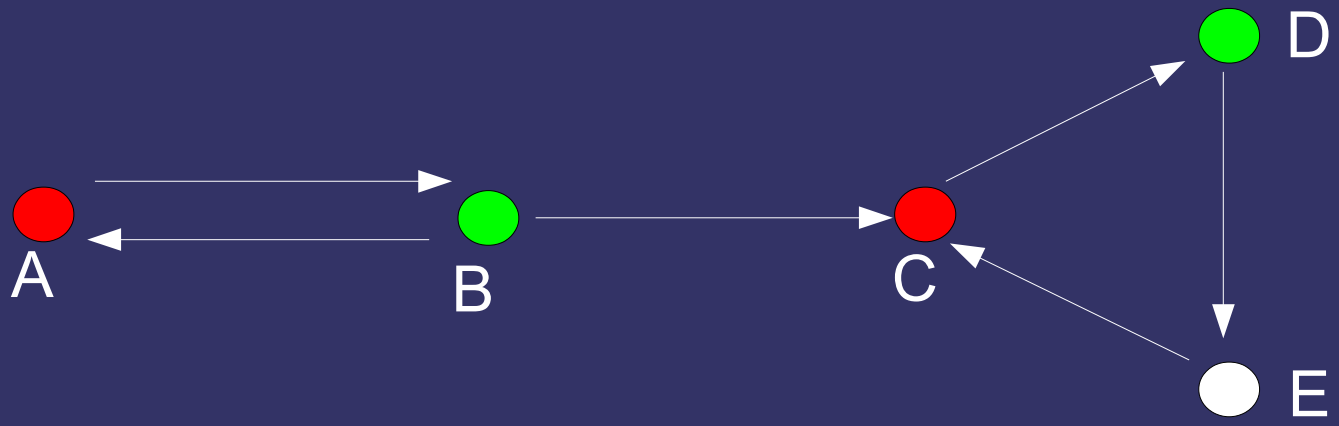

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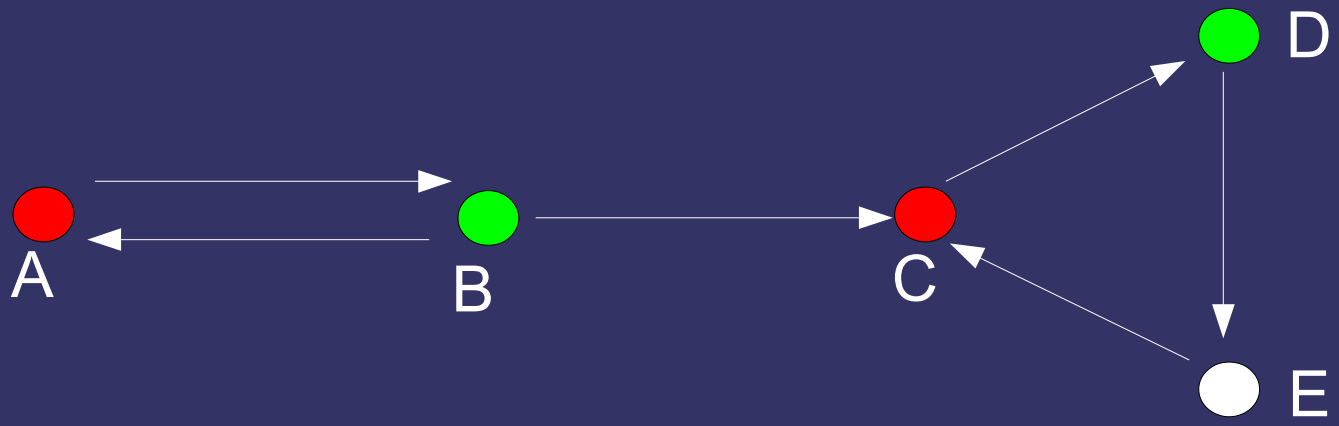

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(1) Each move of M (except the first) contains an attacker of the directly preceding move of S.

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(2) Each move of S
contains an attacker of <u>some</u> previous move of M.

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S: out(C) "But then in your labelling it must also be the case that D's attacker C is labelled out. Based on which grounds?"
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(3) S is not allowed to repeat his moves.

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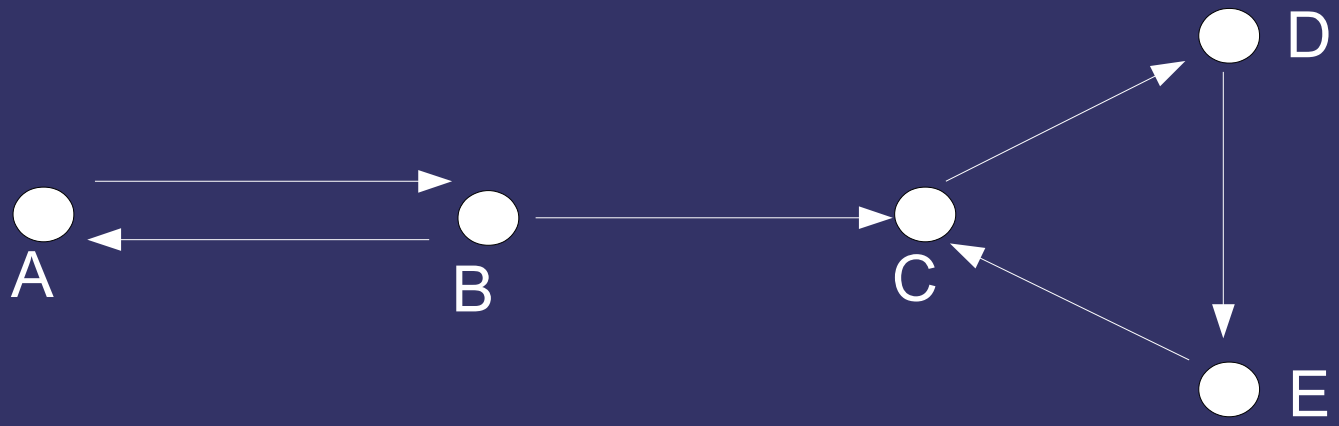

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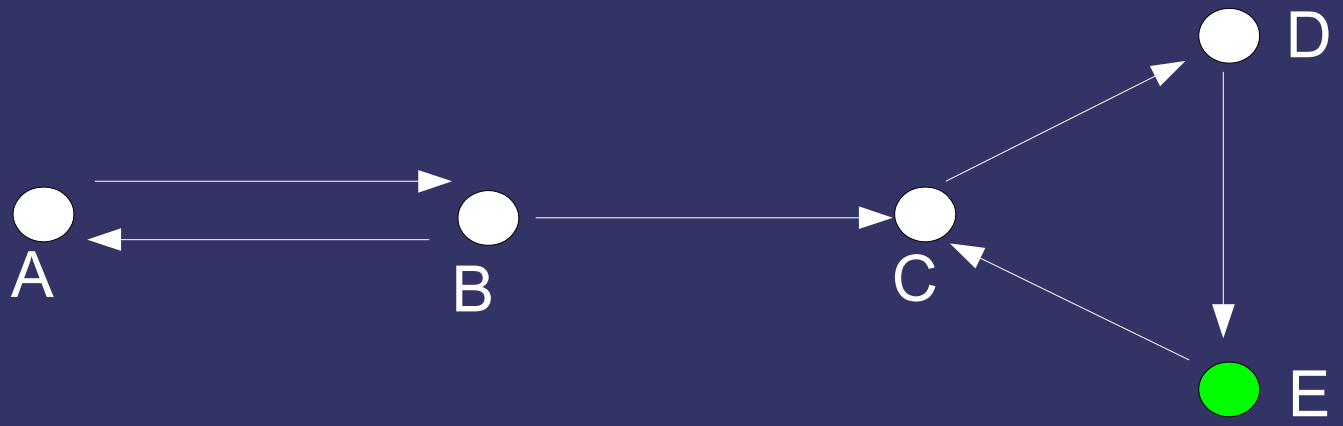

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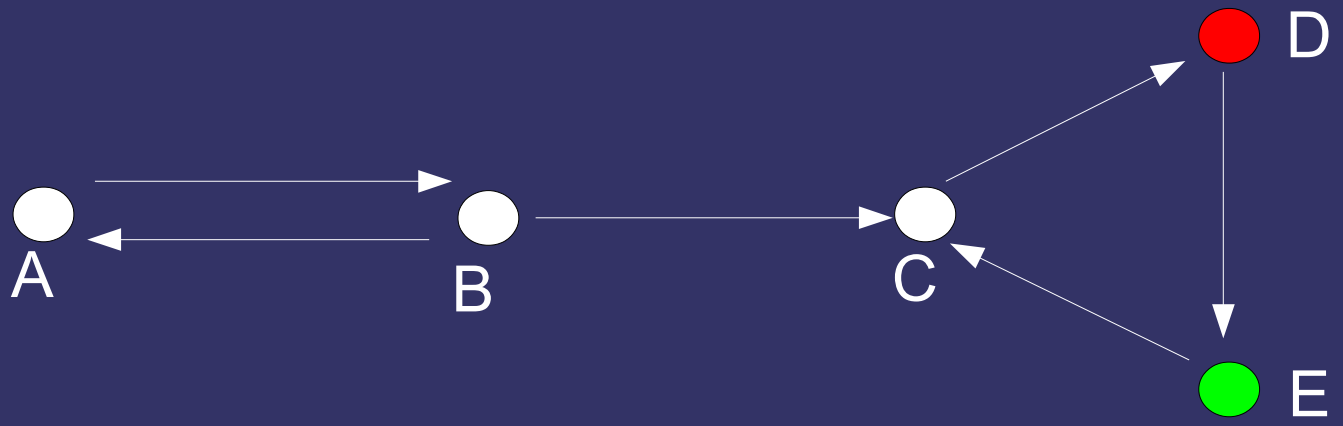

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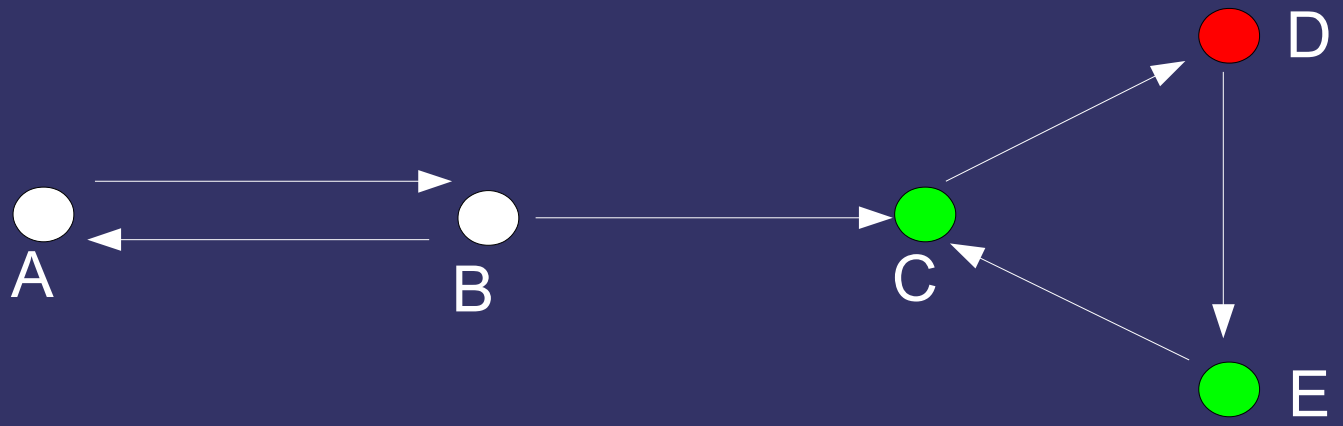

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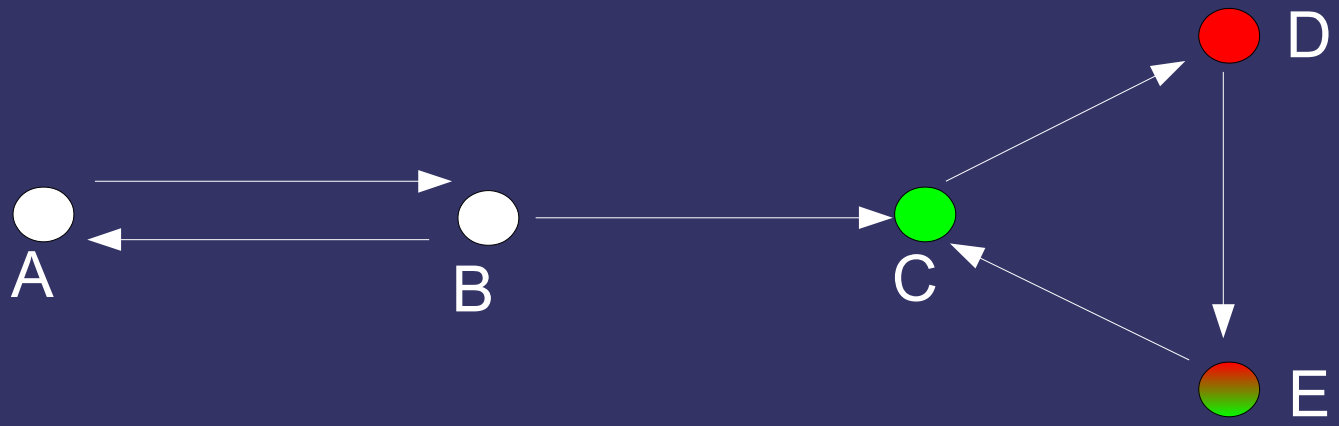

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(5) If S uses an argument previously used by M, then S wins the discussion.

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(7) If M cannot make a move anymore, then S wins the discussion.

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(8) If S cannot make a move anymore, then M wins the discussion.

Preferred Semantics as Socratic Discussion

THEOREM

Argument A is labelled in by at least one admissible labelling iff M can win the Socratic discussion game (for A).

Preferred Semantics as Socratic Discussion

THEOREM

Argument A is in at least one preferred extension iff M can win the Socratic discussion game (for A).

Complete Semantics as Socratic Discussion

THEOREM

Argument A is in at least one complete extension iff M can win the Socratic discussion game (for A).

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- argumentation:

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- argumentation: based on notion of *justification*
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- discussions can be used by the system to *explain*
  its answer to the user
- allows for *dynamic* and *user-based* updating
  of the underlying knowledge base

Semantics Overview

- idea: argumentation is about what can be defended in rational discussion
- different semantics express different types of rational discussion (socratic, persuasion, ...)

Semantics Overview

- *preferred*
  Socratic discussion

- *stable*
  Socratic discussion
  in which Socrates can change topic

- *ideal*
  Socratic discussion
  that cannot be successfully argued against
  by another Socratic discussion

- *grounded*
  persuasion discussion