

Revising Logic

Graham Priest

Introduction

Logica Docens

Logica Utens

Logica Ens

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Three Questions

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1 Can logic be revised?

Three Questions

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- 1 Can logic be revised?
- 2 If so, can this be done rationally?

Three Questions

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- 1 Can logic be revised?
- 2 If so, can this be done rationally?
- 3 If so, how?

Three Senses of 'Logic'

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1 *Logica Docens*

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2 *Logica Utens*

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Where We're Going

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1. *Logica Docens*

1. Logica Docens

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Logica Docens: Can it be revised?

Darapti

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All *As* are *Bs*

All *As* are *Cs*

So:

Some *Bs* are *Cs*

Explosion

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No *As* are *Bs*
Some *Bs* are *As*
So:
All *As* are *As*

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Logica Docens: Were these revisions rational?

1. Logica Docens

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Logica Docens: What was the rational procedure?

Logica docens as theory

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- Pure logic vs applied logic

Logica docens as theory

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- Pure logic vs applied logic
- Applied logic is a theory of validity.

Validity

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- A theory of validity might be formulated:

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- A theory of validity might be formulated:
- in terms of necessary truth preservation

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- A theory of validity might be formulated:
- in terms of necessary truth preservation
- in terms of constraints on rational beliefs

Validity

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- A theory of validity might be formulated:
 - in terms of necessary truth preservation
 - in terms of constraints on rational beliefs
 - in terms of the meanings of words
 - with truth conditions
 - with rules of proof

Criteria of Theory Choice

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- adequacy to the data

Criteria of Theory Choice

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- adequacy to the data
- simplicity
- non-(ad hocness)
- unifying power
- fruitfulness

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- Wason Card Test

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- Wason Card Test

- A K 4 3

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- Wason Card Test

- A K 4 3

- If there is an A on one side, there is an even number on the other.

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- Wason Card Test

- A K 4 3

- If there is an A on one side, there is an even number on the other.
- Which are the fewest cards that must be turned over to check this condition?

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- Wason Card Test
- A K 4 3
- If there is an A on one side, there is an even number on the other.
- Which are the fewest cards that must be turned over to check this condition?
- A
- A and 4

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- Wason Card Test
- A K 4 3
- If there is an A on one side, there is an even number on the other.
- Which are the fewest cards that must be turned over to check this condition?
- A
- A and 4
- A and 3

2. Logica Utens

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Logica Utens: Can it be revised?

2. Logica Utens

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Logica Utens: Can revision be rational?

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Logica Utens: What is the rational procedure?

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3. *Logica Ens*

3. Logica Ens

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Logica Ens: Can it be revised?

Two Theories of Validity

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- Something is valid if God says it is.
- Something is valid if 90% of dentists say so

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- If validity is defined model-theoretically or proof-theoretically, the answer is arguably: No.

- If validity is defined model-theoretically or proof-theoretically, the answer is arguably: No.
- But the meanings of the words used to express these facts could change.

3. Logica Ens

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Meaning change: can this happen?

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Meaning change: can it happen rationally, and how?

Summary of Conclusions

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- Logica docens can be changed rationally by the standard mechanism of theory change.

Summary of Conclusions

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Logica Ens

- Logica docens can be changed rationally by the standard mechanism of theory change.
- Logica utens can be changed rationally by bringing it into line with the most rational theory.

Summary of Conclusions

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Logica Ens

- Logica docens can be changed rationally by the standard mechanism of theory change.
- Logica utens can be changed rationally by bringing it into line with the most rational theory.
- One's view of whether logica ens can change depends one's theory of validity.

Summary of Conclusions

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Logica Ens

- Logica docens can be changed rationally by the standard mechanism of theory change.
- Logica utens can be changed rationally by bringing it into line with the most rational theory.
- One's view of whether logica ens can change depends one's theory of validity.
- If this is to be characterised either proof- or model-theoretically, it cannot.

Summary of Conclusions

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Logica Ens

- Logica docens can be changed rationally by the standard mechanism of theory change.
- Logica utens can be changed rationally by bringing it into line with the most rational theory.
- One's view of whether logica ens can change depends one's theory of validity.
- If this is to be characterised either proof- or model-theoretically, it cannot.
- But the meanings involved in expressing these facts may change, and change rationally.

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THE END