Paradoxes about knowledge 2

PHIL2511 Paradoxes
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Admin

Required reading for this seminar:

i) Olin, ‘Believing in surprises’ (Ch 3 of Olin’s book *Paradox.* See course website)

ii) Sainsbury, Sec 5.4

Optional reading: Kripke ‘On two paradoxes of knowledge’ pp. 27-39. See course website)

Required reading for next seminar: Sainsbury, Ch 1

Tutorial: First tutorial next week

The situation

The background situation in the surprise examination paradox:

i) S is an ideally rational student

ii) The teacher makes the following announcement to S: “An exam will be held on exactly one of the days Monday to Friday, and if the exam is held on day D, then you will not be justified in believing this before that day”

The situation (cont)

iii) Since S is ideally rational, he satisfies the following:

A1) If S is justified in believing p1,…,pn which jointly strongly confirm q, then he sees that p1,…,pn jointly strongly confirm q

A2) On Sunday evening, and throughout the next week, S remembers what the teacher said, and also remembers that she is generally reliable and trustworthy

The situation (cont)

(A3) On Sunday evening, and on any evening of the week, S knows what evening it is and, on any evening of the week, he remembers whether the examination has been held on that or any previous day of the week.

(A4) Throughout the week, the student has no source of evidence relevant to the teacher's announcement other than that given by (A2) and (A3).

The situation (cont)

(A5) IF a) S is justified in believing p1,…,pn, b) p1,…,pn jointly imply q, and c) S sees this, THEN S is justified in believing q

(A6) IF a) S is justified in believing p1,…,pn, b) p1,…,pn strongly confirm q, c) S sees this and has no other evidence relevant to q, THEN S is justified in believing q

The paradoxical argument

Each of (1-5) are claimed to follow from (A1-6):

(1) If the only exam of the week is held on Friday, then on Thursday evening the student will justifiably believe that it will be held on Friday

(2) If the only exam of the week is held on Thursday, then on Wednesday evening the student will be justified in believing (1), and therefore also justified in believing that the exam will be on Thursday.

The paradoxical argument (cont)

(3) If the only exam of the week is held on Wednesday, then on Tuesday evening the student will be justified in believing (2), and therefore also justified in believing that the exam will be on Wednesday.

(4) If the only exam of the week is held on Tuesday, then on Monday evening the student will be justified in believing (3), and therefore also justified in believing that the exam will be on Tuesday.

(5) If the only exam of the week is held on Monday, then on Sunday evening the student will be justified in believing (4), and therefore also justified in believing that the exam will be on Monday.

The paradoxical argument (cont)

It follows from (1-5), however, that no surprise exam will be given.

Hence, in this situation, no surprise exam can be given.

However, this is clearly false!

Quine’s solution

Quine: The paradoxical argument is unsound since S is not justified in believing the teacher’s announcement (TA).

Quine’s Arg: Suppose the exam is held on Friday. Then S will know on Thursday night that the exam has not occurred previously. However, since he is not justified in believing the TA, S is unable to justifably infer that the exam will occur on Friday. Hence, (1) is false.

Response to Quine

The student can justifiably know that the TA is true since the teacher is highly reliable.

This is particularly plausible if we change the example so the number of days is 30, or we look at the card version of the paradox.

Kripke: “If a teacher were to announce a surprise exam to be given within a month, a student who did badly could not excuse herself by saying that she did not *know* that there was going to be an exam” p. 33

The anti-JJ solution

As well as (A1-6), we need further assumptions about the abilities S has for the argument to be valid.

In particular, we need to assume that the student is able to justifiably believe propositions about what he justifiably believes.

Self-awareness and (1)

We don't need to assume this self-awareness ability to derive (1) from (A1-6).

A sketch of why: (1) follows from sentences like (a-c), which follow from (A1-6).

a) S justifiably believes on Sunday evening that there will be exactly one exam during the week
b) S retains this justified belief during the week
c) S justifiably believes, on every evening, what day of the week it is and whether an exam has been given

Self-awareness and (2)

In order to derive (2), we need to be able to derive (2’).

(2’) On Wednesday evening, S will justifiably believe (1)

But (2’) does not follow from sentences like (a-c). Instead it follows from sentences like (a*-c*), which don’t follow from (A1-6).

a*) S justifiably believes [put in (a) here]

b*) S justifiably believes [put in (b) here]

c*) S justifiably believes [put in (c) here]

Adding (JJ)

In order to derive (a*-c*) from (A1-6), we need to assume something like (JJ).

(JJ) If S is justified in believing p then S is justified in believing that he is justified in believing p

The anti-JJ solution: JJ is false

Response 1

Maybe (JJ) is false in all its generality.

But it is plausible that some simple instances of (JJ) can be true for an ideal rational student like S. And this is all we need to derive (2), (3),(4) and (5).

Arg for response 1: We are able to justifiably believe some propositions about what others justifiably believe, otherwise we wouldn't be able to do epistemology. So S should be able to justifiably believe relatively simple propositions about what she justifiably believes.

Response 2

There are variants of the surprise examination paradox that require even simpler instances of (JJ)

Examples (see Olin pp. 50-51):

a) The designated student paradox

b) The sacrificial virgin paradox

The paradoxical argument fixed up

If we don’t want to add an unrestricted version of (JJ) to the assumptions, we can add assumptions that ascribe a much more limited self-awareness ability to S, and yet still get the paradoxical conclusion.

To do this, we add (A7-A10) to assumptions (A1-A6).

The paradoxical argument fixed up (cont)

(A7) Throughout the week, S is justified in believing A1-A6

(A8) Throughout the week, S is justified in believing A7

(A9) Throughout the week, S is justified in believing A8

(A10) Throughout the week, S is justified in believing A9

Olin’s solution

Olin: (A6) is false

Exercise for tutorial: Carefully read section ‘The epistemological approach’ in Olin.

Is Olin right?

We will discuss this in the tutorial

Kripke

- If the number of days is 1, then we don’t know that the teacher’s announcement is true
- If the number of days is high enough then we do know at the beginning that the teacher’s announcement is true
- But we lose the knowledge as the days go by and there is still no exam
- So by the day before the last day, if the exam still hasn’t happened, we don’t know that the announcement is true

The knower paradox
(See sec 5.4 Sainsbury)

A: K(A is false)

where ‘K(…)’ means ‘The class knows that…’.

Note: Sainsbury uses slightly different, but equivalent, terminology

Sainsbury writes: ‘As we might put it “The class knows that this very announcement is false”’(Sainsbury, p. 115)

The paradoxical reasoning

1. Suppose A is true

    2. K(A is false)   (def of A)

    3. A is false   (what is known is true)

4. If A is true then A is false (summarising 1-3)

5. A is false   (from 4)

6. ‘K(A is false)’ is false (from 5 + def of A)

7. ‘K(A is false)’ is true (5 + what is proved is true)

Lines 6 and 7 are contradictory!

Solution 1

A is unintelligible: it does not say anything (perhaps because of its self-referentiality)

Sainsbury: 'What is it that it claims cannot be known? If we say it claims that it itself cannot be known, we seem to be flailing in thin air rather than genuinely answering the question' (p 115)

Given this solution, A is neither true nor false, and (5) does not follow from (4)

Response to solution 1

There is another version of the paradox in which the problematic sentences are clearly intelligible:

X utters ‘What Y will say next is something you can know to be false’

Y utters ‘What X has just said is true’

Both utterances considered by themselves are intelligible. So both utterances are intelligible.

But we can still derive a contradiction (see p115-6, Sainsbury)

Solution 1 reconsidered

X’s utterance of ‘What Y will say next’ doesn’t refer to anything, just like ‘The present king of France’ doesn’t refer to anything.

But ‘What Y will say next is something you can know to be false’ is not nonsense, just as ‘The present King of France is bald’ is not nonsense.

Or at least, it isn’t nonsense in the same way “ogaboego” is.

Frege’s theory

Frege: ‘The present king of France is bald’ doesn’t express a proposition, and hence is neither true nor false

Given Frege’s theory, sol 1 holds that ‘What Y will say next is something you can know to be false’ does not express a proposition, and is neither true nor false

Given this, neither X nor Y say anything

The knower paradox reinstated

We can change the example to

X utters: ‘Y will say one and only one thing, and it will be something you can know to be false’

Y utters: ‘X has said one and only one thing, and it is something you can know to be false’

In this case, both X and Y appear to express propositions. Let p be the proposition expressed by X, and let q be the proposition expressed by Y

The paradoxical reasoning

1 Suppose q is true

2.1 p is true

2.2 You can know q to be false

3 q is false (what is known is true)

4 If q is true then q is false (summarising 1-3)

5 q is false (from 4)

6.1 p is false (from 5)

6.2 You cannot know q to be false (from 6.1)

7. You can know p to be false (5 + what is proven is known)

The three epistemic principles underlying the paradoxical reasoning

(EK1) If $K(\phi)$ then ϕ

(EK2) IF K(P1,…,Pn), and C is provable from P1,…,Pn THEN K(C)

(EK3) K(If $K(\phi)$ then ϕ)

Evaluation of EK1-3

EK1 and EK3 are both clearly true

EK2, however, is false: we do not know all the infinitely many things that could be proved from what we know.

Solution 2: Reject EK2

Schemas

EK1-3 are schemas.

To get a sentence from EK1, for example, we need to replace ϕ with a sentence.

A sentence obtained in this way from a schema is called an instance of the schema.

EK1-3 are true if all their instances are true.

The paradox reinstated

We can reinstate the paradox by replacing EK2 with the weaker

EK2*: What is provable from something known is capable of being known by a fully rational subject

Solution 3

What is at fault is whatever that is wrong with the predicates ‘is true’ and ‘is false’ which give rise to the liar paradox.

(L) This sentence is false

Whatever solves the liar paradox, will solve the knower paradox.

Example

One solution of the liar paradox is to say that ‘is true’ and ‘is false’ are defective or badly defined

Given this solution to the liar paradox, solution 3 says that the knower paradox is also due to the fact that ‘is true’ and ‘is false’ are defective.

Response

We can formulate a variant of the knower paradox that doesn't involve 'is true' or 'is false'.

A*) The class knows the negation of what is said by

A*

Note: Sainsbury discusses a more complicated variant involving belief which does not involve 'is true' or 'is false'. (see p. 117-119)

Example

i) The negation of what is said by ‘snow is white’ is the proposition that snow is not white

ii) The negation of what is said by ‘the class knows that p’ is the proposition that the class does not know that p

The paradoxical reasoning

0. The negation of what is said by A* is the proposition that the class doesn't know the negation of what is said by A* (def of A*)
1. Suppose the class knows the negation of what is said by A*
   1a. The class knows the proposition that the class doesn't know the negation of what is said by A* (from 0 +1)
   2. The class knows that the class doesn't know the negation of what is said by A* (from 1a)
   3. The class doesn't know the negation of what is said by A* (3, EK1)
4. If (the class knows the negation of what is said by A*) then (the class doesn't know the negation of what is said by A*) (sumarising 1-3)
5. The class doesn't know the negation of what is said by A* (from 4)

The paradoxical reasoning (cont)

5. The class doesn’t know the negation of what is said by A* (from 4)

5a. The class doesn’t know the proposition that the class doesn’t know the negation of what is said by A* (from 0 + 5)

6. The class doesn’t know that the class doesn’t know the negation of what is said by A* (from 5a)

7. The class knows that the class doesn’t know the negation of what is said by A* (5 + if ‘ϕ’ is proved then ϕ)

Lines 6 and 7 are contradictory!