

数理逻辑 (2025 春) 作业答案 - 01

1 论述

- 【刘易斯·卡罗尔】没有什么有趣的诗是不受真正有品味之人欢迎的。现代诗从未摆脱做作。你所有诗的主题都是关于肥皂泡的。做作的诗对真正有品味之人而言不受欢迎。只有现代诗才可能涉及肥皂泡主题。因此，没有任何你的诗是有趣的。
- 原文: (Lewis Carroll) No interesting poems are unpopular among people of real taste. No modern poetry is free from affectation. All your poems are on the subject of soap bubbles. No affected poetry is popular among people of real taste. Only a modern poem would be on the subject of soap bubbles. Therefore none of your poems are interesting.
- 考虑这段文字，从它的前提能够推出它的结论吗？

解答

Step 1. Formalization

Premises :

- (1) $\forall POEM, interesting(POEM) \rightarrow popular_among_people_of_real_taste(POEM)$
- (2) $\forall POEM, modern(POEM) \rightarrow affected(POEM)$
- (3) $\forall POEM, your(POEM) \rightarrow soap_bubbles(POEM)$
- (4) $\forall POEM, affected(POEM) \rightarrow \neg popular_among_people_of_real_taste(POEM)$
- (5) $soap_bubbles(POEM) \rightarrow modern(POEM)$

Conclusion :

- (6) $\forall POEM, your(POEM) \rightarrow \neg interesting(POEM)$

Step 2. Calculation

- (7) $\forall POEM, your(POEM) \rightarrow modern(POEM)$ 【Based on (3)(5)】
- (8) $\forall POEM, your(POEM) \rightarrow affected(POEM)$ 【Based on (2)(7)】
- (9) $\forall POEM, affected(POEM) \rightarrow \neg interesting(POEM)$ 【Based on (1)(3)】
- (6) $\forall POEM, your(POEM) \rightarrow \neg interesting(POEM)$ 【Based on (8)(9)】

2 论述

- “我可以怀疑物理世界是否存在。我甚至可以怀疑我的身体是否真的存在。但我不能怀疑我自己是否存在。所以，我不是我的身体。”
- 原文： ‘I can doubt that the physical world exists. I can even doubt whether my body really exists. I cannot doubt that I myself exist. So I am not my body.’
- 这种推理似乎得到了笛卡尔的《沉思录》的支持（尽管我们可以争论归属）。这个论证有效吗？

解答

莱布尼茨以其一贯的逻辑敏锐性，看出了这个论证是无效的。他写道：“这样推理是不成立的：‘我可以假设或想象没有物质身体存在，但我无法想象我不存在或不思考。因此，我不是物质的，思想也不是身体的某种状态。’我惊讶于笛卡尔这样有能力的人，竟然会把这么多东西建立在如此站不住脚的诡辩之上……一个认为灵魂是物质的人……会承认，你可以怀疑（只要你对什么是灵魂的本质漠不关心）任何物质是否存在。然而，当你清楚地看到你的灵魂存在时，他会承认这一点：你仍然可以怀疑灵魂是否是物质的。但无论怎样拷问，这个论证都无法得出更多结论。”

简而言之，笛卡尔关于我们能够想象的情况的前提，最多只能表明我们能够想象自己与身体是分离的：但这并不足以证明我们实际上与身体是分开的。

解释：

题中的论述可形式化为：

Premises :

- $soul_can_doubt(body)$
- $\neg soul_can_doubt(soul)$

Conclusion :

- $is(soul, body)$

在上述形式化下，假设前提为真，结论不一定就是成立的。即，如果不加入任何其他的条件，前提推导不出结论。直观地，“我怀疑我的身体是否真的存在，我不能怀疑我自己是否存在”与“我和我的身体之间的关系”没有必然联系，因为“怀疑”不能作为区分事物的标准。

原文：

Leibniz, with his typical logical acumen, saw that the argument won't do. He wrote “It is not valid to reason: ‘I can assume or imagine that no corporeal body exists, but I cannot imagine that I do not exist or do not think. Therefore I am not corporeal, nor is thought a modification of the body.’ I am amazed that so able a man [as Descartes] could have based so much on so flimsy a sophism.... Someone who thinks that the soul is corporeal....will admit that you can doubt (as long as you are ignorant of the nature of the soul) whether anything corporeal exists or does not

exist. And as you nevertheless see clearly that your soul exists, he will admit that this one thing follows: that you can still doubt whether the soul is corporeal. But no amount of torture can extort anything more from this argument.”

In short, Descartes’s premisses about what we can imagine to be the case show –at most – that we can imagine that we are distinct from our bodies: and this isn’t sufficient to show that we really are separate from our bodies.