

# Errata to *Philosophy and Model Theory*

Tim Button and Sean Walsh

June 8, 2021

Thanks to Frank Cudec, Mirko Engler, Alex Paseau, and Daryl Sidle for informing us of errata. If you know of any other errata, please contact us at [tim.button@ucl.ac.uk](mailto:tim.button@ucl.ac.uk) and [walsh@ucla.edu](mailto:walsh@ucla.edu).

## Chapter 1

*p.30, just after the marker for footnote 35 in the main text.*

The phrase ‘the left-to-right directions of the biconditionals’ should read ‘the right-to-left directions of the biconditionals’.

## Chapter 2

*p.47, footnote 33.*

The reference should point to Shapiro’s ‘An “*i*” for an *i*: Singular terms, uniqueness, and reference’ (2012, *Review of Symbolic Logic*, 380–415). This item is also missing from the bibliography.

## Chapter 3

*p.72, immediately prior to Proposition 3.10.*

SA should be defined as comprising axioms (Q1)–(Q3) from Definition 1.9.<sup>1</sup>

## Chapter 4

*p.88, proof of Proposition 4.16.*

The entire paragraph starting ‘For reductio’ can be replaced with the following: ‘And in fact  $v(\eta^{\frac{1}{n}}) > v(\frac{1}{\ln \eta})$ , since as we observed earlier  $v(\eta^{\frac{1}{n}})$  strictly decreases as  $n$  increases.’<sup>2</sup>

*p.105, immediately before the last displayed equation.*

The word ‘not’ should be ‘note’.

---

<sup>1</sup> The theory (Q1)–(Q2) has a model which comprises multiple copies of  $\mathbb{N}$ . It is therefore incomplete, since e.g. it does not decide the sentence ‘there are at least two elements which are not in the range of the successor function.’

<sup>2</sup> The replaced paragraph does, though, illustrate how one can use the value field to mimic Euler’s application of l’Hôpital’s rule. So we will likely retain it in the text somewhere.

## Chapter 5

*p.118. Proof sketch.*

The sentence 'But neither faithfully interprets the other, since these theories have different  $\Sigma_1$ -consequences, and faithful interpretation requires sameness of  $\Sigma_1$ -consequences', should read 'But  $PA + \neg \text{Con}(PA)$  does not faithfully interpret  $PA$ , since faithful interpretation requires that the interpreted theory prove all the  $\Sigma_1$ -consequences of the interpreting theory'.

## Chapter 6

*p.147, line 9.*

The text 'properties of those structure that are' should read 'properties of those structures that are'.

## Chapter 7

*p.153, last sentence of first full paragraph*

The sentence should read 'In short, it seems like the modelist can answer the Doxological Challenge if she can find a categorical theory.'

## Chapter 8

*p.188, last sentence of proof of clause (1) of Lemma 8.14.*

The phrase should read 'the union of  $< \kappa$  many sets of cardinality  $< \kappa$  has cardinality  $< \kappa$  for regular  $\kappa$ .'

## Chapter 9

*p.209, first sentence of second paragraph of Limited conclusions*

The italicised question should read '*Are you a brain in a vat?*'

## Chapter 10

*p.227, the manifesto statement*

The text 'logical framework of very theories' should read 'logical framework of the very theories'.

*p.230, middle of page*

The text "'0' as canonical' should read "'0' as a canonical'.

## Chapter 11

*p.265. Proof of clause (qp:5).*

Replace the text from ‘so there is some  $y' E_2 y \subseteq_2 \text{ord}_2(y)$ ’ to the end of the proof of (qp:5) with the following: ‘so there is some  $y' E_2 y$  such that  $R(v', y')$ . Instantiating the induction hypothesis with  $\text{ord}_1(v')$ ,  $v'$ ,  $y'$ , and  $x'$ , there is some  $z' \subseteq_2 \text{ord}_2(y')$  such that  $R(x', z')$ . Moreover,  $z' E_2 \text{ord}_2(y)$ ; this holds since  $y' E_2 y$ , so that  $z' \subseteq_2 \text{ord}_2(y') E_2 \text{ord}_2(y)$  by Proposition 8.25(3). Now, using Levelling<sub>2</sub>, let  $z = \{z' E_2 \text{ord}_2(y) : (\exists x' E_1 x)R(x', z')\}_2$ ; by what we just showed,  $(\forall x' E_1 x)(\exists z' E_2 z)R(x', z')$ . Equally,  $(\forall z' E_2 z)(\exists x' E_1 x)R(x', z')$  by (qp:2)–(qp:3). So  $\Lambda(R, x, z)$  and hence  $R(x, z)$  by (11.1). This completes the proof by induction.’

## Chapter 12

*p.285, first sentence of §12.A*

The text ‘we show how define’ should read ‘we show how to define’.

*p.288, clause (ho:R)*

The expression ‘ $\ulcorner V \urcorner$ ’ should be ‘ $\ulcorner R \urcorner$ ’, so it reads:

$$(\forall \ulcorner R(\bar{x}) \urcorner : For)[\langle D\Lambda\Sigma\sigma \vdash \ulcorner R(\bar{x}) \urcorner \rangle \leftrightarrow \Lambda(\ulcorner R \urcorner)\sigma^\uparrow(\ulcorner \bar{x} \urcorner)]$$

## Chapter 15

*p.368, footnote 14; p.369, footnote 17, 18.*

The references to Shapiro should point to Shapiro’s ‘An “i” for an i: Singular terms, uniqueness, and reference’ (2012, *Review of Symbolic Logic*, 380–415). This item is also missing from the bibliography.

## Chapter 16

*p.387, near the end of the introduction*

The text ‘It was provided Sher’ should read ‘It was provided by Sher’.

*p.391, 9th line from bottom*

The text ‘many areas of inquiry having nothing’ should read ‘many areas of inquiry have nothing’.

*p.407, middle of the page*

The text ‘So we must focus on (a) and (c)’ should read ‘So we must focus on (a) and (b).’

## Chapter 17

*p.426, second sentence of the subsection ‘Rethinking categoricity’*

The text ‘treating categoricity a desirable’ should read ‘treating categoricity as a desirable’.