Some possible typos in pages i∼127 of
Artemov & Fitting: *Justification Logic*, Cambridge Univ. Press (2019)

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Notation: $[x]$ means page x; $[x^y]$ means page x line y; and $[x_y]$ means page x line $-y$ (footnotes are counted for lines, page numbers and headings are not).

Possible typos.

- Sometimes "Lifting Lemma", "Internalization", "Necessitation" are used interchangeably, although the first two are separately formulated in Section 2.5. [This is true, but in the book the Lifting Lemma is proved using Internalization, and Internalization is actually a special case of the Lifting Lemma. Both are explicit versions of Necessitation. Any confusion is harmless.]
- $[\text{xvii}^{17}]$, $[56^{11}]$, $[65^2]$, $[66^{10}]$, $[70_{17}]$, $[120^2]$: A period is missing at the end.
- $[1_{11-12}]$: The citation appearance should be "(Gettier, 1963; Hendricks, 2005)".
- $[3_{1-2}]$: "3" should be "(iii)"; similarly for "4", "2", "5".
- $[4_1]$: "hasa" should be "has a".
- $[5_{15}]$: "$P \lor Q$" should be "$P \lor (Q \land \neg P)$".
- $[13_7]$: "Definition 10.32" should be "Definition 2.5".
- $[15^{4,6,8}]$: "y" should be "Y".
- $[21_5]$: "$c \xrightarrow{\mathsf{cs}} ...$" should be "$d \xrightarrow{\mathsf{cs}} ...$".
- $[24_{10,11}]$: "justified, true belief" should be "justified true belief" (twice).
- $[27^{13}]$: "one or X or Y" should be "one of X or Y".
- $[36^5]$: The last "$\Box_i F$" should be "$\Box_i G$".
- $[36_{10}]$: "J" should be "JL".
- $[37_2]$: "3.6" should be "3.6 with respect to J_0".
- $[38_{14}]$: An extra period after "Example 3.7".
- $[38_{13}]$: "in 1" should be "in (1)".
- $[41_{11}]$: "$0^* = \emptyset$, all other justification constants" should be "all justification constants" (I'm not sure, it seems that constant 0 doesn't apply here).
- $[42_{12}]$: "$(t{:}F)^\bullet = 1$" should be "$t{:}F \in (!t)^\bullet$".
- $[44^9]$: "modular model" should be "basic model".
- $[50_2]$: "Definitions 10.32, 2.6 and 2.6" should be "Definitions 2.5 and 2.6".
- $[51^{15,17}]$: "$t^{*(\Gamma)}$" should be "t^Γ"; "$\Box^{*(\Gamma)}$" should be "$\Box^\Gamma$" (twice).
- $[54^7]$: "propositional" should be "justification".
- $[63_2]$: An extra "for" at the right end.
- $[64_{11}]$, $[65^7]$: "Theorem 10.41" should be "Theorem 4.11".
- $[66_9]$: "LP" should be "J4^3".

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- $[67^{14}]$: "$\Delta R\Delta$, Let" should be "$\Delta R\Delta$. Let".
- [69] 1st line after the figure: "valid" should be "provable".
- [69] 4th line after the figure: "validities" should be "provabilities".
- $[70_5]$: "$u:B \to (v \cdot u): \neg A$" should be "$u:B \to (v \cdot u): \neg A$ is provable".
- $[70_2]$: "dropped, " should be ", dropped".
- $[72^1]$: Precisely speaking, "Lemma 4.14" should be "the '$\sharp$-version' of Lemma 4.14" (which is easy to prove).
- $[79^6]$, $[80^2]$: Before the application of $(\to \Rightarrow)$, there should be some weakenings to match the context.
- $[89_8]$: "6 and 7" should be "6 and 8".
- $[91_3]$: "1 and 3" should be "1".
- [95]: In form (4), the last line, "TX" should be "FX".
- [99]: In Figure 5.17(c), lines 6-7 and 9-10, I suspect that structural rules are needed to match context here.
- $[101^5]$: A comma is missing just before $s_n:F_n$.
- $[101_{14}]$: A comma is missing just before $c_n:A_n$.
- $[102_{11}]$: The last "G" should be "F".
- $[104^{13}, 113^6]$: The notion of *normal* realization receives two definitions.
- $[105^6]$: "sequences" should be "sequents".
- $[105_{16}]$: "one instance of the $\Rightarrow \Box$ rule" should be "one instance principally introduced by a $\Rightarrow \Box$ rule".
- $[105^6]$, $[107^7]$: "Corollary 6.2" should be "Lemma 6.1".
- $[106_2]$: "$\Gamma \vdash \Delta$" should be "$\Gamma \vdash \bigvee \Delta$".
- $[115^{6,8}]$: "$[\![FX]\!]$" should be "$[\![TX]\!]$".
- $[116^{10}]$: "$v_3:P$" should be "$v_2:P$"; "$v_2:Q$" should be "$v_3:Q$".
- $[116_5]$, $[118_{10}]$: "$Y^\circ = X$" should be "$Y^\circ = X'$", where notation $'$ is inherited from Definition 5.16 (X here is annotated, whereas the image of $(\cdot)^\circ$ is not annotated). Note: It may not be appropriate to inherit the $'$-notation from Chapter 5 (a few pages later at [120], that notation is not used in the same sense).
- $[117^{13,15}]$: "$\langle\!\langle FX \rangle\!\rangle$" should be "$\langle\!\langle TX \rangle\!\rangle$".
- $[118^{10}]$: It's better to put "$v_3:Q \to t:(R \vee R)$" in a pair of parentheses.
- $[118^{15}]$: "$\vee v_2:(P \to ...)$" should be "$\vee (v_2:P \to ...)$".
- $[119^5]$: "2.17" should be "Definition 2.17".
- $[120-126]$: It seems to me that, correctness proof of Algorithm 7.14 does not precisely fit with Definition 7.12 (this can be fixed by propositional reasoning on the rules with some care). In Definition 7.12, $\mathcal{A} \xrightarrow{TA} (A', \sigma)$ means the conjunction of (1) $T\mathcal{A} \subseteq \langle\!\langle TA \rangle\!\rangle$, (2) $TA' \in [\![TA]\!]$, and (3) $\vdash_{\mathsf{JL}} A' \to (\bigwedge \mathcal{A})\sigma$; but in correctness proof of Algorithm 7.14, it is handled as '(1) implies (2)&(3)'. Similarly for the F-case. This also relates to informal explanation at $[120_{4-5}]$.
- $[121_6]$: "$\langle\!\langle P \rangle\!\rangle = [\![P]\!]$" should be "$\langle\!\langle TP \rangle\!\rangle = \langle\!\langle FP \rangle\!\rangle = [\![TP]\!] = [\![FP]\!]$".
- $[123^{14}]$: "$t_1: \bigvee \mathcal{A}_1, ..., t_k: \bigvee \mathcal{A}_k$" should be "$Ft_1: \bigvee \mathcal{A}_1, ..., Ft_k: \bigvee \mathcal{A}_k$".
- $[123^{16}]$: "each $\mathcal{A}_i$" should be "each $F\mathcal{A}_i$".
- $[123^{17}]$: "$\mathcal{A}_1 \cup ... \cup \mathcal{A}_k$" should be "$F(\mathcal{A}_1 \cup ... \cup \mathcal{A}_k)$".
- $[123^{22}]$: "$\to A$" should be "$\to A'$".
- $[124_{17}]$: "$\vee ... \vee$" should be "$\wedge ... \wedge$".
- $[124_8]$: The formula should be "$[(A_1 \to B_1) \vee ... \vee (A_k \to B_k)]\sigma_A \sigma_B \to (A'\sigma_B \to B'\sigma_A)$".

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- [125^5]: "2.13" should be "Definition 2.13".
- [125^{12}]: "formula indexes" should be "formula where indexes".
- [125^{18}]: "Proposition 7.11" should be "Theorem 7.11".
- [125_{11}]: "$F\mathcal{A}_1 \cup ... \cup \mathcal{A}_k$" should be "$F(\mathcal{A}_1 \cup ... \cup \mathcal{A}_k)$".
- [125_8]: "2.16" should be "Corollary 2.16".
- [126^{13}]: "$\{Z_1, ..., Z_n\}$" should be "$\{FZ_1, ..., FZ_n\}$".
- [126^{15}]: "$\{FZ_1, ..., FZ_n\}$" should be "$\{Z_1, ..., Z_n\}$"; "(FZ, σ)" should be "(Z, σ)".
- [126^{18}]: "2.18" should be "Theorem 2.18".
- [$180^{4,10,13}$]: "2" should be "(2)".
- [$180^{6,12}$]: "3" should be "(3)"; "4" should be "(4)".
- [180_{11}]: "a classical" should be "an intuitionistically invalid classical".