It is plain that L_3 properly extends L_1. The question remains: Is the system L_2 equal to L_1 or possibly to L_3?

ATWELL R. TURQUETTE, *Herbrand's Deduktionstheorem for M-valued logics.*

In Chapter 3 of his thesis, Herbrand proves what Hilbert and Bernays in their *Grundlagen der Mathematik* (Erster Band, p. 155) later called the *Deduktionstheorem* (herein denoted as DT). Using a minimal set of axiomatic conditions for DT, denoted as $\underline{\text{min}}$ DT, the present paper constructively defines a set Σ of M-valued implications which is such that an implication C is a member of Σ if and only if C satisfies $\underline{\text{min}}$ DT.

A subset Σ^* of Σ is such that for each C of Σ^*, $CMq = 1$. This latter equation may be interpreted as saying that the maximum value of an M-valued logic implies anything. It is shown that the C's of Σ^* can be used to construct elegant axiomatic systems of M-valued logic with S designated values ($1 \leq S < M$). Gödel's M-valued implication G is a member of Σ^*. Recall that $Gpq = q$ if $p < q$ and $Gpq = 1$ if $p \geq q$.

Dual formulas are introduced for effectively counting the number of different implications in both Σ^* and Σ. They reveal a rapid growth relative to M. For example, already for $M = 7$, there are 357 different implications in the set Σ^* and 4824 in the set Σ.

EDUARD W. WETTE, *After the elementary inconsistency-computation: a nontransformable solution to the main problem of applied mathematics.*

The number $\ulcorner(*)\urcorner$ of *one* formally general 'proof' (*) [5, 1.], [7, 1.] entails the (*)-counterexample $\xi = k_A$. (*), "k_A" use nonminimal stilt-patterns (vs. [3, note 6]) with succedents-balancing $\langle 16, 0,.\rangle$'s in each antecedent. After [5, 5.] concerning $\Omega_{4+}(l, e, m, c, a)$ [4], [5, 3.], [7, 7.], [10], the term $\mathrm{sg}(|[k_A]_3 - [\Omega(k_A)]_3|) = 1 \ \& = 0$ is implicitly ${}^7 2$-computable, since ${}^5 2 < k_A < {}^6 2 < \Omega(k_A) < {}^7 2$ [7, 3., 6., 4., 2.]: ${}^n 2 = \psi_3\ (n, 2)$, *if* $\psi_{m+1}(0, a) = \mathrm{sg}(m)$, $\psi_0(n, a) = a + n$, $\psi_{m+1}(n + 1, a) = \psi_m(\psi_{m+1}(n, a), a)$; Péter's $\psi(m + 1, n) = \psi_m(n + 3, 2) - 3$, $\psi(4, n) = {}^{n+3}2 - 3$. k_A can explicitly be evaluated [7, 2., 5.] from an implicit k_A-computation via $< 2^{11}$ variable-free subterms.

1. The pre-Socratic tradition ("everything is .") can be renewed in terms of 'curvature-distribution of the seamless netting on a closed *maxi*mal line/surface/ . . ($\mathfrak{M}^n$)'. The problem *why* mathematical methods are applicable under the actual realities in nature, economics, etc.—Felix Klein 1908 vs. David Hilbert 1904—is solvable by a flattening and equalizing projection $\mathfrak{P}_{f_e}$ of the absolute and complete representation/diagram $\mathfrak{M}^4$ of primary 'motion' onto its own average [1], [5, [8]], [6], [9].

I use intrafinite recursive functions $(\varphi/\tau)(m_1, m_2, d)$ instead of "real" $f(u_1, u_2)$ with $u_1 : u_2 : 1 = m_1 : m_2 : d$, since harmonic triples $\langle \xi_0, \xi_1, \xi_2 \rangle\ (u_1, u_2)$ tear the net on a pouch-wave $\mathfrak{M}^2$ [1, Figure $2^{\perp}$] in singularities. φ, τ lead to "fast" algorithms [8], *whereas the inconsistent analysis* [2] *often yields* practically inefficient procedures.

2. A non-Bernoullian "elastic" line $\mathfrak{M}^1$ consists of a series of N fold-flings $\mathfrak{F}_q$ along a polygon $P_0 \ldots P_{N-1}\, P_0$ (without self-intersection), whose average forms a regular N-gon on a huge circle $\mathfrak{T}^1$ [4, [12, §2 p. 48]]. The computation of $\mathfrak{F}_q$ started from $\langle \xi, \eta \rangle (u) = {}_0^{s(u)}\!\int \langle \cos, \sin \rangle\, \alpha \cdot ds$, $ds/dv = \exp \varepsilon$, $\langle \alpha, \varepsilon \rangle (v) = {}^v\!\int \langle \sin, \cos \rangle\ \Theta\,(w) \cdot dw$ [6, 2., Figure 1], where now

$$\Theta(u) = \pi U(2B - AU) \wedge 0 \leq U = u/L \leq 1,$$

and $A = 2B - 1$, $\hat{\theta} = M\pi \geq \pi \rightarrow B = M + \sqrt{M(M-1)} \geq 1$, so that $\Theta = \pi \leftrightarrow U = \tilde{U} \in \{1/A, 1\}$, $|\overline{P_{q-1}P_q}| = L \cdot \tilde{U}$. α, ε are linear combinations of Fresnel's integrals.

3. I calculate

$$\langle \alpha, \varepsilon \rangle (u) = L \cdot \sum_0 {}_\nu \langle a_\nu, e_\nu \rangle \cdot U^\nu,$$

where

$$\langle a_\nu, e_\nu \rangle (M) = \nu^{-1} \sum_{\mu = 0 .. [\nu/4] - \langle \delta^+, \delta^* \rangle (\nu)} (-)^{[\nu/2] - \mu - \langle 1 - \delta(\nu), 0 \rangle} (\nu - 1 - 4\mu - 2 \cdot \langle \delta(\nu), 1 - \delta(\nu) \rangle)!^{-1}$$
$$\times\ (2\mu + \langle \delta(\nu), 1 - \delta(\nu) \rangle)!^{-1}\ (2B\pi)^{\nu - 1 - 2\mu - \langle \delta(\nu), 1 - \delta(\nu) \rangle}\ (1 - 1/(2B))^{2\mu + \langle \delta(\nu), 1 - \delta(\nu) \rangle} \leftarrow \nu > 0,$$

$\delta(\nu) = \nu - 2 \cdot [\nu/2]$, $\delta^+(\nu) = 1 - \delta([\nu/2])$, $\delta^*(\nu) = (1 - \delta(\nu)) \cdot (1 - \delta^+(\nu))$, e.g. $a_1 = e_2 = 0$, and $\langle \xi, \eta \rangle (u) = L \cdot \sum_1 {}_\nu \langle C_{\nu-1}, C^+_{\nu-1} \rangle \cdot U^\nu/\nu$, where

$$\langle C_\nu, C_\nu^+\rangle (L, M) = \sum_0{}_m L^m \cdot \sum_0{}_{j_0,\ldots,k_0,\ldots;\lhd} \langle 1 - \delta(j), \delta(j)\rangle \cdot (-)^{[j/2]} \prod_0{}_\mu a_\mu^{j_\mu}/j_\mu! \cdot \prod_0^\mu {}_\mu e^{k_\mu}/k_\mu!$$

with the indices-condition

$$\lhd \leftrightharpoons \sum_0{}_\mu j_\mu + \sum_0{}_\mu k_\mu = m \wedge \sum_1{}_\mu \mu j_\mu + \sum_1{}_\mu \mu k_\mu = \nu; \quad j = \sum_0{}_\mu j_\mu.$$

4. The integration constants a_0, e_0 are determined by $\langle\alpha, \varepsilon\rangle$ (0) or from $\langle\alpha, \varepsilon\rangle$ $(L\tilde{U})$ of the immediately preceding "Faltenwurf" $\mathfrak{F}_{q-1}$, possibly via $\langle\alpha, \varepsilon\rangle(L\tilde{U})$ of $\mathfrak{F}_q$ (!), and, as to a_0, also from $\sphericalangle P_{q-2}\, P_{q-1} P_q$. The equalizing property

$$\sum_1{}_\nu \langle C_{\nu-1}, C_{\nu-1}^+\rangle \cdot \tilde{U}_\nu/\nu = \langle \tilde{U}, 0\rangle$$

determines $\tilde{L}$, $\tilde{M}$; it yields $\langle\xi, \eta\rangle(\tilde{L}, \tilde{M}; \tilde{u}) = \langle \tilde{u}, 0)\rangle$, where $\tilde{u} = \tilde{L} \cdot \tilde{U}$. The "aesthetic" distribution of points $\langle\xi, \eta\rangle$ (m/d) on $\mathfrak{M}$. thus excludes any transformability. Virtual transformations enter in only after $\mathfrak{P}_{fe}(\mathfrak{M}^1 \dashv \mathfrak{T}^1)$. Spectra of a_0, e_0, $\tilde{L}$, $\tilde{M}$ come from the closing property that $\mathfrak{F}_N$ precedes $\mathfrak{F}_1$.

5. The universal $\mathfrak{P}_{fe}$-limit is a unique $++++$-hypertorus $\mathfrak{T}^4$ [4, [12]], [6, 3., Figure 2]. Descriptive geometry substantiates $\mathfrak{M}^1$ and 2-projections of $\mathfrak{M}^2$ [1] (or $\mathfrak{M}^3$, $\mathfrak{M}^4$), eliminates physical concepts, undermines probability-distribution and strategy statistics, rectifies measurement/observation [6], locates psychoanalytic concepts [9], disentangles language [11] and old-fashioned formulas.

REFERENCES

[2] Eduard W. Wette, XLV, pp. 412–413. Errata, p. 412: line -8, $\vdash \bar{\mathfrak{S}}_1$; line -3, ϕ_m "e_{kl}; line -2, for $\bigcup \dot{u}$ read $\bigcup_{\dot{*}}$. Errata, p. 413: line 6, for first $_\circ$ read $\mathring{}$; line 9, for ν read υ.

[4] ———, XLIV, pp. 474–476. Errata, p. 475: line 16, insert $\langle$ behind first comma; line 17, for = read = $\langle$, and replace the 1st/3rd occurrence of ***el*** by *el*; correction, line 30, for 80, 26, 27, 43, 49 read 86, 29, 30, 48, 54, resp.

[5] ———, Second Leeds address, 1979, August 06. XLVI, pp. 443–445; delete second ri in (*).

[1][3][6] ———, XXXIX, p. 409 [1]; XLI, p. 273 [5] = p. 280 [2]; [5, [13]], 1979, August 27, section 8, pp. 201–205.

[7] ———, *Inconsistenza dell'induzione matematica* (translation of [5, [12]] by Alessandro Atti) ***Nominazione 1*** (La sfida di Peano), Milano 1980, pp. 153–158. Formal errata, 29-line paper.

[8] ———, *Critical remarks on the tradition of so-called "proofs" and on the future of mathematics*. Cf. also ***International Logic Review***, vol. 21 (1980), pp. 5–24.

[9] ———, *Morphe, prototype and aspect*, ***4th International Congress of Psychoanalysis (Le Semblant)***, Milano 1981, January 28-31.

[10] ———, *The refutation of number theory*. II. (Complete Ω-definition: >300 subfunctions, ~0.1 megabit of definitional information.)

[11] ———, *Metempsychosis mathematized*, ***5th International Congress of Pychoanalysis (Sex and Language)***, New York, 1981, April 30-May 02.

[12] ———, *Theometric consequences of the contradiction within 2-valued propositional logic*, ***6th International Wittgenstein Symposium (Language and Ontology)***, Kirchberg am Wechsel 1981, August 24-30.

GERHARD HEINZMANN, *La philosophie de la géométrie et de la logique de Ferdinand Gonseth* (1890–1975).

Une idée centrale dans l'oeuvre de Gonseth est d'essayer de considérer une connaissance géométrique comme "construction schématique". Dans cette construction les structures géométriques 'formelles' doivent être obtenues au moyen d'un "processus d'abstraction" à plusieurs niveaux à partir d'éléments concerts.

Ensuite la géométrie sert comme paradigme pour un modèle de connaissance générale—précisé pour la logique—conciliant "dialectiquement" empirisme et rationalisme rigide.

Tandis que dans la théorie réductive de la démonstration se fondant sur Hilbert, les suppositions plus ou moins 'évidentes' entrées dans une théorie mathématique se mesurent à la