

This is an attempt to improve upon von Neumann's systematization of set theory. Entities are classified as *I-Dinge* and *II-Dinge*, as with von Neumann, and von Neumann's primitive constants A and B are retained; but his two primitive operations, " $[f, x]$ " (application of a one-place function) and " $\langle x, y \rangle$ " (formation of the ordered pair), are dropped in favor of one: " $[f; x, y]$ " (application of a two-place function). $[f, x]$ is then defined as $[f; x, x]$. The gain in economy is questionable, for in order to derive $\langle x, y \rangle$ the author is compelled to assume another primitive, namely a constant p such that $[p; x, y] = \langle x, y \rangle$.

Of von Neumann's nineteen postulates, thirteen are carried over either unchanged or directly extended to deal with " $[f; x, y]$ " instead of " $[f, x]$ ". The remaining six are dropped in favor of four new ones. But the total is brought back up to nineteen by a stylistic change: principles governing the identity sign are lifted from the level of intuitive logic and given explicit formulation.

Among Hirano's postulates there is one (V.1) to the strange effect that every I-Ding is an ordered pair of I-Dinge. No intuitive justification is undertaken. The author states, indeed, that this postulate is included only to simplify certain projected constructions; but surely many readers would prefer the alternative complexities.

The theorems proved here are intended as lemmas for a future paper. The chief ones are these. Let ϕ be a formula (statement form) built up of the primitive devices mentioned above together with truth-function signs, quantifiers, the identity sign, names of any specific elements, and I-Ding variables " x_1 ", " x_2 ", \dots " x_n ". Let ϕ' be ϕ with " y " substituted for " x_1 ". Then

$$(1) (\exists f)(x_1)(x_2) \dots (x_n) \cdot \phi \equiv [f, \langle x_1, \langle x_2, \dots \langle x_{n-1}, x_n \rangle \dots \rangle \rangle] = A,$$

$$(2) (\exists f)(x_1)(x_2) \dots (x_n) : (y) \cdot \phi \cdot \phi' \cdot \supset x_1 = y : \equiv x_1 = [f, \langle x_2, \dots \langle x_{n-1}, x_n \rangle \dots \rangle].$$

Minor errors: the verbal rendering of postulate IV.3 diverges from the symbolic rendering in two essential respects; also some mention of the identity sign seems to be wanted in the statement of Hilfssätze 2 and 4.

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Myśl katolicka wobec logiki współczesnej (Catholic thought and modern logic). Studia Gnieńska no. 15. 1937, 196 pp.—Therein:

C. MICHAŁSKI, *Wstęp* (Introduction), pp. 7–11.

J. ŁUKASIEWICZ, *W obronie logistyki* (In defense of logistic), pp. 12–26.

I. M. BOCHEŃSKI, *Tradycja myśli katolickiej a ścisłość* (The tradition of Catholic thought and exactness), pp. 27–34.

J. SALAMUCHA, *Zestawienie scholastycznych narzędzi logicznych z narzędziami logistycznymi* (Comparison of Scholastic logical techniques with logistic techniques), pp. 35–49.

J. F. DREWŃOWSKI, *Neoscholastyka wobec nowoczesnych wymagań nauki* (Neoscholasticism and the contemporary requirements of science), pp. 49–57.

Dyskusja (Discussion): J. CHECHELSKI, pp. 61–64; P. CHOJŃACKI, pp. 65–74; J. PASZUSZKA, pp. 75–77; J. STEPA, pp. 78–83.

Odpowiedzi (Replies): I. M. BOCHEŃSKI, *O "relatywiźmie" logistycznym* (On logistic "relativism"), pp. 87–111; J. SALAMUCHA, *O "mechanizacji" myślenia* (On the "mechanization" of thought), pp. 112–121; J. SALAMUCHA, *O możliwościach ścisłego formalizowania dziedziny pojęć analogicznych* (On possibilities of precise formalization in the domain of analogical concepts), pp. 122–155.

La pensée catholique et la logique moderne, pp. 155–196. (A summary in French of the preceding material.)

See previous reviews in this JOURNAL of Łukasiewicz's paper (III 43), and of the French summary, which was separately published by the theological faculty of the University of Kraków (III 44).

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Summary of the paper which appears in full in this number of the JOURNAL.