

The Sheffer Box  
Juliet Floyd, Boston University  
UC Berkeley Logic Group, 11/21/2014  
**Sheffer's Teachers, Colleagues, Students (in bold)**

Lotze (1817-1881)

**Wm. James (1842-1910)**

**Frege (1848-1925)**, HMS met Frege spring 1910

**Royce (1855-1916)**, 1875-8 in Heidelberg, Leipzig, Göttingen with Lotze

**Peano (1858-1932)**, **Burali-Forti (1861-31)** HMS in Turing spring 1911.

**Whitehead (1861-1947)**, at Harvard 1924-1947

Hilbert (1862-1943)

E. Zermelo (1871-1953), HMS's (1921) programme discussed w. Farber, 1923

**Russell (1872-1970)** HMS visited Cambridge UK fall 1910-spring 1911

**Holt (1873-1946)**, credits HMS with term "neutral" in "neutral monism"

**Huntington (1874-1952)**, PhD with Weber 1901

**Sheffer (1883-1964)** (Harvard PhD 1908: readers Royce, Huntington, Holt)

**C.I. Lewis (1883-1964)** (Harvard PhD 1910)

Wittgenstein (1889-1951)

Carnap (1891-1970)

**Susanne K. Langer (1895-1985)**, 1926 PhD, logical analysis of meaning, "form"

**C.H. Langford (1895-1964)**, 1926-7 papers using quantifier elimination,  
Completeness & decidability of theory of dense and  
discrete orders; "form"

**E.L. Post (1897-1954)**

**Marvin Farber (1901-1980)**, 1923-24 in Berlin, Freiburg with Zermelo, lecturing  
on Sheffer's ideas; generality as constancy of  
"form" under all permutations; book planned

Tarski (1901-1983)

Ramsey (1903-1930)

Church (1903-1995)

Gödel (1906-1978)

Herbrand (1908-1931)

**Quine (1908-2000)**

Alan Turing (1912-1954)

## Sheffer Timeline

- 1883 Born in Ukraine; c. 1892 moves to Boston; 1902 Graduates Boston Latin School  
1905 Harvard BA, studies with James, Royce, Huntington  
1906-1910 Assistant to Royce; 1907 Harvard MA  
1908 Harvard Ph.D "A Program of Philosophy, Based on Modern Logic"  
(signed by Royce, Huntington, and Holt)  
1908-9 post doc at Harvard  
1910-11 Sheldon, travels to Cambridge, Paris, Padoa, Göttingen, Jena. Works with  
Russell, Peano, Burali-Forti, Frege, and others (e.g. meets Boutroux)  
1911-1912 University of Washington, Seattle  
1912-1913 Cornell University  
1913-1914 University of Minnesota  
1914-1915 University of Missouri, Columbia  
1915-1916 CCNY  
*N.B. Post graduates from CCNY 1917, at Columbia 1917-1920*  
1916 University of Michigan  
1917-1926 Instructor at Harvard (death of Royce in September 1916)  
*General Theory of Notational Relativity, Mimeographed ms, 1921*  
1927 Assistant Professor of Philosophy, Harvard  
1938 Promoted to Full Professor  
1940 University of Chicago  
1952 Retires from Harvard  
1964 Sheffer dies, asking B.S. Dreben to order his materials for the Harvard Archives  
1970 Sheffer Archives established, with help of H.S. Leonard, at Harvard Archives  
1999 B.S. Dreben dies.  
2012 Discovery of the Sheffer Box

### H.M. Sheffer Publications

- {1908} “A Program of Philosophy, Based on Modern Logic” (PhD Dissertation, directed by Royce, Huntington and Holt)
- 1909 "Ineffable Philosophies", *JPhil* 6: 123-129.
- 1910a “Total determinations of deductive systems with special reference to the algebra of logic.” *BullAMS*. Abstract.
- 1910b Review of *Logique et Mathématiques. Essai historique et critique sur le nombre infini* by A. Reymond, *Phil Review* 19: 89-90.
- 1913a “A Set of Five Independent Postulates for Boolean Algebra, With application to Logical Constants” *TransAMS* 14: 481-488.
- 1913b “A Set of Five Independent Postulates for the Boolean Algebra” *BullAMS*. Abstract
- 1913c “Superpostulates: introduction to the science of deductive systems”. *BullAMS*. Abstract.
- 1913d “A set of Six Independent Postulates for Boolean Algebras” *BullAMS*. Abstract.
- 1915a Deductive systems and postulate theory; I. finite case. *BullAMS*. Abstract.
- 1915b Review of *On the Cosmic Relations* by H. Holt, *The Dial* 58: 421-22.
- 1916a The reduction of non-monadic relations to monadic. *BullAMS*. Abstract
- 1916b The elimination of modular existence postulates. *BullAMS*. Abstract.
- 1916c “On a Set of Independent Postulates for Complex Algebra”, *BullAMS*. Abstract.
- 1916d Mutually prime postulates. *BullAMS*. Abstract.
- 1919 Principia Analytica. *Phil.Review*. Abstract.
- 1920 Review of *A Survey of Symbolic Logic* by C.I. Lewis. *AmerMathMonthly* 27:309-11.
- 1921 General Theory of Notational Relativity, mimeograph publication, circulated
- 1922 Review of *Physik und Hypothese*, by H. Dingler, *Isis* 5: 469-470.
- 1923 Review of *Per la storia della logica* by F. Enriques, *Isis* 5: 469-470.
- 1924a Review of *Substance and Function and Einstein's Theory of Relativity* by E. Cassirer, *Isis* 6: 439-440
- 1924b Review of *Durée et simultanéité, à propos de la theorie d'Einstein* by H. Bergson, *Isis* 6: 570-571
- 1924c Review of *Die Grundlagen der Physik* by H. Dingler, *Isis* 6: 572-3
- 1924d Review of *Kant und Einstein* by A.C. Eisbach, *Isis* 6: 573-574
- 1926 Review of Whitehead and Russell, *Principia Mathematica* 2nd edition, *Isis*: 226-231.
- 1927 “Notational Relativity”, *Proc 6<sup>th</sup> Intl Congress Philosophy*, ed. E.S. Brightman: 348-351.
- 1947 “Quantifiers” in *Freedom and Experience: Essays presented to Horace M. Kallen*, eds. S. Hook and M.R. Konvitz, Cornell Press.
- {1951}*Structure, Method and Meaning: Essays in Honor of Henry M. Sheffer*, forward by Felix Frankfurter, eds., P. Henle, H. M. Kallen, and S.K. Langer.

**Sheffer Materials found at 83 Ivy St. #31, Brookline, MA, 5/22/2012**  
**With the help of Bernard Linsky and Aki Kanamori**  
Juliet Floyd, Boston University

In a 1ft square box marked by me “Misc. Logic Materials, BSD”, a number of papers covering Sheffer materials at the bottom.

11 Manila Folders/Notebooks.

**#1) Manila Folder, labeled “Sheffer” in Burton Dreben’s hand.**

1. 20.5 cm x 12.5 cm notebook, bound on short side at top.  
Front Cover reads
  - i. Harry Sheffer. Phil 1a. (1902-3)
  - ii. Phil 1a’: Paulsen and Royce’s Idealism (1903-4)
  - iii. Phil 15: VennBack cover reads: Phil.15. [1903-4] Venn.  
Top side (a.) appears to be i, ii above. Reverse side (b.): notes, crossed out by hand. Tucked inside this side, at the beginning of Phil 15. 7.5cm x 5cm.  
Handwritten page titled “Symbolic Logic. John Venn. [2d. Ed.]” 39 pp. on both sides + front and back cover; 78 pages total.
2. Tucked Inside 1. above. 12.5 cm x 19.5 cm. Handwritten. Title at top: Paulsen. 8 pages, the first titled “Preface: (Wm. James). This may be based on Paulsen’s *Introduction to Philosophy* (1904 2<sup>nd</sup> American ed. From 3<sup>rd</sup> German ed.)???
3. Tucked inside 1. above. 9.5cm x 11.5cm sheets, handwritten. Titles: Relation Bet. Matter & Mind. I. Materialism. 2 pages
4. Harvard University Notice of Exam questions, Philosophy 15 1909-10. 4 pages.
5. Handwritten notes: “Order of topics discussed in 1909-10”, “Order types as actually present in the exact S.”, 2 pages. Handwritten in pencil at top “Phil. 15”. Not obviously in Sheffer’s hand. Royce???
6. PH 23 lecture notes. Undated. Handwritten, Grouped by lecture. 15 lectures in all. 79 pages. Spring course dates. Includes discussion of Karl Pearson, *The Grammar of Science*, 2<sup>nd</sup> ed. (1900). Perhaps before 1911 (3<sup>rd</sup> ed. was 1911)?? But Sheffer’s hand appears to be of possibly a later date.
7. Notes of Phil 8b, 1922 spring semester. Taken in Marvin Farber’s hand. 53pp.
8. Letters from Marvin Farber to H.M. Sheffer
  - a. From Wilmersdorf, Berlin, Uhlandstr 101, (1r), Jan. 28, 1923
  - b. From Freiburg i. B., Wilhelmstr. 6, July 18, 1923
  - c. From Freiburg i.B., Günterstalstr. 57, Dec. 27, 1923
9. Typewritten notes on G.H. Bousquet: Vilfredo Pareto – sa vie et son oeuvre (1928). One page.
10. Single sheet 13cm by 21cm, along with attached pages of same size, blank, in which it is folded. Probably ripped from a notebook. Handwritten, much in shorthand, by H.M. Sheffer. At top: “Syllabification”. One page.
11. Fragment, irregular 3cm x 2cm Marked with an address. From H.M. Sheffer, 5541 S. Everett Ave. Chicago, IL. 1940-41. One Page

12. Offprint of "The If-Then relation and Scientific Inference", James A. Christenson, Jr., Duke University, *Psychological Review* vol 49, 5, September 1942, pp. 486-493. Inscribed by the author, "to Dr. Sheffer, with kind regards, J.A. Christenson".
13. Letter to Sheffer from Dr. James A. Christenson, PRV#1 Hq & Hq Sq. NAAC (AAFCC) Nashville, TN. 2 pages + enclosure of a 2 page comment by H.M. Johnson, Professor of Psychology, to the editor of the *Psychological Review*, Prof. H.S. Langfeld, Princeton University, dated 2 November 1942. The comment claims to find errors in Christenson's article.
14. Paper clipped packet of notes, first reads "Is tr an infinity?". 23 fragments in all. Logical formulas and references to logical works. 5 pages scanned.

**#2) A Program of Philosophy, Based on Modern Logic. Sheffer PhD dissertation abstract.** Original, signed by the author. 4 pages.

**#3) Folder titled "Frege (offprints)" in Burton Dreben's hand:**

1. Offprint of Sheffer, Review of *Principia Mathematica*, *Isis, Quarterly Organ of the History of Science Society*, No. 25, Vol. VIII (1), February 1926: 226-231. No annotations.
2. Offprint of Frege, "Über die Grundlagen der Geometrie", *Jahresbericht der Deutschen Mathematiker-Vereinigung*, Bd. XV. 1906, 293-430. Parts I,II,III. No annotations.
3. Offprint of Frege, "Le Nombre Entier" (1895). Signed and annotated at top of first page: "R.M.M." Jan. '95". "Frege" (probably not in Frege's hand (?)).
4. Offprint of Frege, "Function und Begriff" (1891). No annotations.
5. Offprint of Frege, "Über die Begriffsschrift des Herrn Peano und meine eigene" (1896), signed by the author: "Überreicht von G. Frege". No annotations.
6. Offprint of Frege, "Was ist eine Funktion?" (1904). No annotations.

**#4) Folder labelled "A.N. Whitehead" in Burton Dreben's hand.**

- a) Offprint of Whitehead's "The Axioms of Projective Geometry" No. 4 (1906), annotations on 2 pages by Sheffer+ one small piece of paper with annotations by Sheffer inside at p. 15.
- b) Offprint of Whitehead's "The Axioms of Descriptive Geometry" No. 5 (1906)
- c) Offprint of Russell, "On the Notion of Order", *Mind* (n.s.) 10: 35-51 (1901)
- d) Offprint of "Observations Présentée par M. Émile Boutroux sur son voyage en Amérique, Institut de France, Academic des Sciences Morales et Politiques, Alphonse Picard et Fils, Éditeurs, 82, rue Bonaparte, 82, 1910". Inscribed by the author, "à Monsieur H.M. Sheffer souvenir affectueux de son sejour à Paris, M. Boutroux".

**#5) Manila Folder, labelled “Russell and Sheffer” in Burton Dreben’s hand.**

1. Small Pamphlet, “The Second Green Book”, musings of an apparently Chinese person; facetious; apparently 1923. Addressed to Sheffer, filled with logic jokes, references to Carroll, *Alice in Wonderland*, and other logic joke books. Annotated. 3 pp.
2. Advertisement for a series of lectures by Russell in America, 1924 on back. 3 pp.
3. Sheffer, minor typographical annotations/corrections on an original offprint of Russell’s “Mathematical Logic as based on the Theory of Types” (1908) at p. 259n, on Zermelo’s axiom.
4. Sheffer, notes of Russell’s Fall 1910 course, “Symbolic Logic”. Handwritten original. 32 pages.
5. Sheffer, notes of Russell’s Fall 1910 course, “Fundamental Concepts of Mathematics”. Handwritten original. 18 pp.
6. Sheffer, notes of extra meetings with Russell, 11/17/1910, 12/5/1910, as well as two separate pages on “the deduction illusion” and “the variable”. Handwritten original on 5” x 4.5” notebook pages embossed with “Christ College Cambridge”. 10pp.
7. Sheffer, Handwritten Notes on Russell’s “Scientific Method in Philosophy”. Undated (1914?). On 7.25” x 8.5” (small paper). 5 pp.
8. Letters to Burton Dreben from Ken Blackwell, 3/19/1970 handwritten thank you for spending time and giving copies; 4/13/1970 typewritten enclosing copies of Russell’s letters to Sheffer in response to a 4/6/1970 letter from BSD.
9. Sheffer, correspondence, letters to Russell. Copies. Presumably sent by Blackwell to Dreben in 1970.
  - i. June 9, 1910, HMS to BR from Harvard, Cambridge, MA. Russell annotation at top: “Sheffer was a very able mathematical logician”.
  - ii. March 2, 1911 HMS to BR from Paris
  - iii. March 19, 1911 HMS to BR from Paris
  - iv. July 28, 1911, HMS to BR from Göttingen
  - v. March 16, 1912, HMS to BR from Seattle.
  - vi. April 15, 1913 HMS to BR from Ithaca N.Y.
  - vii. July 29, 1914, HMS to BR from University of Minnesota (return address after 8/4/14 in Boston)
  - viii. October 18, 1916, HMS to BR from Harvard University, Cambridge, MA
  - ix. May 17, 1919 HMS to BR from Cambridge, MA. Reports “putting finishing touches on a long paper, the result of something like six years’ *Gedankenexperimente*”. Topic described as “equivalence of systems”. Fears of lurking fallacy expressed. States it has been in his possession for more than two years.
  - x. November 28, 1919, HMS to BR from Cambridge, MA. Tells Russell Department of Philosophy at Harvard is very eager to get his opinion of the enclosed “typoscript”. Speaks of putting material together “under great pressure of time”. Asks that it be returned by Russell after he has seen it.
  - xi. March 6, 1920, HMS to BR from Cambridge, MA. Thanks for promptness of Russell’s cablegram and letter regarding the manuscript and

- the manuscript itself. Reports a one year appointment as Assistant Professor.
- xii. August 31, 1923, HMS to BR. On Sheffer's reactions to Russell's *Australasian Journal of Philosophy* article on Vagueness. Describes method of "Protoanalysis", as opposed to "ordinary analysis" which becomes "molar" analysis. Describes approach in terms of "tropicity" or "permutivity". States that "by means of the protoanalytic concept of tropicity we free ourselves from a vast number of merely 'linguistic' problems in dealing with 'reality'. "But even tropicity is still too 'human'". Asks about possibility of a university lectureship in England.
  - xiii. February 18, 1926, HMS to BR. Reactions to further simplification to *Principia* after "stroke" is substituted. Suggests a new operator "not for every x", "x" with bar on top. Mentions that "Wittgenstein has generalized the notion of "stroke". But it does not seem to have occurred to him to make use of a new general operator, as here suggested". Recommends to Russell in *Mind* "Confusion of Symbols and Confusion of Logical Types", forthcoming by "one of my students" [S.K. Langer, 1926].
  - xiv. September 1, 1926, HMS to BR. "Now that you are taking seriously my remarks about position or sense in relations, you may be interested in the following brief indication of the way in which I define this notion". "The Slur Notation".

**#6) Course Materials of H.M. Sheffer. Marked "Sheffer" in B.S. Dreben's hand.**

- i. Lecture Notes. Logic of Science. 1914-1915, University of Missouri Columbia. Typed on Department of Philosophy letterhead. Original. 8 pp.
- ii. Mimeograph copy, Logic of Science Lecture Notes, University of Missouri, 1914-1915. Written on first page "(Miss Hope Hibbard)". Handwritten on back cover, "Logic of Science, Lecture notes (1914-15, U. of Mo.)" also "Phil 3". 13 pp
- iii. 1918 Phil C, The Principles of Logic, handwritten notes. Signed Lucile A. Harrington, Radcliffe 1919. 73.pp.
- iv. Printed Course Outline, Philosophy C, Elementary Logic, Harvard University 1918-19, including bibliography and course structure. Original. 12pp.
- v. Printed Course Outline, Philosophy 1, Elementary Logic, Harvard University 1920-21, including course structure. Original. 11pp.
- vi. Philosophy 1 final exam 1921-22. Original offprint. 1 page.
- vii. Philosophy 3' notes. 1921-22. "Various possible contents for a course called "Phil. Of Sc." Typed, original. Annotated in Sheffer's hand. Ends with "The need of the sc. Of "Hypothetology". "Introductory" handwritten across back page. 3 pp.
- viii. Philosophy 1, Handwritten Notes of Course. In Sheffer's hand (?). 29 pp.
- ix. Phil 20m Seminary in the Philosophy of Mathematics. Course syllabus with topics and bibliography. After 1937. Typed. Xeroxed copy. 6 pp.

**#7) Folder containing a mimeograph copy of Sheffer's *The General Theory of Notational Relativity*, dated 1921. Copy. 62 Pages.**

**#8) Sheffer, Notes on "Structure of A Scientific Hypothesis".** Pasted original pieces of paper, some handwritten, some mimeographed. Annotated and signed across the top: "A Part of a Lecture by HMS? H.S. Leonard". 3 pages.

**#9) Paper bound in paper notebook leaf, punched. Mimeograph. "Physics Department Harvard University 1943. "Introduction to the Theory of Relativity", Dr. Philipp Frank.** Inscribed, "With the author's compliment to Professor Sheffer, Jan. 15, 1944, Philipp Frank". 61 pp. + title page and table of contents.

**#10) Manila Folder labelled (in unknown hand) "Misc. Newspaper Clippings".**

**#11) Manila folder labelled in Burton Dreben's hand, "Leonard on Sheffer".**

- a) Handwritten letter 12/22/1964 from H.S. Leonard to Dreben. Explains working in Dreben's office on Sheffer material, which had been taken down to Duxbury to be organized. Reports having begun sorting material. Proposes a "fundamenta divisionis" that is tentative. Reports experimenting with packets of notes bound in rubber bands, taping the pieces in order, and evaluating them "with an eye to what might be assembled for publication". States that "it would be marvelous if there should be discovered the complete manuscripts for the papers Sheffer read at the Mathematical Society Meetings", as the published abstracts are too brief.
- b) Paper clipped packet, first sheet noted in Leonard's hand: "Contents of one rubber band. Assembled without editorial regard to contents in the order in which the slips of paper were piled up and held together by the rubber band. Horizontal lines indicate separations *within* the rubber band: the slips of paper between two successive horizontal lines were either folded together". Assembled by Leonard. Scotch taped scraps of hand annotated, mimeographed, and handwritten paper. 7 pp.
- c) Paper clipped packet, first sheet noted in Leonard's hand: "Contents of one rubber band. See note attached to similar assemblage for another rubber band". Assembled by Leonard. Scotch taped scraps of hand annotated, mimeographed, and handwritten paper. 16pp.