

Arnon AVRON, Ph.D.

SELECTED LIST OF PUBLICATIONS

BOOKS

1. A. Avron, **Gödel's Theorems and The Problem of the Foundations of Mathematics** (written in Hebrew), Broadcasted University Series, Ministry of Defense Publications, Israel, 1998
2. A. Avron, **Introduction to Discrete Mathematics** (written in Hebrew), Tel-Aviv University, Israel, 2001
3. A. Avron, O. Arieli, and A. Zamansky, **Theory of Effective Propositional Paraconsistent Logics**, Studies in Logic (Mathematical Logic and Foundations) 75, College Publications, 2018.

ARTICLES IN JOURNALS AND COLLECTIONS

1. A. Avron, *Relevant Entailment - Semantics and formal systems*, Journal of Symbolic Logic 49, 334-342 (1984).
2. A. Avron, *On Modal Systems having arithmetical interpretations*, Journal of Symbolic Logic 49, 935-942 (1984).
3. A. Avron, *On Purely Relevant Logics*, Notre Dame Journal of Formal Logic 27, 180-194 (1986).
4. A. Avron, *On an Implication Connective of RM*, Notre Dame Journal of Formal Logic 27, 201-209 (1986).
5. A. Avron, *Theorems on Strong Constructibility with a Compass alone*, Journal of Geometry 30, 28-35 (1987).
6. A. Avron, *A Constructive Analysis of RM*, Journal of symbolic Logic 52, 939-951 (1987).
7. A. Avron, *The Semantics and Proof Theory of Linear Logic*, Theoretical Computer Science 57, 161-184 (1988).

8. A. Avron, *Construction Problems - Why and How?*, International Journal of Mathematical Education in Science and Technology 20, 273-287 (1989).
9. A. Avron, F. Honsell, I.A. Mason , *An Overview of the Logical Framework* , in **Current Trends in Hardware Verification and Automated Theorem Proving** (G. Birtwistle, S.A. Subrahmyam, eds.), 323-340, Springer-Verlag, 1989.
10. A. Avron, *Gentzenizing Schroeder-Heister's Natural Extension of Natural Deduction*, Notre Dame Journal of Formal Logic 31, 127-135 (1990).
11. A. Avron, *On Strict Strong Constructibility with a Compass Alone*, Journal of Geometry 38, 12-15 (1990).
12. A. Avron, *Relevance and Paraconsistency - A New Approach*, Journal of Symbolic Logic 55, 707-732 (1990).
13. A. Avron, *Relevance and Paraconsistency - A New Approach. Part II: the Formal systems* , Notre Dame Journal of Formal Logic 31, 169-202 (1990).
14. A. Avron, *Relevance and Paraconsistency - A New Approach. Part III: Cut-Free Gentzen-type Systems*, Notre-Dame Journal of Formal Logic 32, 147-160 (1991).
15. A. Avron, *Simple Consequence Relations*, Information and Computation 92, 105-139 (1991).
16. A. Avron, *Natural 3-valued Logics— Characterization and Proof Theory*, Journal of Symbolic Logic 56, 276-294 (1991).
17. A. Avron, *Hypersequents, Logical Consequence and Intermediate Logics for Concurrency*, Annals of Mathematics and Artificial Intelligence 4, 225-248 (1991).
18. A. Avron, *A Note on Provability, Truth and Existence*, The Journal of Philosophical Logic 20, 403-409 (1991).
19. A. Avron , *Axiomatic Systems, Deduction and Implication*, Journal of Logic and Computation 2, 51-98 (1992).

20. A. Avron, *Whither Relevance logic?*, Journal of Philosophical Logic 21, 243-281 (1992).
21. A. Avron, F.A. Honsell, I.A. Mason, R. Pollack, *Using Typed Lambda Calculus to Implement Formal Systems on a Machine*, The Journal of Automated Reasoning 9, 309-354 (1992).
22. A. Avron, *Gentzen-Type Systems, Resolution and Tableaux*, Journal of Automated Reasoning 10, 265-281 (1993).
23. A. Avron, *An Exercise in An Interactive Geometrical research*, Annals of Mathematics and Artificial Intelligence 9, 239-252 (1993).
24. A. Avron, *What is a Logical System?*, in **What is a Logical System** (D. Gabbay, ed.), Studies in Logic and Computation, 4, 217-238, Oxford University Press, 1994.
25. A. Avron, J. Hirshfeld, *Queries Evaluation, Relative Safety and Domain Independence in First Order Database Languages with Functions*, Methods of Logic in Computer Science, 1, 261-277 (1994).
26. A. Avron, *Some Properties of Linear Logic Proved by Semantic Methods*, Journal of Logic and Computation 4, 929-938 (1994).
27. A. Avron, N. Sasson, *Stability, Sequentiality and Demand Driven Evaluation in Dataflow*, Formal Aspects of Computing 6, 620-642 (1994).
28. A. Avron, *A Note on the Structure of Bilattices*, Journal of Mathematical Structures in Computer Science 5, 431-438 (1995).
29. A. Avron, *The Method of Hypersequents in Proof Theory of Propositional Non-Classical Logics*, In: **Logic: Foundations to Applications** (W. Hodges, M. Hyland, C. Steinhorn and J. Truss eds.) 1-32, Oxford Science Publications, 1996.
30. O. Arieli, A. Avron, *Reasoning with Logical Bilattices*, Journal of Logic, Language and Information 5, 25-63 (1996).
31. A. Avron, *The Structure of Interlaced Bilattices*, Journal of Mathematical Structures in Computer Science 6, 287-299 (1996).

32. A. Avron, *Multiplicative Conjunction as an Extensional Conjunction*, Logic Journal of the IGPL 5, 181-208 (1997).
33. A. Avron, *Formulas for which Contraction is Admissible*, Logic Journal of the IGPL 6, 43-48 (1998).
34. A. Avron, F. Honsell, M. Miculan, C. Paravano, *Encoding Modal Logics in Logical Frameworks*, Studia Logica 60, 161-208 (1998).
35. O. Arieli, A. Avron, *The Value of the Four Values*, Artificial Intelligence 102, 97-141 (1998).
36. A. Avron, *Multiplicative Conjunction and an Algebraic Meaning of Contraction and Weakening*, Journal of Symbolic Logic 63, 831-859 (1998).
37. A. Avron, *Two Types of Multiple-conclusion Systems*, Logic Journal of the IGPL 6, 695-717 (1998).
38. A. Avron, *On the Proof Theory of Natural Many-valued Logics*, in Collegium Logicum (Annals of the Kurt Gödel Society) 3, 51-59 (1999).
39. O. Arieli, A. Avron, *A Model-theoretic Approach for Recovering Consistent Data from Inconsistent Knowledge Bases*, Journal of Automated Reasoning 22, 263-309 (1999).
40. A. Avron, *On the Expressive Power of Three-valued and Four-valued Languages*, Journal of Logic and Computation 9, 977-994, (1999).
41. A. Avron, *Negation: Two points of view*, in **What is Negation?** (D. Gabbay and H. Wansing, eds.), Applied Logic Series 13, 3-22, Kluwer Academic Publishers, 1999.
42. O. Arieli, A. Avron, *Bilattices and Paraconsistency*, in **Frontiers in Paraconsistent Logic** (D. Batens, C. Mortensen, G. Priest, and J. Van-Benedem, eds.), Studies in Logic and Computation 8, 11-28, Research Studies Press, 2000.
43. O. Arieli, A. Avron, *General Patterns for Nonmonotonic Reasoning: From Basic Entailments to Plausible Relations*, Logic Journal of the IGPL 8, 119-148 (2000).

44. A. Avron, *Implicational F-Structures and Implicational Relevance Logics*, Journal of Symbolic Logic 65, 788-802 (2000).
45. A. Avron, and B. Konikowska, *Decomposition Proof Systems for Gödel Logics*, Studia Logica 69, 197-219 (2001).
46. A. Avron, *On Negation, Completeness and Consistency*, in **Handbook of Philosophical Logic** (D. Gabbay and F. Guenther, eds.) Vol. 9, 287-319, Kluwer Academic Publishers, 2002.
47. A. Avron, *Classical Gentzen-type Methods in Propositional Many-Valued Logics*, in **Beyond Two: Theory and Applications of Multiple-Valued Logic** (M. Fitting and E. Orłowska, eds.), Studies in Fuzziness and Soft Computing 114, 117-155, Physica Verlag, 2003.
48. A. Avron, *Transitive Closure and the Mechanization of Mathematics*, in **Thirty Five Years of Automating Mathematics** (F. Kamareddine, ed.), 149-171, Kluwer Academic Publishers, 2003.
49. A. Avron, *Safety Signatures for First-order Languages and Their Applications*, in **First-Order Logic Revisited** (Hendricks et al., eds.), 37-58, Logos Verlag Berlin, 2004.
50. A. Avron, *Combining Classical Logic, Paraconsistency and Relevance*, Journal of Applied Logic 3, 133-160 (2005).
51. A. Avron, I. Lev, *Non-Deterministic Multiple-valued Structures*, Journal of Logic and Computation 15, 241-261 (2005).
52. A. Avron, *Non-deterministic Matrices and Modular Semantics of Rules*, in **Logica Universalis** (J.-Y. Beziau, ed.), 155-173, Birkhäuser Verlag, 2007.
53. A. Avron, *A Nondeterministic View on Nonclassical Negations*, Studia Logica 80, 159-194 (2005).
54. A. Avron, and B. Konikowska, *Multi-valued Calculi for Logics Based on Non-determinism*, Logic Journal of the IGPL 13, 365-387, (2005).
55. A. Avron, *Logical Non-determinism as a Tool for Logical Modularity: An Introduction*, in **We Will Show Them: Essays in Honor of Dov**

- Gabbay**, Vol. 1 (S. Artemov, H. Barringer, A. S. d'Avila Garcez, L. C. Lamb, and J. Woods, eds.), 105-124, College Publications, 2005.
56. A. Zamansky, A. Avron, *Cut-Elimination and Quantification in Canonical Systems*, *Studia Logica* 82, 157-176 (2006).
 57. A. Avron, *Non-deterministic Semantics for Logics with a Consistency Operator*, *International Journal of Approximate Reasoning* 45, 271-287 (2007).
 58. A. Avron, J. Ben-Naim, and B. Konikowska, *Cut-free Ordinary Sequent Calculi for Logics Having Finite-Valued Semantics*, *Logica Universalis* 1, 41-69 (2007).
 59. A. Avron, *Non-deterministic Semantics for Families of Paraconsistent Logics*, in **Handbook of Paraconsistency** (J.-Y. Beziau, W. Carnielli, and D. M. Gabbay, eds.), 285-320, *Studies in Logic* 9, College Publications, 2007.
 60. A. Zamansky and A. Avron, *Effective Non-deterministic Semantics for First-order LFIs*, *Multiple-Valued Logic and Soft Computing* 13, 335-372 (2007).
 61. A. Avron, *A Framework for Formalizing Set Theories Based on the Use of Static Set Terms*, in **Pillars of Computer Science**, (A. Avron, N. Dershowitz, and A. Rabinovich, eds.), 87-106, LNCS 4800, Springer, 2008.
 62. A. Avron, *Constructibility and Decidability versus Domain Independence and Absoluteness*, *Theoretical Computer Science* 394, 144-158 (2008).
 63. A. Avron and A. Zamansky, *Canonical Systems with (n,k) -ary Quantifiers*, *Logical Methods in Computer Science* 4, 1-23 (2008).
 64. A. Avron, and B. Konikowska, *Rough Sets and 3-valued Logics*, *Studia Logica* 90, 69-92 (2008).
 65. A. Avron, *5-valued Non-deterministic Semantics for the Basic Paraconsistent Logic **mCi***, *Studies in Logic, Grammar and Rhetoric* 14, 127-136 (2008).

66. A. Avron, J. Ben-Naim, and B. Konikowska, *Processing Information from a Set of Sources*, in **Towards Mathematical Philosophy**, (D. Makinson, J. Malinowski, and H. Wansing, eds.), Trends in Logic 28, 165–186, Springer, 2009.
67. A. Avron, and B. Konikowska, *Proof Systems for Reasoning about Computation Errors*, Studia Logica 91, 273–293 (2009).
68. A. Avron, *Multi-valued Semantics: Why and How*, Studia Logica 92, 163–182 (2009).
69. A. Avron, *Modular Semantics for Some Basic Logics of Formal Inconsistency*, in **The Many Sides of Logic** (W. A. Carnielli, M. E. Coniglio, I. M. L. D’Ottaviano, eds.), Studies in Logic 21, 15–26, College Publications, 2009.
70. A. Avron, *A New Approach to Predicative Set Theory*, in **Ways of Proof Theory** (R. Schindler, ed.), 31–63, onto series in mathematical logic, onto verlag, 2010.
71. A. Avron, *Tonk - A Full Mathematical Solution*, in **Hues of Philosophy: Essays in Memory of Ruth Manor** (A. Biletzki, ed.), 17–42, College Publications, 2010.
72. A. Avron and O. Lahav, *Strict Canonical Constructive Systems*, in **Fields of Logic and Computation: Essays Dedicated to Yuri Gurevich on the Occasion of His 70th Birthday**, (A. Blass, N. Dershowitz, W. Reisig, eds.), 75–94, LNCS 6300, Springer, 2010.
73. A. Avron and O. Lahav, *On Constructive Connectives and Systems*, Logic Methods in Computer Science 5, 1–20 (2010).
74. A. Avron, *A Simple Proof of Completeness and Cut-elimination for Propositional Gödel Logic*, Journal of Logic and Computation 21, 813–821 (2011).
75. O. Arieli, A. Avron, and A. Zamansky, *Maximal and Premaximal Paraconsistency in the Framework of Three-Valued Semantics*, Studia Logica 97, 31–60 (2011).

76. A. Avron and A. Zamansky, , *Non-deterministic Semantics for Logical Systems*, in **Handbook of Philosophical Logic** (D. M. Gabbay, and F. Guenther, eds.), Vol. 16, 227–304, Springer, 2011.
77. O. Arieli, A. Avron, and A. Zamansky, *Ideal Paraconsistent Logics*, *Studia Logica*, 99, 31–60 (2011).
78. A. Avron, B. Konikowska, and A. Zamansky, *Analytic Calculi for Logics of Formal Inconsistency*, In: **Logic without Frontiers**, (J. Y. Beziau and M. E. Coniglio, eds.), 265–275, College Publications, 2011.
79. A. Zamansky and A. Avron, *Canonical Signed Calculi with Multi-ary Quantifiers*, *Annals of Pure and Applied Logic* 163, 951-960 (2012).
80. A. Avron, and B. Konikowska, *Finite-valued Logics for Information Processing*, *Fundamenta Informaticae* 114, 1-30 (2012).
81. O. Lahav and A. Avron, *A Semantic Proof of Strong Cut-admissibility for First-Order Gödel Logic*, *Journal of Logic and Computation* 23, 59-86 (2013).
82. A. Avron, B. Konikowska, and A. Zamansky, *Cut-free Sequent Calculi for C-systems With Generalized Finite-valued Semantics*, *Journal of Logic and Computation* 23, 517-540 (2013).
83. O. Lahav, and A. Avron, *A Unified Semantic Framework for Fully-structural Propositional Sequent Systems*, *Transactions on Computational Logic* 14 (4), article 27, 2013.
84. A. Avron, *What is Relevance Logic?*, *Annals of Pure and Applied Logic* 165, 26-48 (2014).
85. A. Avron, *The Classical Constraint on Relevance*, *Logica Universalis* 8, 1–15 (2014).
86. A. Avron, *Paraconsistency, Paracompleteness, Gentzen Systems, and Trivalent Semantics*, *Journal of Applied Non-Classical Logic* 24, 12–34 (2014).
87. A. Avron, B. Konikowska, and A. Zamansky, *Efficient Reasoning with Inconsistent Information Using C-systems*, *Information Sciences* 296, 219-236 (2015).

88. A. Avron, *Semi-implication: A Chapter in Universal Logic*, In: **The Road to Universal Logic**, I, (A. Koslow and A. Buchsbaum, eds.), 59–72, Studies in Universal Logic, Birkhäuser, 2015.
89. O. Lahav, and A. Avron, *A Cut-Free Calculus for Second-Order Gödel Logic*, Fuzzy Sets and Systems 276, 1-30, (2015).
90. O. Arieli and A. Avron, *Three-Valued Paraconsistent Propositional Logics*, In: **New Directions in Paraconsistent Logic** (J.-Y. Beziau, M. Chakraborty and S. Dutta, eds.), 91–129, Springer India, 2015.
91. A. Avron and L. Cohen, *Formalizing Scientifically Applicable Mathematics in a Definitional Framework*, Journal of Formalized Reasoning 9, 53–70 (2016).
92. A. Avron, *Paraconsistent fuzzy logic preserving non-falsity*, Fuzzy Sets and Systems 292, 75–84 (2016).
93. A. Avron, *RM and Its Nice Properties*, In: **J. Michael Dunn on Information Based Logics** (K. Bimbo, ed.), 15–43, Outstanding Contributions to Logic 8, Springer, 2016.
94. A. Avron and N. Dershowitz, *Cayley’s Formula: A Page from The Book*, American Mathematical Monthly 123 (7), 699–700 (2016).
95. A. Avron, *Cut-elimination in RM Proved Semantically*, IFCoLog Journal of Logics and their Applications 4, 605–621 (2017).
96. A. Avron and J.-Y. Beziau, *Self-extensional Three-valued Paraconsistent Logics Have No Implication*, Logic Journal of the IGPL 25, 183–194 (2017).
97. A. Avron, *Self-extensional Three-Valued Paraconsistent Logics*, Logica Universalis 11, 297–315 (2017).
98. O. Arieli and A. Avron, *Four-Valued Parafinite Logics*, Studia Logica 105 (6), 1087–1122 (2017).
99. A. Avron and A. Zamansky, *Paraconsistency, Self-extensionality, Modality*, Logic Journal of the IGPL, Volume 28, Issue 5, October 2020, Pages 851–880, <https://doi.org/10.1093/jigpal/jzy064> (2018).

100. A. Avron and L. Cohen, *Applicable Mathematics in a Minimal Computational Theory of Sets*, Logical Method in Computer Science 14 (4), DOI: 10.23638/LMCS-14(4:1)2018 (2018).
101. A. Avron, *Quasi-canonical Systems and Their Semantics*, Synthese, <https://doi.org/10.1007/s11229-018-02045-0> (2018).
102. A. Avron, *Paraconsistency and The Need for Infinite Semantics*, Soft Computing 23, 2167–2175 (2019).
103. L. Cohen, and A. Avron, *The Middle Ground – Ancestral Logic*, Synthese 196, 2671–2693 (2019).
104. A. Avron and Y. Zohar, *Expansions of Non-deterministic Matrices and Their Applications in Non-classical Logics*, Review of Symbolic Logic 12, 173-200 (2019).
105. B. Konikowska and A. Avron, *Reasoning about Covering-based Rough Sets Using Three Truth Values*, Journal of Applied Logics - IfColog Journal of Logics and their Applications 6 (2), 359–378 (2019).
106. A. Avron, *Why Predicative Sets*, In **Fields of Logic and Computation III, Essays Dedicated to Yuri Gurevich on the Occasion of His 80th Birthday**, (A. Blass, P. Cégielski, N. Dershowitz, M. Droste, and B. Finkbeiner, Eds.) LNCS 12180, Springer, 30-45, 2020.
107. A. Avron, *The Normal and Self-extensional Extension of Dunn-Belnap Logic*, Logica Universalis, 14, 281-296 (2020).
108. A. Avron, *Weyl Reexamined: “Das Kontinuum” 100 Years Later*, The Bulletin of Symbolic Logic, 26, 26–79 (2020). doi:10.1017/bsl.2020.23 <https://doi.org/10.1017/bsl.2020.23>
109. A. Avron, *The Problematic Nature of Gödel’s Disjunctions and Lucas-Penrose’s Theses*, Studia Semiotyczne (Semiotic Studies), 34 (1), 83–108 (2020).
110. A. Avron, *A Note on Semi-implication with Negation*, in **Abstract Consequence and Logics: Essays in Honor of Edelcio G. de Souza** (A. Costa-Leite, ed.), Tributes 42, College Publications, 221-226, 2020.

111. A. Avron, *Implication, Equivalence, and Negation*, Logical Investigations, 27, 31–45 (2021). <https://logicalinvestigations.ru/issue/view/33?lang=en>
112. A. Avron, *On Formal Criteria for Relevance* in **Relevance Logics and other Tools for Reasoning. Essays in Honor of J. Michael Dunn**, (Katalin Bimbo, ed.), Tributes, vol. 46, pp. 54-64, College Publications, May 2022.
113. A. Avron, *Proof Systems for 3-valued Logics Based on Gödel's Implication* Journal of the IGPL, Volume 30, Issue 3, June 2022, Pages 437–453, <https://academic.oup.com/jigpal/article-abstract/30/3/437/6145111>
114. A. Avron and B. Grabmayr *Breaking the Tie: Benacerraf's Identification Argument Revisited* Philosophia Mathematica, Volume 31, Issue 1, February 2023, Pages 81103, <https://doi.org/10.1093/philmat/nkac022>