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A FAREWELL TO EVELYN NELSON

by Jiří ADÁMEK

Evelyn M. Nelson was born in 1943 in Hamilton. After finishing Westdale High School there she decided (against the recommendation of various advisers, but with full support of her parents) to study mathematics and natural sciences at the University of Toronto, switching after two years to McMaster University of Hamilton. Evelyn was a brilliant student, and her master's thesis became her first published paper [1]. In 1970 she completed her Ph.D. thesis supervised by Günther Bruns, the results of which were presented in her next paper [2]. She remained afterwards in the Department of Mathematics at McMaster University progressing from post-doctoral fellow to full professor (in 1983). Evelyn participated actively in the life of the mathematical community: she served as an editor of *Algebra Universalis*, was a member of several committees of the Canadian Mathematical Society, and wrote about 150 referee's reports and reviews. She was also active in university life; e.g., as a chairman of the Orientation Steering Committee and a member of the University Senate. She achieved excellent results while chairing the Unit of Computer Science in 1982-84 and when, a year later, the unit became a department, Evelyn was asked to become chairman again. But her illness forced her to decline.

Evelyn was enthusiastic and gifted, aiming at perfection in everything she did and enjoying it all vigorously: as a teacher, a visiting scientist (delivering about 30 invited lectures all over the world), or a mother of two lovely girls. But first of all, as a research mathematician. She was the author or co-author of approximately 40 research papers, and she was a fabulous person to collaborate with, contributing a lot and ready to appreciate the contribution of the others.

The first five papers of Evelyn were devoted to the lattice of equational classes of semigroups. There followed a series of more than twenty articles dealing with algebraic and categorical aspects of varieties of algebras, written alone or in a collaboration, mostly with Bernhard Banaschewski. They range from purely algebraic papers investigating equational compactness and injectivity, to purely categorical

ones, such as her very interesting characterization of power-objects in functor categories [30]. Her papers are well written and highly illuminating, throwing new light on difficult topics as, for example, the papers [18] and [25] concerning the idea of tensor product.

In the late 70's Evelyn took up the idea that algebraic problems arising in theoretical computer science call for an investigation performed by algebraists. That is how our close collaboration started. Together with Jan Reiterman, we spent a very intensive (and very enjoyable) month of Evelyn's visit in Prague to describe free continuous algebras. The result was our first joint paper [33], and our feeling that continuous algebras present a fruitful field of study. We continued that project, dealing with the logic [45], varieties [39] and other aspects of continuous algebras. The problem we found most difficult, and the solution of which we enjoyed the most, was whether continuous algebras have bounded generation - usually they do, but not always, see [38]. Furthermore, Evelyn made a clear analysis of other algebraic concepts arising in computer science, e.g., iterative theories [35] and varieties of "if - then - else -" [42].

Evelyn Nelson was not only a brilliant mathematician, but also an exceptionally enjoyable person. She was admirable in her fight with cancer, concealing her difficulties and trying to make the most of life. I see her clearly the day she was leaving Prague, only two months of life left: she was poised and full of mathematical projects, on some of which we are still working. She died on August 1, 1987, and she is being missed by many.

LIST OF PUBLICATIONS OF E.M. NELSON

1. Finiteness of semigroups of operators in Universal Algebra, *Can. J. Math.* 19 (1967), 764-768,
2. The lattice of equational classes of commutative semigroups, *Can. J. Math.* 23 (1971), 875-895,
3. The lattice of equational classes of semigroups with zero, *Can. Math. Bull.* 14 (1971), 531-534,
4. Embedding the dual of Π_* in the lattice of equational classes of commutative semigroups, *Proc. A.M.S.* 30 (1971), 37-39 (with Stanley Burris),
5. Embedding the dual of Π_* in the lattice of equational classes of semigroups, *Alg. Univ.* 1 (1971), 248-253 (with Stanley Burris),
6. Equational compactness in equational classes of algebras, *Alg. Univ.* 2 (1972), 142-155 (with B. Banaschewski),

7. On residual finiteness and finite embeddability, *Alg, Univ*, 2 (1972), 361-364 (with B. Banaschewski),
8. Equational compactness in infinitary algebras, *Coll, Math*, 27 (1973), 197-205 (with B. Banaschewski),
9. Not every equational class of infinitary algebras contains a simple algebra, *Coll, Math*, 30 (1974), 27-30,
10. The embedding of a distributive lattice into its ideal lattice is pure, *Alg, Univ*, 4 (1974), 135-140,
11. Relatively free products in regular varieties, *Alg, Univ*, 4 (1974), 14-19 (with B. Jónsson),
12. Infinitary equational compactness, *Alg, Univ*, 4 (1974), 1-13,
13. Injectivity and equational compactness in the class of ω -semilattices, *Can, Math, Bull*, 18 (1975), 387-392,
14. On the adjointness between operations and relations and its impact on atomic compactness, *Coll, Math*, 33 (1975), 33-40,
15. Boolean powers as algebras of continuous functions, *Proc, Lattice Theory Conf, Ulm 1975*, Univ. Ulm (1975), 138-145, and *Diss, Math*, CLXXIX (1980), 5-55 (with B. Banaschewski),
16. Semilattices do not have equationally compact hulls, *Coll, Math*, 34 (1975), 1-5,
17. Some functional aspects of atomic compactness, *Alg, Univ*, 5 (1975), 369-380,
18. Tensor products and bimorphisms, *Can, Math, Bull*, 19 (1976), 385-402 (with B. Banaschewski),
19. Galois connections as left adjoint maps, *Comm, Math, Univ, Carolina* 17 (1976), 523-541,
20. Classes defined by implications, *Alg, Univ*, 7 (1977), 405-408,
21. On the non-existence of injective near-ring modules, *Can, Math, Bull*, 20 (1977), 17-23 (with B. Banaschewski),
22. Elementary properties of limit reduced powers with application to boolean powers, *"Contributions to Universal Algebra"*, Coll, Math, Soc, Janos Boyai Vol. 17, North Holland, Amsterdam 1977, 21-25 (with B. Banaschewski),
23. Algebras of continuous functions in Universal Algebra, *"General Topology and its relations to modern Analysis and Algebra"*, Proc, 4th Prague Topological Symp, Prague 1977, Part B, 331-332,
24. Filtered products of congruences, *Alg, Univ*, 8 (1978), 266-268,
25. Internal Hom-functors for polarities, *Can, Math, Bull*, 22 (1979), 187-202,
26. Categorical and topological aspects of formal languages, *Math, Systems Theory* 13 (1980), 255-273,
27. The independence of the subalgebra lattice, congruence lattice, and automorphism group of an infinitary algebra, *J, Pure & Appl, Algebra* 17 (1980), 187-201,
28. An elementary proof that there are no non-trivial injective lattices, *Alg, Univ*, 10 (1980), 164-165,
29. Categorical and topological aspects of formal languages, *Math, Systems Theory*

- 13 (1980), 255-273,
30. On exponentiating exponentiation, *J. Pure & Appl. Algebra* 20 (1980), 79-91,
31. Z-continuous algebras, *Lecture Notes in Math.* 871, Springer (1981), 315-334,
32. Homomorphisms of mono-unary algebra, *Pacific J. Math.* 99 (1982), 427-429,
33. Tree constructions of free continuous algebras, *J. Comp. and Syst. Science* 24 (1982), 114-116 (with J. Adámek & J. Reiterman),
34. Completions of partially ordered sets as reflections, *SIAM J. on Computing* 11 (1982), 521-528 (with B. Banaschewski),
35. Iterative algebras, *Theor. Comp. Sci.* 25 (1983), 67-94,
36. Separately continuous algebras, *Theor. Comp. Sci.* 25 (1983), 225-231 (with J. Adámek),
37. On the non-existence of free complete distributive lattices, *Order* 1 (1985), 399-403 (with Octavio García),
38. Arbitrarily large continuous algebras on one generator, *Trans. A.M.S.* 291 (1985), 681-699 (with J. Adámek, V. Koubek & J. Reiterman),
39. The Birkhoff variety Theorem for continuous algebras, *Alg. Univ.* 20 (1985), 328-350 (with J. Adámek & J. Reiterman),
40. Recent results on continuous ordered algebras, *Lecture Notes in Computer Sci.* 199, Springer, 320-330,
41. Continuous semilattices, *Theor. Comp. Sci.* 43 (1986), 293-313 (with J. Adámek & J. Reiterman),
42. Equational bases for If-Then-Else, *SIAM J. on Computing* 16 (1987), 465-485 (with A.H. Keller),
43. Absolutely definable varieties of continuous algebras, *Alg. Univ.* 24 (1987), 267-278 (with J. Adámek),
44. Comparison of subset systems, *Comm. Math. Univ. Carolinæ* 29 (1988), 169-177 (with J. Adámek, A. Jung, J. Reiterman & A. Tarlecki),
45. On the logic of continuous algebras, *Notre-Dame J. Formal Logic* (to appear) (with J. Adámek & A.H. Mekler),

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