



## Herbert Alexander Simon: 15th June, 1916–9th February, 2001 A Life

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**Abstract** We present a concise summary of the personal and professional life of Herbert Alexander Simon.

**Keywords** Herbert Simon · Bounded rationality · Satisficing · Behavioural economics · Heuristics

The *bare-bones* of the logistics of the *personal* life of *Herbert Alexander Simon* are as follows. He was born on the 15th of June, 1916, in Milwaukee, Wisconsin and died on the 9th of February, 2001, in Pittsburg, Pennsylvania. His Parents were Arthur Simon (born 21st May in Ebersheim, Germany and emigrated to Milwaukee in 1903) and Edna Maguerite, *née* Merkel (born on 20th January, 1888, in St. Louis, Missouri). He was Jewish on his Father's side and (partly) Lutheran, Jewish and Catholic, on his Mother's side. He described himself as an atheist.

The only sibling was an elder brother, Clarence Joseph, who was 5 years older.

Herbert Simon married Dorothea Pye, on Christmas day, in 1937 (Simon, *op.cit.*, p. 66); she died in 2002. They had three children: Katherine, Peter and Barbara.

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We are indebted to **Models of My Life**, by Simon (1996), for most of the details in this essay, but also to the various biographies of Simon by Velupillai (cf., for example, **Models of Simon**, Velupillai 2018, especially chapter 2 and appendix 3).

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Simon's 'higher' education, both as an undergraduate (B.A. in 1936) and graduate student (Ph.D. in 1943, in Political Science), was at the University of Chicago and he acknowledges that the main influences, as teachers, were Nicholas Rashevsky, Henry Schulz and Rudolf Carnap (although there were others under whom he studied).

His *professional* academic career, if we are to summarise it concisely, was largely (1949–2001) spent at what was then Carnegie Tech., which later—became *Carnegie Mellon University*, where he was *Richard King Mellon Professor* (till death); but there were shorter spells at the Illinois Institute of Technology (he was, at IIT, a Professor of Political Science and also department chairman), UC-Berkeley and the Cowles Commission (when it was located in Chicago).

His 'life-long' collaborator and friend, Allen Newell thought Simon 'had put together the central idea', of all his research, viz., *bounded rationality*, 'at least 40 years ago'—i.e., 1939 (Newell 1989, p. 400). This 'central idea', together with '*satisficing*' (Simon 1957, p. 204), were the two fulcra on which Cognitive agents, computationally constrained, as *Information Processing Systems (IPS)*, *heuristically searching* through a vast space of possibilities, tackled *Human Problem Solving (HPS)* issues of *Discovery, Causality, Evolution, Identification, Learning* and much else.

Almost all of this research is encapsulated in the numerous 'Models' books he wrote, collecting many of his separate essays, lectures and Prize talks. There was, in addition, **Administrative Behavior** (six editions, from 1947), **Organizations** (jointly with James March—two editions) and his *Raffaele Mattioli Lectures* of 1993 (Simon 1997), on **An Empirically Based Microeconomics**.

The essays and chapters in these—and other—volumes are a testimony to Newell's pithy characterization of Herbert Simon's professional research record. However, neither bounded rationality, nor satisficing, 'emerged' from a vacuum; they solidified gradually.

We are convinced that *boundedly rational* agents, *satisficing* (**not** optimising), were culled from Simon's affectionate and serious study of De Groot (1978<sup>1</sup>—but the much earlier Dutch edition of 1946). This underpins Simon's analogical, computational and metaphorical studies of *Chess*, the *Tower of Hanoi* (Hinze et al. 2013) and *Cryptarithmic* (Newell and Simon 1972, especially part 2, chapters 4, 5 & 6)—which he called the *Sweet Peas*, *E-coli* and *Drosophila* of cognitive science—to obtain clues, and learn lessons of, and for, *Human Problem Solving* by *Information Processing Agents*.<sup>2</sup>

Herbert Simon was the recipient of many prestigious prizes. However, we single out two as deserving praise, and of them he was justly proud: The *ACM Turing Award of 1975* (which he shared with Allen Newell) and the *Swedish Riksbankens Award in Memory of Alfred Nobel*—also known, somewhat inaccurately, as the *Nobel Prize in Economics*—of 1978.

We do not think it is an exaggeration to claim that Herbert Simon was the 'father' of (*Cognitive*) **Behavioural Economics**; but in developing the computable basis for *Infor-*

<sup>1</sup> Simon learned the *Dutch* language to read the book; he later learned enough of the *Swedish* (for example, Simon 1996, p. 323) and *Japanese* languages to be able—at least—to lecture in them tolerably well!

<sup>2</sup> We maintain, with textual substantiation, that Simon's *IPA*'s are implemented by the same *digital* computable rules of **Alan Turing** and the *analogical* computable precepts of **Claude Shannon** (*none* of which depend on the validity of the so-called *Church-Turing Thesis*).

*mation Processing Systems*, searching vast spaces, naturally constrained by boundedly rational agents, satisficing in the *logic* of decision-making, he was able to free the framework of *Human Problem Solving* from reliance on the *Church-Turing Thesis*; nor was the *logic* of decision-making that Simon subscribed to, orthodox *mathematical logic* (Simon 1996).

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