Obituary

Jane J. Robinson

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Jane Robinson, a pioneering computational linguist, made major contributions to machine translation, natural language, and speech systems research programs at the RAND Corporation, IBM, and in the AI Center at SRI International. She served as ACL president in 1982.

Jane became a computational linguist accidentally. She had a Ph.D. in history from UCLA, but could not obtain a faculty position in that field because those were reserved for men. Instead, she took positions teaching English, first at UCLA and then at California State College, Los Angeles. While at LA State, where she was tasked with teaching engineers how to write, Jane noticed an announcement for a talk on Chomsky's transformational grammar. She went to the talk thinking this work on grammar might help her teach better. Although its subject matter did not match her expectations, the talk marked a turning point in her career.

In the late 1950s, Jane became a consultant to the RAND Corporation group working on machine translation under Dave Hays (ACL president, 1964). From the beginning, Jane was concerned with identifying connections between different traditions in formal grammars and their corresponding detailed linguistic realizations. Her 1965 International Conference on Computational Linguistics (COLING) paper, "Endocentric constructions and the Cocke parsing logic" (Robinson 1965), is a beautiful example of connecting specific linguistic phenomena to parsing strategies in a way that preserves the nature of the linguistic phenomena, endocentric constructions. While at RAND, Jane became colleague and friend to many in the machine translation and emerging computational linguistics world, including Susumo Kuno (ACL president 1967), Martin Kay (ACL president, 1969), Joyce Friedman (ACL president, 1971), and Karen Sparck Jones (ACL president, 1994).

In the late 1960s, Jane moved to the Automata Theory and Computability Group at the IBM Thomas J. Watson Research Center in Yorktown Heights, NY. She used her knowledge of formal work on grammars and parsing to draw correspondences between Dependency Grammars and Phrase Structure Grammars. Although Jane came

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from the Dependency Grammar tradition, her balanced, careful analysis of tradeoffs enabled others to bridge the approaches. Her 1967 COLING paper, "Methods for obtaining corresponding phrase structure and dependency grammars" (Robinson 1967), is a wonderful example of her understanding of the seminal issues underlying these different systems. She subsequently published the classic paper connecting dependency structure and transformational rules, "Dependency structures and transformational rules" (Robinson 1970b). This paper exemplifies Jane's scholarship and her deftness in dealing with the formal and computational issues of language processing in a very fair and informative manner. Her 1970 paper, "Case, category and configuration" (Robinson 1970a), demonstrated in a very convincing way the possibility of formally interpreting Fillmore's case grammar in terms of dependencies, in a more economic fashion and without any loss of information.

In 1973, Don Walker (ACL secretary-treasurer, 1976–1993) recruited Jane to the speech group in the AI Center (AIC) at SRI International. Jane remained a key member of the AIC's natural language group until she retired in the mid 1980s. She made major contributions to a wide range of research, ranging from grammars for speech under-standing systems and dialogues to such discourse issues as codes and clues in contexts. For several of the NLP systems SRI developed in the 1970s and 1980s, the grammar was the coordinating point for all knowledge about the language, so Jane interacted with everyone developing any component of the system, from the architecture through semantics and discourse. Speech processing was a bit "deaf" in those days, and Jane frequently remarked that she had to write not only a grammar for English, but also its dual (one for non-English to rule out bad parsings). During her time at SRI, Jane wrote some of the most comprehensive grammars for NLP systems.

One of us (Barbara Grosz) notes that Jane's contributions to the AIC's natural language group went far beyond her official grammar writing responsibilities. She served as mentor (before that word was widely used in academia) for a large group of "young Turks," as she referred to those of us in the younger cohort involved in building NLP systems; she was our in-house expert in linguistics; provided critiques of drafts of papers, making them shorter, clearer, and more scholarly; debugged our ideas across the full spectrum of system components; and introduced us to the most senior people in linguistics and computational linguistics.

Another of us (Aravind Joshi, ACL president, 1975) recalls meeting Jane in September 1975 at an NLP workshop at the University of Michigan. At that time, he and his students were working on two separate areas of computational linguistics. One of them concerned the minimal formal machinery needed for representing structural aspects of language and the other one dealt with some aspects of cooperation in natural language interfaces to databases. After just a brief discussion with Jane, when she asked what he was doing, it became clear to him, "that I was in the presence of someone who had already worked on such diverse areas. From thereon, whenever I had an opportunity to meet with Jane, I took advantage of her deep understanding."

And the third of us (Eva Hajicova, ACL president, 1998) recalls the important ties Jane formed with Praguian linguists interested in formal grammar starting in 1965, when the founder of the Prague group, Petr Sgall, first visited the United States and met Jane at RAND. Their common research interests in computational linguistics, par-ticularly Dependency Grammar, forged deep personal relationships between Jane and Sgall's linguistics group in Prague. Jane visited Prague twice, once before and once after the change of the communist regime. During difficult political times, Jane provided the Prague group with linguistics literature published in the West, and she introduced them to her colleagues and students, yielding additional important connections, which

have continued to this day. Eva notes that, "only those who have the same historical experience as we in Prague have had can appreciate fully how important such activities were for our research and for our students."

Jane read broadly and her training as a historian made her a careful and deep scholar. Throughout her life she would go to talks that seemed a bit far afield and come back with new ideas. For those who worked with her she was an invaluable source of out-of-the-box thinking as well as the go-to person for what to read in linguistics. Jane often said that had she been born in a later generation, she would have become an astronomer. Given her love of exploration, she might have been an astronaut. (You can see this bent in the poem she wrote for her poetry class friend's funeral, "Time To Go" [Robinson 2008]). Lucky for all of us, she wound up in computational linguistics.

Jane was the mother of four children and the proud grandmother of two grandsons, one now a lawyer, the other an actor. She extended her family to encompass her colleagues, building camaraderie through dinners at her home—lamb stew, mostly—and picnics at Foothills Park in Palo Alto, activities which drew the families of AIC researchers together and yielded many lifelong friendships. Jane built such friendships throughout her career. In responding to our questions about Jane's time at RAND, Dave Hays's wife Rita noted that Jane remained close friends with her and Dave even after Dave went to SUNY Buffalo and Jane to IBM Yorktown Heights and then SRI. Rita and Jane were traveling and hiking companions into Jane's nineties.

To celebrate her sixtieth birthday, Jane "got in shape" to hike in the Himalayas around Annapurna. She came back with beautiful photos and the desire to join the young Turks who went backpacking in Yosemite. (Although she had been a regular visitor to Yosemite since her forties, she had not backpacked before.) She offered to drive everyone in the huge Chrysler Imperial she had gotten to feel safe driving in New York. Jane backpacked into her late seventies, then switched to the luxury of the High Sierra Camp tent cabins and later to a small cabin with an inside shower. For those lucky enough to visit Yosemite with her, she was as much a guide to the mountains as she had been a guide to linguistics.

For people who worked with Jane at SRI, she was a towering figure in the field, a wonderful colleague who imparted deep wisdom as well as linguistic facts, and a dear friend. She was senior to most of the members of the AIC. Looking back on her arrival, Peter Hart (a director of the AIC) noted that Jane's presence changed the tone of the early SRI AI Center. She brought not only a keen intellect and depth of knowledge, but "also a gentleness, openness, and generosity of spirit." Gary Hendrix (who led the NLP group at SRI for several years) remembers that for many who worked with her at SRI, "Jane was like a second mother, loving and giving and nurturing." Jerry Hobbs (ACL president, 1990) recalls that, "one of the things I learned from her, though imperfectly, was how to be tough with grace." Several remember Jane as one of a handful of elder statesmen that their generation could look up to.

Jane was a colleague and friend of Ray Perrault (ACL president, 1983, and current AIC director) from the time he was a Ph.D. student at the University of Michigan. In the early 1970s, Jane frequently visited Joyce Friedman (ACL president, 1971), her old friend and his advisor. Ray remembers Jane was a gentle but firm critic of his thesis, and he fondly recalls her passing through in her huge Chrysler on her move from IBM to SRI. Ray was ACL vice president when Jane was president, and she was delighted when he decided to join the young Turks at SRI. Subsequently, she "even tolerated me as her manager until her retirement and became doting godmother to my son."

Jane made a difference in people's lives, not just their research. Her death marks the end of an era and the passing of an icon. We will miss her greatly.

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