Anne-Louise Guichard Radimsky: An Educator and a Champion for Diversity in Computing

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The life and career of Anne-Louise Radimsky[1] intersects continents, cultures, and disciplines, and reveals the pathways available to women in the early years of computer science in the United States and in France. Having accepted a scholarship to study computer science in the United States in 1966, a young aerospace engineer, Anne-Louise Guichard (later Radimsky) embarked on the lifelong journey to become a cherished computer science educator and mentor. In the 1960s, the nascent French computer industry was crumbling and, in 1966, the French government resorted to Plan *Calcul* to support the development of a national computer industry and education.[2] That move came too late as the history of computing in France became one of "transfer of technology and knowledge."[3] In the case of Radimsky, that knowledge was never transferred back as her career unfolded in the United States where the booming computer field was attracting trained computer professionals.[4]

Leaving France: Moving from Avionics to Engineering and Computer Science

The crossing of the Atlantic (or Pacific) ocean[5] to America divides the past from the future for many immigrants as well as students coming to the United States. Although French universities entered computing research early, by the mid-1960s,[6] the French computer industry was losing market to IBM and a French computer company, the Bull, came under control of General Electric.[7] In the wake of government investment to support development of a national computer industry and the new discipline, a young female engineer, Anne-Louise Guichard, came to California to learn at the frontiers of the new discipline. She could not have anticipated that a pure happenstance would put her at the center of social tensions and the computer revolution. At that time, the study of computer science in the United States was just another step in the long chain of accomplishments.

Born in France during the second world war, Anne-Louise enjoyed learning and excelled in math and languages. As a student, Anne-Louise always tried to challenge herself by looking for the toughest path. Mathematics was her strength. In addition to mathematics and sciences, she chose to study Greek because it was challenging and esoteric. After graduating from high school, she attended preparatory classes and passed competitive exams to get into an engineering school. She entered École Nationale Supérieure de l'Aéronautique (also known as SUPAERO), one of the best schools for aerospace engineering, majoring in Systems Theory and specializing in Avionics. The choice of major proved to be beneficial. It was a popular area of research that saw a lot of developments in previous decades, and it was the foundational knowledge used by engineers developing missile guidance systems. In addition to her research responsibilities at the Centre d'Études et de Rechershes en Automatisme, she immediately received a lecturing position to teach Systems Theory to engineers at her school in Paris and later in the Engineering School of Tarassa, Spain.

Just three years earlier, 23-year-old Anne-Louise would not have even considered venturing far from home, but now things had changed. Recent experiences with traveling and teaching boosted her confidence and transcended cultural borders. When she saw a memo about a scholarship offered by Centre National de la Recherche Scientifique (CNRS) to study computer science in the United States of America, neither the distance nor the undertaking seemed too daunting. The scholarship was generous and it was an incredible opportunity to join one of the top schools in the United States. A pure happenstance would help her make the decision of which school to attend. A colleague helping her with paperwork has been at Berkeley and a brief conversation that Anne-Louise could be working at Berkeley too, put Berkeley at the top of her list of schools. The paperwork

was sent before Anne-Louise made up her mind. When the acceptance letter came, it was time to finish summer teaching and pack the suitcase for California.

University of California, Berkeley

Having received proper "French education," Anne-Louise was happy about landing at Berkeley. She knew that students who graduated from Berkeley were of "high caliber" and the school was very selective in their recruitment. Furthermore, it had a vibrant French community that Anne-Louise would revel in and that would make her feel more at home. Since the mid-50s student political involvement at the University of California, Berkeley has "undergone a rapid development," and with increasing civil rights activities in the Bay area, Berkeley students also were becoming active.[8] In May 1964, they took part in the Sheraton Palace demonstration and later challenged their university's ban on political organization on campus, defending their right to free speech. The events associated with the Free Speech Movement unleashed student energy and prompted institutional changes, although some argue that those changes did not go far.[9] Nevertheless, students' concerns about their political rights on campus accelerated the transition from traditional paternalistic university leadership to legal-rational style,[10] more congruent with knowledge communities.

Before her arrival to Berkeley, Anne-Louise knew very little about computers, even though there was a computer in her school. By 1957, universities in Paris, Grenoble, and Toulouse had acquired computers[11] and started teaching and research.[12] Thus, in early 1960s, École Nationale Supérieure de l'Aéronautique had a computer and initiated some programming activities. Unfortunately, Radimsky's studies from 1960 to 1963 did not include any computer courses. However, the study of avionics, which included electronics, controls, and mathematics, was a good preparation for computer training. The courses at Berkeley Master's program in Electrical Engineering did not seem very hard. Anne-Louise obtained her degree in one year. Although, it fulfilled her goal, she felt that she did not know enough about computers to go back to France, and she decided to stay for a Ph.D. degree.

As her studies progressed, Anne-Louise became increasingly interested in artificial intelligence (AI). A young artificial intelligence graduate, Edward Feigenbaum, joined Berkeley's School of Business Administration in 1960.[13] However, Feigenbaum's effort to start AI research at Berkeley would not succeed and the institution would fail to develop that research area for over two decades (1960s–1970s).[14] Berkeley did not have full time professors in AI and the courses in AI were taught by visiting faculty.

One of them was James Robert Slagle, a student of Marvin Minsky, who after working at MIT, moved to Lawrence Livermore National Laboratory, and for a few years (1964–1967) was teaching at Berkeley. Slagle, known for his work on expert systems, at that time was devising algorithms and heuristics for automating theory-proving. Not only was he incredibly talented, but he was also blind. She remembered him for the rest of her life because attending a course from him was a very special experience. Unfortunately, in 1967 Slagle left Berkeley and the department recruited other temporary faculty from Stanford Research Institute (SRI).

Not having a permanent faculty in AI, Anne-Louise had to forge the disseration committee from the best her department had to offer. After a rough start in statistics, she dropped statistics minor for linguistics and took more courses in linguistics. It seemed a logical decision as mathematics and languages were her strengths. That decision paid off. Taking advice from the Dean, her new mentors included a computational linguist, Stephen Coles (who studied under Herbert Simon), and a young theoretical computer scientist, Philip Spira.[15] Her research blossomed in a helpful and supportive environment. Building on Chafe's semantic language theory, she analyzed and created semantic structures for a computer program SPEC, which was written in a string-oriented language, SNOBOL IV.

During the development of her thesis, Radimsky went to SRI on a regular basis. Next door, at the SRI's Research Center for Augmenting Human Intellect, Douglas Engelbart and his colleagues were developing future computer interfaces and interactions that they would demonstrate in December 1968 at the Fall Joint Computer Conference in San Francisco of the Association for Computing Machinery and the Institute of Electrical and Electronics Engineers. Being so close to those developments, at that time, Anne-Louise did not realize how important they would become for the history of computing.

Student life at Berkeley in late 1960s and early 1970s was wonderful—seminars, talks, opportunities for engagements, and a vibrant French and international student community. Anne-Louise became the founding member and president of the Foreign Student Association at Berkeley. There she met her husband, Jan Radimsky, and made lifelong friends. At the time of graduation in 1973, she was one of the three women receiving a Ph.D. in Electrical Engineering and Computer Science.

At the Crossroads

At the time of her graduation in 1973, the number of computer science programs was expanding and so was the demand for teaching and research faculty. Anne-Louise received a few offers, one of which was from MIT that

offered her a position of a researcher in a lab. Her husband was reluctant to go to Boston, because it would not be easy for him to find a job. The young couple decided that California was a better place for their careers and their family. The job at MIT might have been short-lived or it could have been more nurturing for research. At that time, Anne-Louise was not in a position to accept that uncertainty.

Applied Research at the University of California, Davis

Coming from an engineering school, she was encouraged to choose a department where engineering was welcomed. The University of California, Davis seemed to be such a place. The chair of her department at UC Davis was French and that was helpful. Anne-Louise accepted the position of Assistant Professor and the young family moved to Sacramento. Computer science in the College of Engineering at UC Davis was located in the department of Electrical Engineering and Computer Science (EECS). In the 1980s enrollment grew significantly and in 1992 a department of Computer Science was created with fewer than 10 faculty members splitting EECS into Computer Science and Electrical and Computer Engineering.[16] She was the first woman EECS hired and, she remained the only woman at her college until her departure in 1979.

The work atmosphere at UC Davis was not easy. Being a woman in academia in a technical field challenged gender stereotypes and only added to the differences and estrangement that her foreign identity already represented. Being a professor not only was associated with relentless pursuit of publications and career, but it also included privileges, expectations, and formal or informal rules that were associated with being male. Men did not do secretarial work or took time to have children. It was a custom for men to pay for women and, hence, Anne-Louise was a liability to her colleagues if she was to join them for lunch. It became more of an issue when she was in charge of the seminars and had to take out guest speakers. Most men were not used to women paying for them. Since there was no maternity leave, she was lucky to have her first child in July and have a good babysitter and husband with a flexible schedule. It also was difficult to relate to women married to her colleagues because the concerns of a typical faculty wife were all about supporting her husband.

Being an engineer, Radimsky continued her research in semantic text analysis searching for applications and problems that it could solve. She envisioned that, structured as a sematic network, such a system can be used to query patient medical records. Unfortunately, neither time nor environment were conducive for those innovations. Theoretical research was rewarded more in academia than

applied research. The department hired a few technical people who did applied work and were told that applied work would be rewarded by the department. Those promises vanished with time while the expectations of publications prevailed. Publishing "gibberish" for publication sake was against Radimsky values. She dedicated herself to teaching and active engagement in campus activities. She was an advisor for SWE student chapter and IEEE student branch and an executive member of several administrative committees. In 1978, for her sabbatical, Anne-Louise joined Hewlett-Packard working on designing tools for the HP 3000, a scanner and a parser for COBOL 74. She could have remained in industry, but her passion, in line with her first work experiences, lay in teaching.

Finding Balance at the California State University, Sacramento

In 1979 Radimsky joined California State University in Sacramento (CSUS) where she could devote herself to something she really enjoyed - teaching. Remaining a devoted member of IEEE Sacramento section, her research focused on pedagogy and advising. She was a tough, but supportive teacher with high standards, expecting her students to work hard and to actually learn the material. She actively participated in mentoring various diversity outreach programs at her institution. In 1992, she became a chair of the Computer Science department at CSUS. Having a passion for community engagement, she enjoyed challenging decision-making positions.

She remained actively involved in campus life, participating in industry forums, coaching olympiads and local high schools, and supporting various diversity initiatives. Teaching undergraduate computer science classes, she observed that women students do not go to computing. In a cohort of approximately 37 students, approximately 10% of them are women. Having excelled in math, Radimsky was puzzled why other women do not understand math or technology. Her own identity challenges gender stereotypes and she feels empowered to help students who want to pursue science, technology, engineering, and mathematics (STEM). Direct and humorous, she brought a touch of European education to the training of future computer professionals in the United States. With passion and enthusiasm, she continues to teach at the same beloved institution where she is welcomed and respected.

Family always has been an important part of Radimsky's life. She is proud of her family and of her husband who helped her raise their two daughters. As American parents, perhaps, the Radimskys were not ideal: they did not attend or enjoy sport games or did what other American families usually do. The Radimskys as parents resolved

their identity by accepting cultural differences and embracing their bicultural identity. The culture conflict is more apparent in the next generation, in their two daughters who have to resolve their French-American-Czech identity. For Anne-Louise, on the other hand, balancing her French-American identity by having a loving family, and a technical, exciting, and rewarding job was a way to define herself and find purpose in life. Alternative pathways would have required belonging to different networks, embracing different values, and a different self.

References and notes

1. This biography is based on the interview (and Curriculum Vitae) with Anne-Louise Guichard Radimsky conducted by the author on December 11, 2013 for the project "Careers and Contributions of the First Doctoral Women in Computer Science," sponsored by the ACM History Committee.
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3. P. Mounier-Kuhn, "Prologue: History of Computing in France," *IEEE Annals of the History of Computing,* vol. 11, no. 4, 1989, pp. 237–240.
4. According to the poll conducted by UC Berkeley for 1965–1982, 68% of foreign-born doctoral graduates in electrical engineering and computer science at that time remained in the United States. National Research Council, *Foreign and Foreign-Born Engineers in the United States*, National Academy Press, 1988, p. 182.
5. In the 19th century, the transatlantic journey took approximately 16 days, in the early 20th century 4 to 5 days, but by 1950 with the prominence of regular commercial flights the journey took only hours (currently it takes approximately eight hours to fly from Paris to New York). See P. J. Hugill, Peter J. *World Trade Since 1431: Geography, Technology, and Capitalism*, Johns Hopkins University Press, 1993.
6. Mounier-Kuhn, "Prologue: History of Computing in France."
7. Mounier-Kuhn, *L'Informatique en France, de la seconde guerre mondiale au Plan Calcul. L'émergence d'une science*.
8. (Pp. 1-2.) K.E. Gales, "A campus revolution,". *British J. Social Psychology*, vol 17, no. 1, 1966, pp. 1–19. Engineering students initially were not involved and only after the covert bombing campaign in Cambodia in the Spring of 1970 they became active (from the personal communication with Radimsky).
9. R. Cohen and R.E. Zelnik, *The Free Speech Movement: Reflections on Berkeley in the 1960s,* University of California Press, 2002.
10. C.M. Otten, *University Authority and the Student; The Berkeley Experience*, University of California Press, 1970, p. 159.
11. The available French computers are described in P. Mounier-Kuhn, "Specifications of Twelve Early Computers Made in France," *IEEE Annals of the History of Computing*, vol. 12, no. 1, 1990, pp. 3–4.
12. Mounier-Kuhn, "Prologue: History of Computing in France."
13. D.A. Grier, "Edward Feigenbaum" *IEEE Annals of the History of Computing*, vol. 35, no. 4, 2013, pp. 74–81.
14. F. Rose, *Into the Heart of the Mind: An American Quest for Artificial Intelligence*, Vintage Books, 1985, p. 21.
15. A.-L.G. Radimsky, *Semantic-analysis of English Text by Computer* (Order No. 0283444), 1973. Available from ProQuest Dissertations & Theses A&I. (302680039).
16. This information was provided by Anne-Louise Radimsky. Some historical information about the College of Engineering at the University of California, Davis can be found at http://www.lib.berkeley.edu/uchistory/general_history/campuses/ucd/colleges.html. UC Davis has (at least) two computer science programs: one in the College of Engineering, and one in the College of Letters and Science. See http://catalog.ucdavis.edu/PDF/ECS.pdf

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