

Tefko Saracevic (1930-2024) and an Idea Whose Time has Finally Come: The Information Utility.

*Victor Hugo famously said that no army can defeat an idea whose time has come.
But some ideas arrive before their appointed times, and lie more or less hidden.
Tefko Saracevic conceived such an idea. Here's a reminder.*

1. Library and Information Sciences

In the earliest days of Information Science Tefko saw that there was going to be some kind of, perhaps uneasy, three-way marriage between Librarianship and Computers and Information Theory. He put together a landmark collection of key papers [1] - you can buy a copy for about \$500 today. What was true then (and is still true today) is that almost no one could read and understand all of those papers and perspectives -- many of which have been rediscovered over the intervening half century.

Tefko was globally known in both Librarianship and Information Science. In the world of Librarianship, he was the traveling face of an ambitious Rockefeller Institute project to bring the benefits of modern (1970s) libraries to developing and third world countries. He traveled tirelessly, bringing future world leaders to the US, to study in the program at Case Western Reserve University, and launching programs to benefit education and research around the world.

In the world of Information Science, Tefko worked on one of the earliest projects, headed up by Allen Kent, for the American Chemical Society, which had asked whether computers could increase the power and usefulness of their magnificent, but labor intensive Chem Abstracts product. Over most of the next half-century, Tefko worked to develop a deeper understanding of the concept of "relevance." It had been operationalized in the Cranford experiments, and the work of Gerard Salton, by naming it, and asking grunt workers (students, graduate students -- this was before the Amazon mechanical Turk community) to decide whether "the given paper is relevant to the given stated query or search terms." The presumption was that "everybody knows what relevance is." And, in any case, the folks collecting the information wanted to serve an unknown community of users, and implicitly just supposed that their annotators were a "representative sample." Tefko challenged that assumption in his paper: "Relevance: A review of and a framework for the thinking on the notion in information science." *Journal of the American Society for information science* 26, no. 6 (1975): 321-343.

With the explosion of the World Wide Web, searchers are no longer limited to library patrons, and correspondingly the notion that there was such a thing as the "representative user" became harder and harder to believe. Tefko worked for several decades to unravel the complexities of what that apparently simple term could mean to diverse human beings, at varying points in an extended quest to "find the information they want, or need, or both." The complexity and subtlety of the resulting findings are summarized in his book, *The Notion of Relevance in Information Science: Everybody knows what relevance is. But, what is it really?*. Springer Nature, 2022.

Each of these themes of his career had monumental impact, one on the world of library users, and the other on the world that studies human behavior in seeking information.

However, neither of these has the prophetic quality that we find in his early work on the notion of an “information utility.”

Tefko’s summary of the approach is memorialized in [2] To quote the key passage:

THE NATURE OF INFORMATION PROBLEMS

Why should we attempt to consider information, or to be more precise, information systems, as a utility-type of enterprise? Generally for two reasons: first, the nature of information problems existing at present and anticipated in the future requires solutions that are considerably more user-oriented than we have now; and second, the precedent of successful operations of public utilities as user-oriented enterprises suggests that the concepts developed in connection with utilities may be applied to operations of some information systems. Let us first consider aspects of the information problems that invite a general reorientation in our thinking about information solutions.

At about that time Tefko invited me to join Project INFUT - Information Utility. This project, 20 years ahead of its time, was conducted under the aegis of the CWRU Complex Systems Institute, where I was Associate Director. I will never forget sitting in for the first time with their project. After hearing the Library Scientists, the Computer Scientist, and the Operations Researcher all speak I asked “so, can you tell me what an information utility is?” They agreed that it was still a dream -- the best metaphor was “a faucet in the house that could be opened to get the information that you need.” But the path forward was not clear, and the discussion was what one would politely call “theoretical.”

This was some 18 years before the birth of the WWW; 23 years before the birth of Google; and almost 50 years before the birth of the LLM systems that now respond to our questions with well-formed (if not always correct) syntactical utterances. At that time, portable satellite phones were very expensive gadgets available only to heads of state and high-level industry leaders. No one imagined a time when 10-year olds would carry pocket computers connected to hundreds of billions of distinct pages. Until a few years ago, no one imagined that a query to those resources would be answered with a plain-language summary that sounds as if it were written by a human expert.

The first public access to an LLM, chatGPT came out in late November 2022. By May of 2023 the general media were aware of them, and of the fact that they would confidently produce assertions that simply were not true. Tefko and I never had a conversation about this disturbing development. But I am sure he would have been posing the newly important question about relevance: how can things be provided to us as relevant answers when they are not even true?

[1] Introduction to Information Science. Compiled and edited by Tefko Saracevic. Pp. xxiv+751. (Bowker: New York and London. 1970.) \$27.50.

[2] https://link.springer.com/chapter/10.1007/978-94-011-7759-7_24#preview (see also <https://files.eric.ed.gov/fulltext/ED097914.pdf>).

2. The Man, the Friend

The remainder of this note is a personal reminiscence about a man who became a mentor and friend as I made a “mid-career shift” from theoretical Physics to Library/Information Science.

Why do students in the Master’s programs at Rutgers School of Communication and Information (SCI) call faculty by their first names? It’s because Tefko Saracevic, who was for many years our most prominent scholar, despaired as our New Jersey students butchered his family name. When Prof. Saracevic began each course by saying “I am Tefko” we lesser lights could scarcely ride a higher horse.

Tefko Saracevic was a man of unbridled optimism and enthusiasm. He was born in 1930, in Sarajevo, a legendary city with a deep and rich history. At the time of his birth, it was part of the recently renamed Kingdom of Yugoslavia. As a pre-teen he saw Jewish friends “disappear from school” and was aware that some people were sent to live in camps, but did not know what was happening there. During the war, life was tough. He recalled to me that his father had somehow once gotten hold of a pig. They kept it in their cottage, and fed it, until the time came when they had to eat it. He recalled that his sister was aghast at the idea, but even in his teens he understood an important fact about real life.

After the war, Tefko was an avid mountaineer. One fall broke his arm, which was set and put into a cast. When his mother learned that he had gone rock climbing the very next weekend she asked the surgeon to put his other arm into a cast, so that the broken one would have a chance to heal.

After the war Yugoslavia became turbulent, then communist, and fell “behind the Iron Curtain.” While an engineering student in the University of Zagreb, Tefko met Blanka Regina Kobovac, who was studying law and economics. She was two years his junior. They courted and decided to marry. But their plans were hindered by the fact that Tefko’s resistance to the regime had “brought him to the attention of the authorities.” An experienced mountaineer, he escaped over the Alps to Austria in 1957. Blanka joined him in Vienna, and they were married near the end of 1958.

Together, they emigrated to America, and settled in the Ohio city of Cleveland, which has a rich and complex emigre community, with multiple ethnicities and religions. In the 1950s, Croats and Serbs in Cleveland lived comfortably together, and although they went to different churches, they shopped in the same stores, and often married each other with family blessing. Blanka worked as a nurse. Tefko washed dishes and swept factory floors to help support them. They both studied librarianship at Western Reserve University, where Tefko completed his Master’s (1962) and Ph.D. (1970). He taught and conducted research there and joined the faculty.

He and I first met in 1973, when I was “parachuted into” the Library School at Case-Western Reserve University. He appeared at my office door brandishing a paper by Michael Buckland, in which he computed the failure rate at each of several stages of the familiar (in those days) process of finding a book in the library catalog, and on the shelf, and checking it out. Said Tefko: “Something is wrong here! I added up the failure rates, and the total is more than 100%. That is nonsense!” This led to my first venture into the operations research of librarianship. The solution was something that I knew from the physics of radioactive decay, called a Markov random process. It was very much not part of librarianship then, but in the brave new age many digital librarians have become familiar with it.

As we worked together we discovered other connections. We lived on the same (half-mile long) block in a Cleveland suburb; our kids went to school together. Tefko was the leading scholar in Cleveland’s Croation émigré community – and my wife and I had served as dance coaches to one of Cleveland’s Junior Tamburitza Croatian song and dance groups.

Beginning, I think, in the 1980s Tefko was traveling the world, as the Rockefeller Foundation’s special envoy to help develop librarianship in “third world countries.” This job had him on the road so often that Blanka joked that their marriage could last so long only because Tefko was off traveling half of the time. In one of many “asides” Tefko explained that when Ken Warren of the Rockefeller asked him to take up the job, Tefko replied “only if I can travel business class.” Well, when you are “as rich as Rockefeller” that’s not a problem.

As editor-in-chief (1985-2008) Tefko brought the journal *Information Processing and Management* from genteel obscurity to a position of prominence. In 1985 he moved from CWRU to Rutgers, and in 1991 he was promoted to the highest professorial rank, now called Distinguished Professor. It was about that time that I joined him and Rutgers in what was then called the School of Communication, Information and Library Studies. We continued working together; on a project evaluating academic libraries [3]. To be honest, our method of working involved frequent, and not very quiet debates about what we hoped to find and how we were going to go about finding it. After one such “frank exchange of views” the talented Master’s student who had joined the project to administer the old-fashioned surveys – face to face with library users – approached me, with some alarm: “I don’t know if I should ask this. Are you guys actually about to cancel the whole project?” I assured her that the debate she has just witnessed was our favored method of reaching agreement.

Although we did not discuss politics, I think Tefko viewed with astonishment the acceptance of Marxist concepts by many of our academic colleagues; he had seen those concepts worked out in the reality of Tito’s Yugoslavia. But he had an ability, honed by having experienced real difficulties, to remain calm amidst the teapot tempests that so often enchant us in the academy.

He was a trusted friend, a mentor, and an example of urbanity and tolerance that it is hard to find today. When Rutgers hosted a day of scholarship in honor of Tefko and his work, we made sure to include a Croation folk dance combo headed by Clevelanders Walt Mahovlich; Tefko was right there in the circle, dancing the kolo.

May his memory be a blessing.

[3] Kantor, Paul B.; Saracevic, Tefko. (1995) Studying The Cost and Value of Library Services Final Technical Report Part 1: Models, Methods, Results. Alexandria Project, Rutgers University. Available at: https://www.researchgate.net/profile/Tefko-Saracevic/publication/333293888_51_Copyright_c/links/5ce57dc7299bf14d95b1c465/51-Copyright-c.pdf

Because it contains many important facts about Tefko's origins, we include here the obituary of his wife, who pre-deceased him.

3. Blanka R. Saracevic Obituary

(From: <https://www.smithcorcoran.com/obituaries/Blanka-R-Saracevic?obId=25363239>)

Blanka Regina Saracevic, beloved wife and mother, sister and grandmother, passed away from natural causes on Saturday, Jan. 18, 2014 in Glenview, Ill. She was 81 years old. Mrs. Saracevic led a full life, spanning two continents and countless lives. She had a big heart and a bigger impact on the people she touched. Most importantly, she was loved. Born in the Macedonian city of Skopje, on Oct. 22, 1932, Mrs. Saracevic was the first of three daughters born to Ivo and Ruzica Kobovac, of Croatia. Mr. Kobovac was a lawyer who worked in law enforcement, and it was this work that brought the family to the southern region of the former Yugoslavia when Mrs. Saracevic was born. Shortly after her birth, the family returned to its native Zagreb, where Mrs. Saracevic's two sisters, Vesna and Zeljka, were born. Mrs. Saracevic enjoyed a happy childhood despite growing up in an era marked by turbulence. As World War II passed through the Balkans, leaving pain and suffering in its wake, Mrs. Saracevic passed into adolescence, unsure of what the future would bring. She studied at the 6th women's high school in Zagreb, and showed particular promise as a musician, studying piano.

She went on to study economics at the University of Zagreb. It was also in Zagreb where she met her future husband, Tefko Saracevic, a young mountaineer and aspiring engineer with whom she would spend the rest of her life. The young couple courted on the banks of the Sava River in Zagreb and along the peaks of the Velebit mountain range near the Adriatic Sea. After a golden period of courtship spent with friends and family, most of whom affectionately called Mrs. Saracevic by the nickname Baka the couple decided to marry. But first, a great journey awaited. Mr. Saracevic escaped from communist Yugoslavia over the Austrian Alps in 1957, eventually finding Vienna and sending for Miss Kobovac. They were married in the Austrian city on Dec. 13, 1958, and Mr. Saracevic headed off to a new life in America, settling in the Ohio city of Cleveland. Once settled, Mr. Saracevic sent for his young bride, in Jan. of 1960, and the two began stitching together the fabric of their own American Dream. Times were difficult at first. Mrs. Saracevic worked as a medical technician, drawing blood from patients, while her husband found work washing dishes and working maintenance at a Cleveland factory. But both believed education held the key to success. And both pursued that dream. Mr. and Mrs. Saracevic studied at Case Western Reserve University in Cleveland, with Mr. Saracevic earning a Doctorate and Mrs. Saracevic earning a Masters degree, both in Library and Information Science.

At one point, Mrs. Saracevic studied under the tutelage of her husband, who was an associate professor at the time. And through it all, the couple dreamed of starting a family. That dream became reality with the birth of their first child, a daughter they named Aida. A second child, a

son named Alan, was born a few years later. Her American Dream realized, Mrs. Saracevic settled into a life working as a librarian and raising her children at the family home on Ormond Rd. in Cleveland Heights. The family found happiness and prosperity in Cleveland, sharing the good times and bad as the children grew older. They eventually moved to a larger home in Euclid, Ohio. Mrs. Saracevic found professional success as a children's librarian in the Cuyahoga County Public Library system, working at multiple branches. She was best-known for her heartfelt story hours and her big hugs.

Mr. Saracevic found success as a professor and author, working at Case Western Reserve, earning him invitations to lecture around the globe. The couple would travel the world for decades, following Mr. Saracevic's professional journey to exotic locations like Egypt, Singapore, Hong Kong and Brazil, where he would lecture at foreign universities and she would explore the surrounding cultures. Back home, in the United States, change was afoot. After spending a quarter-century in Cleveland, Mr. Saracevic's career as a university professor took him to a new post at Rutgers University in New Jersey, where Mrs. Saracevic joined him and continued her career as a librarian in the city of New Brunswick. It was here that she eventually retired, as Director of Children's Services at New Brunswick Public Library, and focused on raising her children, and eventually her grandchildren. Mrs. Saracevic's two children had both graduated high school and college, with her daughter eventually graduating law school at Cornell University. Aida became a successful lawyer and business executive. Mrs. Saracevic's son, Alan, a graduate of Rutgers College, became a newspaperman on the West Coast. Aida married Mrs. Saracevic's son-in-law, Steve Tanaka, in 1992. Alan married Mrs. Saracevic's daughter-in-law, Jennifer Kline, in 1996. Both ceremonies took place in San Francisco, a city Mrs. Saracevic always admired.

As the years went on, Mrs. Saracevic was blessed with four grandchildren. Isabella and Allegra were born to Mrs. Saracevic's daughter, Aida. Her other grandchildren, Samuel and Maggie, were born to her son, Alan. They all knew and loved their beloved Baci, a nickname bestowed by her eldest grandchild, Isabella. Eventually, Mr. and Mrs. Saracevic chose to retire in Glenview, Ill., near the home of their daughter Aida. Mrs. Saracevic's son, Alan, had settled in California, working for The San Francisco Chronicle. He was a frequent visitor to the family in Chicago. Annual trips were undertaken to Croatia, where both Mr. and Mrs. Saracevic maintained exceedingly close relationships with Mrs. Saracevic's sisters, Vesna and Zeljka, along with long-time friends dating back to the couple's time together as young mountaineers. Near the end, Mrs. Saracevic was surrounded by her loving family. She loved to sing songs with them and enjoy the native cuisine of Croatia. She loved solving puzzles and treating her grandchildren to candy and popcorn. Most of all, she simply loved. Blanka Saracevic is survived by her loving husband, Tefko Saracevic, who shared his life with Blanka for well over 50 years. She is also survived by her daughter Aida Tanaka, and her family, Steve, Isabella and Allegra. She is survived by her son Alan Saracevic, and his family, Jennifer, Samuel and Maggie. And she is survived by her sisters in Zagreb, Vesna and Zeljka, along with their extended families.