In Memoriam
Jan L.A. van de Snepscheut

On the 23rd of February, 1994, a tragic death put a sudden end
to the life of Jan L.A. van de Snepscheut, professor of Computing
Science at the California Institute of Technology, a death that sent
a shock wave through the computing community, first of disbelief, then
of unfathomed sadness.....

Born on the 12th of September, 1953, Jan was not yet 17 years of
age when he enrolled in 1970 at the Eindhoven University of Technology
in the EE Department. In 1977 he graduated as Electrical Engineer,
but did so on a Thesis supervised by Frans E.J.Kruseman Aretz of the
Department of Mathematics. In that Thesis, he gave the scientific
justification and the text of a beautifully structured compiler with
truly exemplary error handling. The EE graduate had already become
an expert compiler writer and implementor in general, thereby setting
a pattern for the rest of his life: he would use with equal agility
and competence the soldering iron and the fountain pen (and, for that
matter, any tool in between).

On the theoretical side this work would find its continuation in
the design of such things as a generator for error handling parsers
and a beautiful algorithm for the minimization of finite automata --a
result that would later be included in his Ph.D. Thesis-- .

But he lived in more than one world. Without us noticing much of
it, he co-founded at that time the first of two companies in micropro-
cessor-based control systems, for which he did both hard- and software
design (for instance an unusually efficient Pascal implementation).
I don't think he had much of a financial incentive for these activities;
his main incentive seemed to be that he hated to see things done clum-
sily when he knew how to do them much better.

For a year, the young graduate joined the scientific staff of the Twente University of Technology, but in 1978 he was happy to return to Eindhoven, where, in the next five years, he would earn his Ph.D. with a Thesis, supervised by Martin Rem, titled "Trace Theory and VLSI Design". As familiar with reasoning about concurrent programs as with the physics of semiconductor technology, he designed a style of intellectually manageable concurrent programs such that these could be used as blueprints for VLSI chips. He was just 30 years of age when he got his Ph.D.. Later researchers have improved the quality of chips thus produced, but his was pioneering work, and I can think of no one, at the time better equipped to do it than Jan.

For the rest of the academic year, the whole family went to Pasadena, where Jan visited CalTech. The choice was a natural one: in a recent past he had been very much inspired by the work of Alain J.Martin, and I think he was intrigued by Chuck L.Seitz's undertakings. He recognized competence when he saw it and wrote about Carver Mead "I think he understands the physics of semiconductor chips better than anyone else.", but it was Jan who became Richard Feynman's closest collaborator in the latter's exploration of the quantum mechanics of computing. (Feynman also recognized competence when he saw it.)

But the world became more pressing with its demands, and, as of September 1984, Jan agreed to a professorship at the University of Groningen.   In Groningen, his task was daunting, for he became responsible for a group that, as a result of earlier misfortunes, had lost its sense of direction. Jan offered a vision. As he wrote in his Curriculum Vitae:

> "Overall, my research is directed to the design of elegant and useful computer programs. A driving thrust is my strong persuasion that practical and theoretical concerns are not mutually exclusive. I am most stimulated by problems having a practical motivation and try to construct mathematically elegant techniques for their solution."

(That, in this single paragraph, both "practical" and "elegant" occur twice is typical.) From Pasadena he wrote to me how much he looked

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forward to his professorship in Groningen, where he felt that he might
be able to accomplish more than at CalTech (where his contributions,
though welcome, were at the time not that urgently needed).

By all standards, he did extremely well in Groningen. Not every-
body shared his vision with the same "strong persuasion", but on the
whole his always active, playful intellect was so contagious and in-
spiring that he quickly turned Groningen into the Mecca of Dutch Com-
puting Science. To this very day, the University of Groningen treats
learning how to program well as a very essential and serious component
of the Informatics curriculum. At the other end of the spectrum he saw
a sensible place for performance experiments, and got the group equipped
with a transputer network for which he wrote with Johan J.Lukkien a
Pascal translator to support the experiments he envisioned. In addi-
tion, he supervised 14 Masters Theses and 2 Ph.D. Theses.

Regrettably, his technical satisfaction could not continue to
compensate his growing frustration with the University, which did not
recognize Informatics as a scientific discipline in its own right and
continued with interferences he felt highly inappropriate. After "a
miserable summer" in 1988, he recovered and refound his scientific
zest, but largely thanks to the decision that the limit had been
reached and that he wanted to move to a more congenial environment.
Eight years after the Martins, five years after us, they moved to the
USA; he expressed his admiration for our wives' readiness to join us
in such adventures by "geen zee gaat ze te hoog, die Nederlandse
meisjes".

Despite all the distractions of moving, the years at CalTech have
been remarkably productive. He supervised two Ph.D. students and a
number of undergraduates, where in all cases that I am aware of, his
supervision entailed active co-operation, often leading to joined
papers or reports. The spectrum became wider, as next to his old loves
of program construction (for all sorts of environments) and semantic
theories he became involved in lattice theory and the mechanization of
Wim H.J.Feijen's proof format.

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His Magnum Opus of these years, however, is his book "What computing is all about", published by Springer-Verlag in David Gries's Series "Texts and Monographs in Computer Science". As it says on the cover:

> "It is unique in its choice of topics [...] The coverage is broad but not shallow [...], ranging from the physics that allows us to build electronic computers to the mathematics that allows us to understand our programs."

It is an absolute treasure, strongly reflecting both his excitement as a scientist and his dedication as an educator. It is also a very personal book: while reading it, I often see his eyes twinkling and hear his voice.

For those who loved and admired Jan, for those for whom he was a regular source of inspiration and intellectual delight, it will take a long time to fully absorb that those eyes will twinkle no more, that that cheerful, slightly mocking voice will no longer be heard. The challenge is clear: all the practical and mathematically elegant work that, otherwise, Jan would have done, now has to be done by us. (And we may not yet be up to it, but the same holds for all the little jokes.....) Jan's memory cannot be served better than by trying to meet that challenge.

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Edsger W.Dijkstra
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