

MARVIN MINSKY (Died 14 Jan 2016)

A PARTIAL PERSONAL APPRECIATION

(DRAFT: Liable to change)

[Aaron Sloman](#)

[School of Computer Science, University of Birmingham](#)

Marvin Minsky, AI pioneer, mathematician, educator, engineer, musician and philosopher died on January 24, 2016. For more information about him see https://en.wikipedia.org/wiki/Marvin_Minsky, or just type his name into a search engine and explore his many writings, interviews, lectures, etc. E.g. this should fetch interviews and presentations on Youtube:

<https://www.google.co.uk/search?q=%22Marvin+Minsky%22+youtube>

Most of his publications are available online on his home page at MIT:

<http://web.media.mit.edu/~minsky/>

Others will write authoritative obituaries and surveys of his many achievements.

A three and a quarter hour video of a celebration of Marvin Minsky by his family, students, colleagues and friends can be found here:

<https://www.youtube.com/watch?v=pbxf5O4B7oI>

Or, in four separate parts:

[1]: <http://www.media.mit.edu/video/view/minsky-2016-03-17-01>

Intro, Video, Interview with Jeffrey Mishlove, John Hockenberry, Video, Marvin with gadgets, Joi Ito, Daniela Rus, Video, Marvin at the AI Lab, Gloria Rudisch Minsky

[2]: <http://www.media.mit.edu/video/view/minsky-2016-03-17-02>

John Hockenberry, A message from Gregory Benford, Patrick Winston, Yoshiaki Shirai, Video, "Happiness" (2013), Mike Hawley, Dylan Holmes, Danny Hillis

[3]: <http://www.media.mit.edu/video/view/minsky-2016-03-17-03>

John Hockenberry, Michael Hawley, Piano performance, Brian Silverman, Cynthia Solomon, Ed Fredkin, Tom Ashbrook, David Levitt, Video "The network of ideas", Ed Boyden

[4]: <http://www.media.mit.edu/video/view/minsky-2016-03-17-04>

Ruth Minsky Amster, Margaret Minsky, Tod Machover, Marvin and music, Nicholas Negroponte, John Hockenberry, "Greensleeves" with the Minsky family

I was introduced to AI, including the writings of Marvin Minsky and John McCarthy, by Max Clowes, after he arrived at Sussex university in 1969, where I was a young lecturer in philosophy [[Clowes Tribute](#)]. Both made a deep impact on my thinking.

I was never one of Minsky's students or close colleagues, though we met intermittently and got on well, apart from my failed attempt to get him interested in the POPEYE project when I visited MIT in 1975. Later, he visited Birmingham twice, first in 1999 to chat and give a talk (taking leave from a conference on Creativity and Cognition at Loughborough University where he was guest speaker!),

http://www.jstor.org/stable/1577076?seq=1#page_scan_tab_contents

His second visit was for the DAM 2000 AISB Symposium (on Designing a Mind), summarised below. I may try to write a personal memoir later. We communicated publicly via "usenet" from the early-mid 1990s (or perhaps earlier?), and exchanged email messages intermittently. I still have most of the

messages and will later post an edited version here, as they illustrate his interest in philosophy and some points on which we agreed and disagreed.

80th Birthday Tribute

Here is my portion of his 80th Birthday tribute, published in *The AI Magazine* in 2007.

In Honor of Marvin Minsky's Contributions on his 80th Birthday

Danny Hillis, John McCarthy, Tom M. Mitchell, Erik T. Mueller, Doug Riecken, Aaron Sloman, Patrick Henry Winston

The AI Magazine Vol 28, No 4, Winter 2007

<http://www.aaai.org/ojs/index.php/aimagazine/article/view/2064>

Over 35 years ago, Marvin's writings, such as the amazing "Steps" paper (Minsky 1961b), which contained many important ideas that illuminated a major breadth of later work in the field of AI, convinced me that the "design stance" should be used to address philosophical problems, that is, trying to understand how various mental processes could actually work: the basis of my 1978 book. Later, I learned from his frequent contributions to comp.ai.philosophy (which should be collected somewhere). In 1995 he agreed to join the Philosophical Encounter at IJCAI (with McCarthy), after which our interactions became more frequent, including visits he paid to Birmingham and meetings at conferences and workshops.

Although I keep learning from Marvin, we do not agree about everything. His emphasis on "common sense" focuses on the uniquely human aspects of what minds do, which I think underplays some of our most important evolved abilities shared with some other animals, especially perception and manipulation of complex three-dimensional structures with complex causal interactions. Explaining common sense strikes me as probably the hardest unsolved problem in AI, with implications for many other aspects of intelligence. We have both worked on requirements for "layered" architectures for human-like systems. Marvin's work showed that I was not making enough distinctions between levels of processing, partly because I was more concerned with how humans fit into a space of possible designs, which includes knowing how we overlap with other species, and also how the architecture evolved and how it develops from infancy onwards. This difference leads to different ways of structuring discussion of architectures, but without substantial disagreement.

His latest book (*The Emotion Machine*) is a major achievement, despite stretching the word "emotion" to refer to too many different control functions! But the important thing is not the label he uses but his myriad insights into what we are and, above all, how we work. We have reached some similar conclusions by different routes that bring out insights that I had missed, for instance in his paper "Interior Grounding, Reflection, and Self-Consciousness" (Minsky 2005) arguing that apparently simple sensations must be "complex reflective activities."

Finally, his website is full of treasures, for example the extraordinary BBC Three Music Interview in 2004.

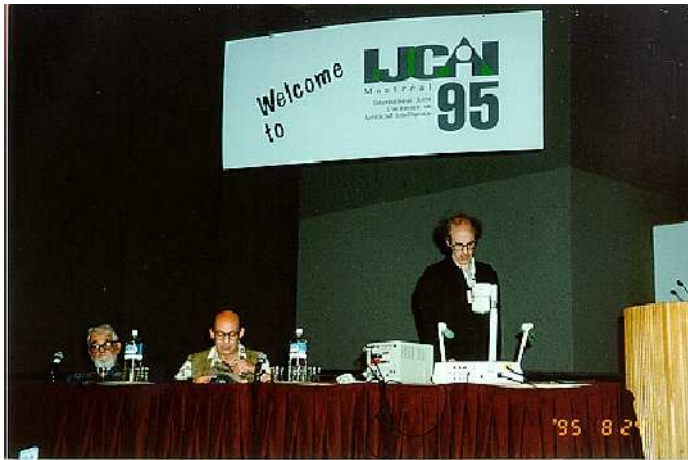
Everyone wishing to do research in AI should read his pioneering paper, unfortunately no longer recommended by teachers:

<http://web.media.mit.edu/~minsky/papers/steps.html>

Steps toward Artificial Intelligence (1960)

PHILOSOPHICAL ENCOUNTER SESSION AT IJCAI 1995
14th International Joint Conference on AI Montreal, August 1995

Here's a picture of John McCarthy, Marvin Minsky and A.S. at the "[Philosophical Encounter](#)" at IJCAI95, in Montreal.



Many thanks to Takashi Gomi, at Applied AI Systems Inc, who took the picture.

Audio tapes of the whole 2 hour session, including contributions by McCarthy and Minsky were originally available from

Audio Archives International Inc
100 West Beaver Creek Road, Unit 18
Richmond Hill, Ontario L4B 1h4, Canada
Phone: 00 1 905-889-6555 x22 Fax: 00 1 905-889-6566
[Does anyone have the recording?]

During the discussion Ed Feigenbaum pointed out that it was the first time so many members of the Dartmouth symposium had been in the same room since 1956.

Others present included Herbert Simon, who contributed to the discussion by objecting strongly to the inclusion of philosophy in an AI Conference, echoed by Pat Hayes. I regard both as good philosophers, so was merely amused.

AISB CONVENTION UNIVERSITY OF BIRMINGHAM 2000
and Designing a Mind (DAM) Symposium

In 2000 Marvin agreed to take part in the AISB Convention held at the University of Birmingham.
<http://www.aisb.org.uk/convention/aisb00/>

He was one of the keynote speakers for the convention, listed here:
<http://www.aisb.org.uk/convention/aisb00/index.html#invited>

He also accepted my invitation to take part in the "DAM" symposium on Designing a Mind
<http://www.cs.bham.ac.uk/research/projects/cogaff/dam00/>

For which he submitted this abstract:

<http://www.cs.bham.ac.uk/research/projects/cogaff/dam00/abstracts/minsky.html>

And a full paper including ideas being developed for *The Emotion Machine*:

<http://www.cs.bham.ac.uk/research/projects/cogaff/dam00/papers/minsky.pdf>

As that paper shows, Minsky, unlike all other major AI researchers (as far as I know), took seriously the ideas about architectures that were being developed in Birmingham. The main difference was that he was particularly interested in modelling human minds whereas we were trying to understand the space of possible minds within which evolutionary trajectories could be understood.

See also: tribute to John McCarthy, 2011:

<http://www.cs.bham.ac.uk/research/projects/cogaff/sloman-jmc-aisb.html>

Installed: 26 Jan 2016

Last updated: 10 Feb 2016; 21 Nov 2016

[Clowes Tribute]

Obituary and biography of Max Clowes

<http://www.cs.bham.ac.uk/research/projects/cogaff/sloman-clowestribute.html>

<http://www.cs.bham.ac.uk/research/projects/cogaff/sloman-clowestribute.pdf>

This document is

<http://www.cs.bham.ac.uk/research/projects/cogaff/misc/marvin-minsky.html>

A partial index of discussion notes is in

<http://www.cs.bham.ac.uk/research/projects/cogaff/misc/AREADME.html>

Maintained by [Aaron Sloman](#)
[School of Computer Science](#)
[The University of Birmingham](#)