

An Opinionated History of AAAI

David Waltz

■ AAAI has seen great ups and downs, based largely on the perceived success of AI in business applications. Great early success allowed AAAI to weather the "AI winter" to enjoy the current "thaw." Other challenges to AAAI have resulted from its success in spinning out international conferences, thereby effectively removing several key AI areas from the AAAI National Conference. AAAI leadership continues to look for ways to deal with these challenges.

AAI began life intending to be completely different from the established professional societies (such as ACM). It was to be informal, nonbureaucratic, research-focused. Soon after its founding, AI became the darling of the high-tech world, with expert systems featured in every popular article on computing. Attendance at AAAI conferences and AAAI membership soared. However by the early 1990s, it became clear that the AI industry—most prominently expert system shells—were not going to be the killer application they'd been touted to be—substantial work by experts was required to create expert system applications—and the "AI winter" set in. Conference attendance and memberships dropped off steadily.

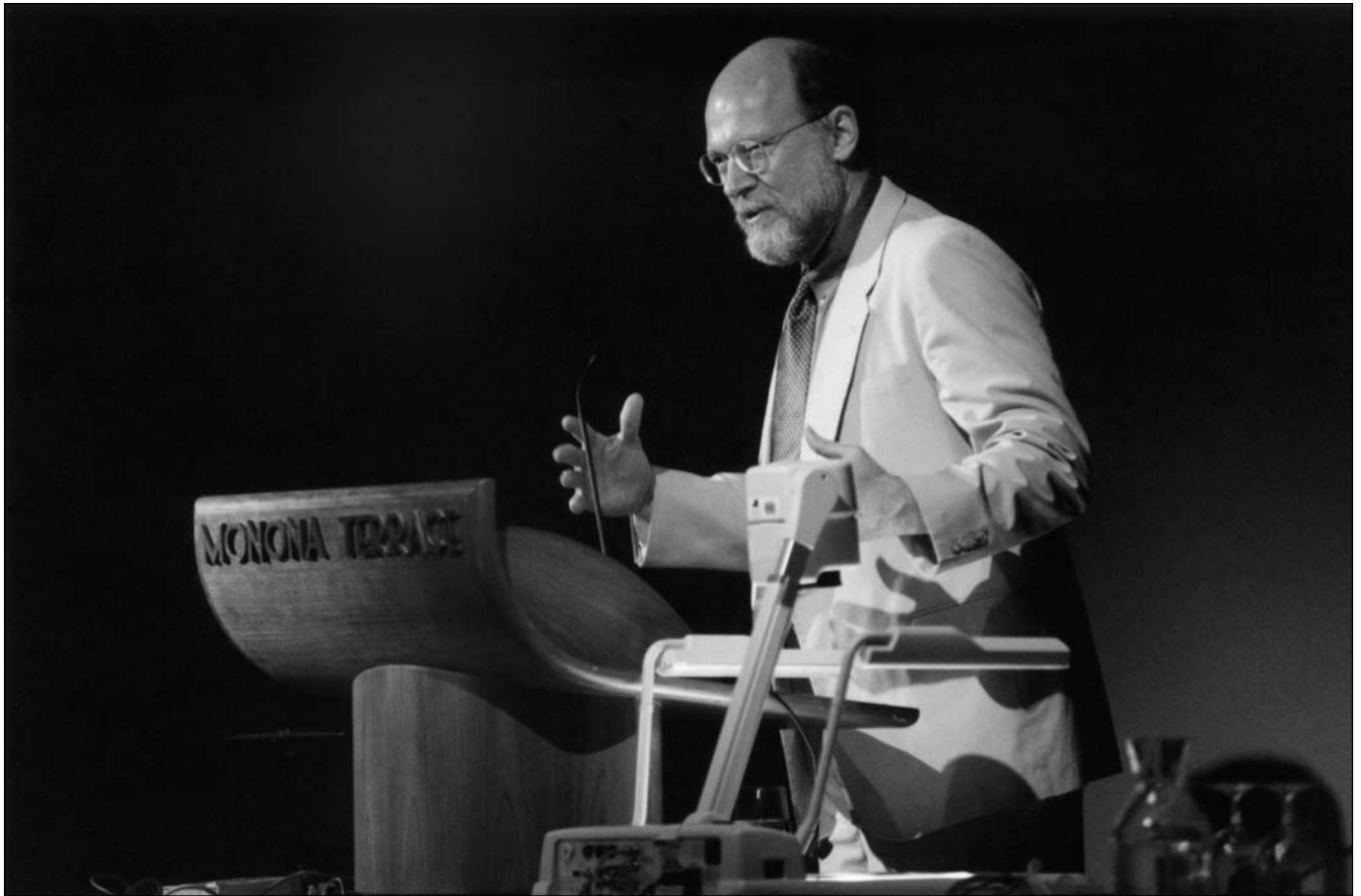
However, in the first 10 years of its existence, AAAI had accumulated a large financial "endowment" that continues to benefit us to this day. This sets the stage for the issues that have dominated AAAI Executive Council meetings for the last 10 plus years.

Membership and Money

Discussions of ideas and plans for increasing membership and conference attendance have



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Waltz Delivered His Presidential Address at the Fifteenth National Conference on Artificial Intelligence (AAAI-98) in Madison, Wisconsin.

been staples of AAAI Executive Council meetings from the early 1990s until today. There has been a tension between those who want to protect the “endowment” by keeping expenditures down and those who argue that AAAI should expend its funds on items that could serve as investments in the future, for example by sponsoring (expensive) robot competitions to bring young people into AI. It proved so difficult to stop the membership and conference attendance slide that some defeatists facetiously suggested closing up AAAI and distributing the funds to the remaining members as a tontine.

On the positive side, AAAI’s assets have been well allocated, and the “endowment” benefited greatly from the stock market run-ups of the 1990s. Each year the late Norm Nielsen, longtime AAAI treasurer, would warn of the need to conserve funds for a rainy day; each year, despite generous expenditures on AAAI activities, the “endowment” increased, making his warnings sound overly cautious. While hit by the

market downturn of the early 2000s, AAAI’s war chest is still sizable. And recently conference attendance has leveled off and turned up.

Spinning off Conferences and Subfields

AAAI has spun off conferences at a steady rate, paralleling AI’s shedding of subfields. The most notable defection was the knowledge discovery and data mining conference (KDD), but many research areas that had traditionally viewed the AAAI conferences as key venues moved away from the AAAI conference and AAAI sponsorship over the years—natural language processing, vision, KR, robotics, learning, and so on. There are three main reasons for the exodus: first, subfields have become large enough and specialized enough that they could support quite large separate conferences; second, attendees preferred conferences that concentrated

on topics of direct interest, unlike the very broad AAAI conference; and third, the subfields saw themselves as international and didn't want to be organizational subparts of an American professional society. There have been a number of ideas about how to keep relationships with these areas, the most prominent and successful being collocation of their conferences with AAAI. AAAI has explored the possibility of becoming an international AI society ("Association for the Advancement of AI")—for example by consolidating with non-U.S. societies—but this is a sensitive issue, since so many countries have their own national AI societies with proud independent histories, and AAAI is inherently averse to pressure politics and cultural imperialism.

We as a field have long bemoaned the splintering of AI into subfields that over the years create more and more specialized technologies and mutually incomprehensible technical languages. AAAI has tried to encourage bridges between the current and former parts of AI by inviting articulate distinguished speakers from splintered fields, by scheduling sessions that summarize trends and breakthroughs from splintered conferences, and so forth. Ron Brachman, in his presidential address at AAAI-05, presented the first really novel idea I've heard in a long time for bringing the subareas back together: Ron argued that the subfields are now fairly mature and that we can now consider intelligent architectures that include all the pieces in one collaborating system. This requires joint discussion, planning, and system building. It remains to be seen whether this idea will lead to a reunification of AI or whether it can be used to rejuvenate AAAI conferences.

Theory Versus Application

The key effect of the spin-offs of subfields has been that AAAI has tended to retain AI theory, giving theory a greater representation in AAAI than it has in the field as a whole, measured by all those who say they're doing AI in universities, companies, and government. A minority but vociferous faction within AAAI has tried to counterbalance this trend by celebrating applications, most notably in the IAAI conferences. The net result is that, taken together, AAAI and IAAI have their greatest strengths at the extremes of theory and practice (albeit with much greater weight at the theory extreme), while much of the AI mainstream goes elsewhere.

This issue also surfaces in the selection of fellows. The preponderance of theorists in AAAI is

reflected in the greater success rates for theoretical versus applied fellow nominees. (This is in no way meant to suggest that any fellows are not worthy—merely that it's proven harder to get even strong applications-oriented candidates elected.) One personal comment: I feel that related factors tend to favor the selection of people who are strong in a well-developed subfield versus innovators and iconoclasts who are equally strong (for example, as measured by publication impact). In recent years I and others have raised these points with the Fellows Selection Committee, and I have reason to believe that we will see changes (I'd say improvements) in future years.

Prospects

I think it's likely that AI is entering a new golden age. The AI winter is a distant memory, totally eclipsed by the more recent bursting of the tech bubble, an event whose lasting impact is itself fading. The web has been a great source of applications and data, and AI is putting a strong mark on the web (for example, the semantic web and web applications that learn and adapt). But beyond the web, the availability of incredibly cheap and powerful computing and memory is making an ever wider range of computationally expensive AI applications practical. Many applications long demonstrable in principle (such as speech understanding and vision for control of vehicles) can now be done cheaply and in real time. Learning applications, especially in data mining and data analysis, are helping AI ideas to spread widely into other fields and, in the process, bringing ideas from those fields back into AI (for example, from statistics and systems security). I believe AI's (and AAAI's) best days lie before us.

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