NATURAL LANGUAGE INTERFACES: PRESENT AND FUTURE

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PRESENT

The 1980's have seen the arrival of commercially successful natural language interfaces. Artificial Intelligence Corporation's Intellect[1] was introduced in the 1970's, but expanded in this decade to support interaction with a wide variety of systems. Each year, AIC hosts a user group conference that draws hundreds of people.

The middle of the decade saw the arrival of Symantec's **Q&A** whose natural language interface has helped it win honors as one of the PC programs that is easiest to use. **Q&A** now speaks many languages besides English. Worldwide sales have exceeded 100,000 copies.

Just as highly rated and as popular is Lotus **HAL** whose English interface makes Lotus **1-2-3** more accessible. Last Fall, Lotus widely advertised a bundled package of **1-2-3** and **HAL**.

The two newest products, BBN Laboratories' **Parlance** and Natural Language's **DataTalker**, show the most extensive and detailed control of English yet achieved. Both have gathered significant financial support and are positioned for major impact on the marketplace.

This achievement has not been easily obtained. Other products have not achieved these levels of acceptance or technical quality. Many development efforts have failed to produce products. The field has so far failed to develop the immense market predicted for it early on in the popular press.

FUTURE

Without assuming any major scientific breakthroughs we can safely extrapolate from the roots of today's successes into the future. First, we know that natural language understanding is a hard problem. So we know that the natural language products that succeed will not appear overnight, but will be the result of careful development. They also need more elaborate grammars and semantic systems. Even so we know that they will not cover anything but a fraction of English. Clearly a *habitable* fraction can be achieved, but successful products will find ways to achieve partial understanding and graceful error recovery.

Since interfaces need to be tailored to achieve the greatest success in each new application, products will be rewarded for good knowledge acquisition tools. To date, these have mostly been tools to build lexicons, but they will have to go further and give the customer more access to the grammar, semantics, and pragmatics.

Few users care whether a computer speaks their *natural language*. Their goal is to interact with the computer in a natural way. So products will be rewarded that integrate natural language into other means of interacting: pointing, drawing, menus, etc.

Of course, products will be rewarded for achieving all the traditional data processing qualities: efficient processing, good documentation, trustworthy support, upward compatibility between releases, etc.

Finally, we can point to speech understanding as the one field where breakthroughs will make a major difference in the natural language interface market. If users can be freed from the demands of the keyboards, they will rush to natural language interfaces.

THE PANEL

These opinions on our technology are those of the moderator. Today's panel is composed of the leading innovators in commercial natural language interfaces. They will try to identify where their systems succeed, where they are less than successful, and where the field is likely to head. Feel free to contact them to learn more about their individual products. Names, addresses, and telephone numbers are provided on the next page.

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[1] Brands and products are trademarks of their respective holders.

PANELISTS

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