The human/computer language called *Easy*

The Mudoc Corporation is developing a new kind of computer language that it calls *Easy*. *Easy* will be a computer language people will use in the same ways they use their natural languages. Like our natural languages, *Easy* will have both written and spoken versions – and it will be used to perform all the functions performed by our natural languages. But, *Easy* will enable its human users to perform at higher levels of efficiency than is possible with any natural language. Our natural languages fail to make effective use of the enormous perceptual and cognitive capabilities of the human information processing system. *Easy*, on the other hand, will capitalize on the inherent capabilities of each user's own information processing system by employing a new and more efficient system of verbal expression – one that will enable each individual to make optimal use of both his or her visual and aural capabilities – whether those capabilities be severely limited (by blindness, deafness, cognitive impairment, etc.) or prodigiously extensive with a superbly functioning brain and nervous system. *Easy* will be a tool that lifts all its users.

Easy will be an "artificial language" or "constructed language" – as opposed to a "natural language," that is, one of the many human written and/or spoken languages that have developed and evolved gradually and organically around the world (see "natural languages" in *The Mu Primer* manuscript at http://www.mudoc.com/glossary.htm).

In designing *Easy*, it will be possible to avoid most of the perception, cognition, and logical problems that plague our natural languages. For example, English includes many logical inconsistencies, irregularities, and ambiguous and confusing elements (such as homographs and homophones) that make it difficult to learn and to use effectively. Each of the natural languages now in use has its own extensive collection of deficiencies and impediments that tend to hamper its effective use.

Easy will borrow freely from the natural languages. The world's most widely used language, English, will be the largest single source of the words in its vocabulary. This will make *Easy* easier to learn for those who already know English. (However, many of the words extracted from English will be modified to meet *Easy*'s presentation requirements of visual lucidity and resonant phonology. Absent will be the kinds of variations in spelling, pronunciation, and use that are common in English.) But, the transparency of the words that is provided by *Easy*'s extensive reference substructures and other supporting tools will make it easy for most people to learn the language, regardless of the limitations of their native language. The rules of visual clarity and euphonic speech of *Easy* text and speech will also simplify the learning of the language and its rules. (The language was named *Easy* to continuously remind

its developers that the criteria to be used in designing the language are that it be easy to learn, easy to read, easy to write, easy to speak and pronounce, easy to hear and understand, and easy to remember.)

As English's smarter and more sensible linguistic cousin, *Easy* will be easy to learn by those who already know and use English. For non-English speakers, *Easy* will be easier to learn than English. And, once having learned to use *Easy*, learning English should be easier than trying to learn English using only the tools that are available in the user's original natural language. So, in the future, most of those who speak another language and want to learn English will first learn *Easy* – and then learn English.   While *Easy* will be more easily learned by English users because of the similarity of the English and *Easy* vocabularies, non-English speakers may eventually be able to achieve higher levels of efficiency because they won't be impeded by old habits acquired when operating in the English arena.

Much of the work we now ask computers to do is to process, deliver, and display the logically inconsistent and perceptually inefficient text expressed in our natural languages. One of the most complex tasks we ask computers to do is to accurately transform information from one natural language to another. Effectively translating verbal information from one haphazardly developed language to another requires an immense amount of computer programming and processing muscle. Translating text from a natural language to *Easy* will be far easier – as will translating information from *Easy* to a natural language. So, in the future, translating information from one natural language to another natural language will probably involve the use of *Easy* as an intermediary tool in the process. Of course, each natural language will require its own set of *Easy* conversion tools – which will be much easier for some languages than others.

The perceptually efficient design of the *Easy* characters, words, and meaning units will enable sighted readers to function at higher levels of cognitive efficiency when consuming them visually. Through the use of *Easy*'s perceptually more efficient visual verbal elements, sighted readers will be able to consume larger meaning units than is possible with any natural language – markedly increasing the rate of consumption that is now achievable. (For explanation and examples of "meaning unit" see http://www.mudoc.com/mutypogr.pdf .) And *Easy*'s more effective speech phonology will provide more understandable, more efficient, and more pleasant listening. Its well-designed phonology will enable those without sight to consume text at higher rates than is possible with any natural language. Such advances in the consumption of text are becoming possible because of our 21st century understanding of the perceptual

and cognitive functions involved in the acquisition, processing, and use of text and speech sounds. (For more information about *Easy*'s visual elements and phonology see the Web pages "Languages of the Future" at http://www.mudoc.com/mpms4.htm and "*Easy* Development" at http://www.mudoc.com/easydev.htm .)

Another feature of *Easy* that will facilitate its use will be the extensive reference substructure that underpins it. The *Easy* substructure will include software tools that make both its reading and its writing easier. The *Easy* substructure will include a large collection of verbal and graphic documents equivalent to an unabridged dictionary, a Wikipedia-like encyclopedia, and a wide variety of textbooks. The reference substructure will give the *Easy* words a new kind of transparency – in contrast to the opaqueness of unfamiliar natural language words printed on paper. The substructure will also provide all the composition tools necessary to help the writer make *Easy* text more easily understood by readers.

All the natural languages now in use (especially the two principal ones, English and Chinese) can be characterized as "anti-computer languages." Our natural languages were developed organically (and often haphazardly) by peoples who knew little about communication and information theory, about linguistics, and about our perceptual and cognitive processes. The primary concern of those involved in developing the languages were writing and speaking, but they had only crude manual writing tools and no audio recording devices. Their designs were often ingenious, in view of what they knew, but none came close to taking full advantage of our inborn visual and aural data processing capabilities – or of creating a language suitable for use in today's computing and communication devices.

In the near future, all the members of our species will be assisted in their daily lives by computerized machines that will perform a myriad of useful, helpful, and beneficial functions. For example, most of the traveling that people do will be done in computer-controlled vehicles that get them quickly and safely from one place to another. In order for this to happen, the vehicles (scooters, cars, trains, airplanes, boats, hovercraft, etc.) must be able to communicate effectively with their passengers and with each other. In order to have accurate and reliable exchanges of information, all of the vehicles must employ a common language – and it must be a digital language in order to facilitate back and forth electronic communication.

In addition to being able to communicate effectively with each other, the vehicles must also be able to communicate with all the other machines and systems that support or control or interact with the vehicles.

The case will be similar with the other classes of computer-controlled devices and their users. If there is to be effective communication and interaction between them, they must use a common language. Because English is the only language close to being a universal language, it is the only candidate for the job at present. Unfortunately, its anti-computer, semi-logical, and non-digital characteristics make it unsuitable and impractical for the job.   The only language that will be suitable and fully qualified for the job will be a new kind of language that is fully compatible with both humans and computers – a language like *Easy*.

As the use of computers and computer-controlled devices come to play larger and larger roles in everyone's daily lives, the increased efficiency achieved through the use of a language like *Easy* for communication between users and their computers and computer-controlled devices could prove to be highly significant – especially if such a language comes into general use around the world.

The great complexity, variability, and multiplicity of our natural languages keep us from developing our full potential as a society – and as individuals. A human/computer language like *Easy* could enable most of its human users to attain higher levels of knowledgeability, healthiness, and satisfaction. If, as proposed, it should come into use in every nation, it could enable humankind to attain much higher levels of productivity, cooperation, and peacefulness. The development and implementation of *Easy* offers the following kinds of improvements in the lives of its users:

(1) more effective and accurate communication and interaction between its human users,

(2) much higher rates and levels of comprehension in the consumption of verbal information by its human users,

(3) more effective interaction between its human users and the computers and computer-controlled devices and systems they use,

(4) more effective communication and interaction between computers and other computers and computer-controlled devices

The Mudoc Corporation's plans for developing and implementing *Easy* are laid out in the Web pages, "*Easy* Development" and "Languages of the Future" cited above. They are further discussed in the Web page "A Decade of Promise for ASU" at http://www.mudoc.com/ASUpromise.pdf

If you see potential in the development of a new human/computer language like *Easy* and would like to participate in the effort to bring it to reality, see "Call for Collaborators, Contributors, and Conspirators" at http://www.mudoc.com/collab.pdf and let us hear from you.