Apology for the letter builder writing

Overall concepts for designing machine control gestures viewing the machine as a part of the entire, unique environment.

Dezső Fodor

MIE Ltd (Modern Information technology and Electronics)
Budapest, Hungary
fodord.mie@startadsl.hu - http://miekft.hu

…..
…..
…..
…..
…..

Abstract - **First, we reword the place of the man-machine interface in the total reality. This way the human's command to a machine is the manifestation of the human person. It maintains dialogue with the environment. Structure of the dialogue's messages is different commands to move bodily muscles and receive acceptable, indifferent, or to be rejected environmental consequences. This ranking is emotional. Machinery environment mostly gets digital command – that has smaller control-domain than analogue. The machine is power over the environment. To load work to the machine increases the sovereignty, but to shift the decision to it decreases the same. Then we specify technological goal of the experimental program application to try the general digital manual machine commanding, the text input, especially the suggested letter builder writing.**

Keywords – **Input, Text, Manual, Touch-screen, Gesture, State-machine, Workflow, Keying**

I. THE PLACE OF THE MAN-MACHINE INTERFACE IN THE TOTAL REALITY

Letter builder writing [1] is a manual digital text input method from human to machine where keying of a text character does not occur by selecting from the keyboard or the screen from the entire set but using instead a selection tree in three steps. During the steps, some graphical and acoustical response from the machine tells about the curse. This allows to check, possibly correct or stop proceeding of "building up" the character input. Moreover, the selection inside the tree is easier because one has to select only from two to six options instead of much more.

Man and machine are both a limited small part of the infinite total reality. Both have a number of connections to the environment, being same the total reality including also them, around. Among the numerous connections, the ones toward each other are very specific ones. The specificity of them lies in the human reasoning work that on the one hand man has built into the machine and on the other hand is a reasoning living labor of the person who operates it. Reasonable is to make this compound of man and machine more effective by sacrificing more built in and less living labor to work on improving the

environment that is the final purpose of this dualism during the entire history.

II. COMMAND – MANIFESTATION OF THE HUMAN PERSON

There are a number of different views about the essence, formation and development of the person. One of them binds it to the formation of the consciousness. Both person and consciousness contain volition as significant property. Neither consciousness nor person does exist without volition, although these are not the same. Person emerges in earlier age, moreover ethologists affirm that also with animals ("dog is a hairy child"). We can regard volition as the operation of the will. That is the human person's volition operates the person's will with the commands issued to receive some response signaling that the environment noticed it.

III. DIALOGUE WITH THE ENVIRONMENT

Man-machine interface is part in the territory of information's traffic of the person to and from the environment. The person counts on response or not while sending information, moreover it has to send response or not while receiving information. These actions are the command, input, option and learning respectively. The sent or received information is digital when its value is one of a finite countable set of values, moreover it is analogue when its value belongs to a closed continuous interval's infinite number of values.

IV. STRUCTURE OF THE MESSAGES

Communicating massages is life phenomena of higher-level living organisms. Of those which have separated substructures to control state-changes of other parts of them and the environment. These are the nervous systems. Control occurs by commands from the controlling substructure to the being to change organism-parts or environmental objects. We suppose to be trivial that the only such controlling subsystem the nervous system is (may be also other ways of control also but this time we do not consider them), the same way was trivial that the only immediately being to change object is the muscle fiber subsystem of the organism. I.e. the only way of communicating

massages is the muscle fiber's innervation. Considering deeply the process, we can well accept this statement. These messages are the motoric commands. The muscular changes – i.e. the movements – are consequences of either elementary or grouped respectively chained innervation of muscle fibers.

V. EMOTIONAL JUDGMENT ABOUT MESSAGES FROM THE ENVIRONMENT

After the person signaled its being with some motoric command, it waits for the environmental consequence. Receiving that with sensory organ signals, it notes with satisfaction that its sovereignty got acknowledgment. Further, it states whether the consequence is along with, on the contrary of, or indifferent to its expectation. It makes a reasonable judgement about its emotions on the aroused consequence. While the emotion is negative or indifferent, it repeats. While repeating, it looks for reminiscence how could it reach with some change in its signaling a more acceptable consequence. If nothing, it only sweeps through all possible commands with the expectation of getting a consequence that evokes him good emotions, evokes joy. Therefore, it learns how to be pleased, further, the memory of its experiences becomes richer. This enrichening establishes and increases the person's rule over the environment, the sovereignty. During that, the reason will record also the links between commands, between their consequences, and how they are beside each of the other and how they follow each other. This causes eventually creating new commands to operate parallel as well serially more elementary commands, thus even more enrichening the innervation.

VI. DIGITAL COMMAND TO THE MACHINE

We cannot help delivering the statement that commanding the modern machines today occurs predominantly with digital commands. The steering wheel, some stringed musical instruments, signal setting knobs, etc. are seldom exceptional contrary examples. However, the earlier came simpler machines are all of analogue commanded usage.

VII. THE MACHINE IS POWER OVER THE ENVIRONMENT

Weather does some dependency exist between the analogue or digital commanding and the elementary, grouped or chained way of operation of muscle fiber's innervation? Obviously, the human's power over the environment is more efficient when the muscle fiber's innervation takes up possibly the fewest nerves and muscles to execute possibly the most functions by machines.

VIII. TO LOAD WORK TO THE MACHINE INCREASES THE SOVEREIGNTY, BUT TO SHIFT THE DECISION TO IT DECREASES THE SAME

Considering text input when done analogue (voice and handwriting recognition) means to shift cognitive work to the machine. Moreover, speech commanding relieves hands; handwriting is perhaps easier for brain, wrist, and fingers. Alternatively when text input is digital, the machine is relieved of the cognitive work i.e. the processing of input analogue signals. Why prevails still in controlling machines the digital way – without regard to the above exceptions? Probably, there are another tendency in the man-machine connection over that of shift possibly most functions from the human body to the machines, namely the tendency of operating the functions with possibly least information transfer from user to machine i.e. only with inevitable redundancy in communication. Uttering voice, handwriting cursive letters and even selecting from motoric command innervations of aiming at one of hundred+ push buttons consist of much fail-creating redundancy. The person feels loss of its sovereignty when the machinery consequence of a motoric command is against its expectation.

IX. TECHNOLOGICAL GOAL

This is simple: One has to plan a machine to which we cannot issue, even incidentally, other command than that which causes the determined outcome, and when we issue that, the machine will not evoke, even incidentally, other change of the environment, than determined. Therefore, our acceptance experience will certainly result. That is, the machine has to be mind reader, and incapable to become faulty.

The nowadays-attainable machinery devices for the manual digital text input are satisfying just these requirements, although restrained enough, namely just using the simple, circa in 1 cm distances divided postures of the fingers [1],[2]. The most precise tool is the keyboard; nevertheless, the experimentations do not cease to neglect its application because of its size.

It would be even a lesser requirement for the manual digital text input to ease in possibly largest extent to select the intention and digitally communicate it. Parallel to the process of transmitting the communication, the user's intention could be better satisfied with backward signaling and provision of the correction's possibility. As a first step this would yet lessen the text input's speed, but the accurateness, the accustoming, the released work power, as we hope, would be rewarding [2]. It would be much significant, when without any keyboard attached to a tablet one could make text input with equal worth.

One could make easier the selection so, that instead of offering parallel the lot of keys on the keyboard, the input of one letter would occur in three steps. First there would be offered a letter group, secondly a subgroup and in the third step the letter insisted to input would be offered. These three steps would offer a feeling experience that is similar to the cursive writing with the use of 1 cm division fields of the touch screen that is supposedly of satisfactory speed, but at any rate secure, little fatiguing and amounted to a write process well exercisable, requiring little attention[2]. With regard to the graduated display of the letter, one could call this text input letter builder writing. The two subtasks [2] that follow would bring us nearer to accomplish the device.

1. One has to develop the program that operates as the state-machine of a limited letter builder writing process.

There is to do a model driven development work to create a state-machine workflow-application that operates a limited character set letter building input process with the touch-screen user-machine interface. It will be to serve as proof for the benefits of the letter builder writing. Namely, it has to render a subset of the whole function set of the typist's keyboard:

2. Development of the program that takes measurements to check the writing's goal parameters from the limited letter build process.

There is to make a control program for the experimental activity that displays the randomly generated input text - letters, words, sentences composed from the limited, declarable set of letters for the operator as a visual command, measures the execution time and records the faults.

REFERENCES

[1]   Dezső Fodor, "A CONTRIBUTION TO THE DESIGN OF THE WEARABLE DEVICES" Conference on Informatics in Higher Education 24-26 of August 2005 Debrecen (paper in Hungarian, abstract here also in English) [Fodor Dezső, "EGY ADALÉK A VISELHETŐ ESZKÖZÖK TERVEZÉSÉHEZ" Informatika a Felsőoktatásban Konferencia 2005. aug. 24-26. Debrecen]

[2]   Dezső Fodor, "WORK HYPOTHESES TO REALIZE THE LETTER BUILDER WRITING" Conference on Informatics in Higher Education 27-29 of August 2008 Debrecen (paper in Hungarian, abstract in front of it also in English) [Fodor Dezső, "MUNKAHIPOTÉZISEK A BETŰÉPÍTŐ ÍRÁS MEGVALÓSÍTÁSÁHOZ" Informatika a Felsőoktatásban Konferencia 2008. aug. 27-29 Debrecen]