"Calling the Blind" is "Watched by theDeaf"

Directions for Multimodal CSCW-Adaptations to Receptive Disabilities

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Regarding access to Information Technology in general a lot of disabilityrelated enhancements of Human Computer Interfaces (HCI) have alreadycontributed to diminish or at best overcome restrictions resulting fromcertain impairments. However, most of these HCI-enhancements do not refer to the online telecommunicationscapabilities of computer systems, which should be designed to improve thesocial interaction of people with different communication disabilities. Thus, what is true for Information technology in general iswrong for special applications of Telematics systems. Access to Telematicssytems for people with expressive and receptive disabilities is stillrestricted.

The degree of immersion, i.e. the awarenes of being an integral part of acomprehensive organizational and/or social context, becomes an importantfactor for the success and the subjective satisfaction of end users usingTelematics or Telecooperation systems in general. For handicapped people lacking expressive and receptiveabilities this is of course especially true. Most obviously sensor-impairments of vision and hearing loss as well asdumbness interfere with crucial preconditions for interpersonalcommunication and social interaction.

From a theoretical point of view receptive abilities seem to be even moreimportant to stabilize social mutuality then expressive communicationabilities. Essentially, the process of establishing social mutualityresults from the receptive ability to assign adequate meaning to communicated information, i.e. tounderstand intentions of others by reestablishing their insights intocommunicated matters as complete as possible. Social Psycholgy refers tothis so to say empathical ability to slip into the shoes of the other by the term "role taking". It is the role-takingability which is restricted, when someone has to deal with a receptivehandicap. Role taking, in turn, is the undispensible precondition for "rolemaking", i.e. performing own roles in social interaction aiming at inducing desired reactions of the other.Nevertheles, desired or at least expected reactions of the other can onlybe induced by role-making on the grounds of a complete as possible previousreconfiguration of the other's intentions by role-taking. Social mutuality or structural group stability isthus gained by a progressive adjustment of *perceived*intentions in role-taking/role-making cycles.

Early attempts to make this approach of social psychologyfruitful for softwaretechnological solutions at the organizational HCI-layer tried to merge theoutlined theoretical assumptions into formal and therefore programmablealgorithms of interpersonal relations.

The failure of these early attempts of so called orgware improvements ispresumably caused by the inflexibility of formal logic underlyingcorresponding design concepts. Social interaction is always related tocontents and relations. Contents can be structured by a

complex and logical syntax. Relationships however are much more structured by the semantics of symbolic clues which have dynamically tobe (re)interpreted in the already mentioned cycles ofrole-taking/role-making. This kind of Symbolic Interaction obviouslyrequires a certain kind of reciprocal intimacy, otherwise symbolic clues like gestures, loudness, nervousness or relaxation can notbe perceived adequately within their semantic context. This intimacy is notonly closely related to expressive and receptive (dis)abilities ofinteraction partners but also to the so called immediacy of the medium being used for interaction.

With regard to Multimedia, a lot of new facilities are currently conceivedor being developed, which make up a bundle of multifacetted modes ofcommunication offering different degrees of immediacy. Especiallyrehabilitation technology offers a lot of acoustic, visual and taktile HCI-adaptations which are best suited to mediatethe semantics of symbolic clues. Stereophonic Earcons (like the sound of ahitten trash bin for the Macintosh delete-procedure) or Virtual Lipreaders (like the artificial human face on agraphics display, moving its lips to corresponding verbal sound input) areonly two of a lot of thinkable examples to illustrate the potential ofmultimodal HCI-Adaptations to receptive disabilities.

Whereas the first example refers to the I/O- or at best thedialogue-interface, only the last example refers to computer-mediatedsocial interaction. More of the latter examples are therefore needed tosupport social immersion and not only content-oriented awareness of what is going on in computer-supported peer-and working groups. This is especially true for people whose immersiveabilities are already restricted by a receptive handicap. Finally, thedemand of inter-impairment compatibility for CSCW-adaptations to receptive disabilities becomes important, so thatfor instance acoustically supported immersion for the visually handicappedcan be matched with visual support for hearing impairments. Only theninteractive reactions of "Calling the Blind" can truly be "Watched by the Deaf".