24. Synergy effects with mobile (audio and) video telephony

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Multimodal percepts as compared to unimodal (e.g., visual, auditive) percepts contain more information and as such can advance various processes; e.g. , communication. Despite, on the one hand, the vast amount of studies that illustrate this and, on the other hand, the progress in technology, (multimodal) mobile video telephony (MVT) is not used on a large scale. In a quest to explain the latter, we studied the influence of screen size on the synergy of audio and video and its influence on the illegibility of the information. The study focused on the effects of screen sizes on multimodal perception since a small screen size is a key feature of mobile phones and former research seldom examined the effects of screen size. 54 participants conducted an experiment in which the intelligibility of a standardized video-listening test was determined for three screen sizes: mobile phone, PDA and PC monitor. A signal-to-(white) noise ratio of -9dB significantly limited the intelligibility of the videos. A significant increase in intelligibility for the large compared to the small screens was found. With respect to the Quality of Service of MVT, two conclusions result: 1) the display size should be maximized and 2) already considerable amounts of noise decreases intelligibility. Consequently, we emphasize the need for both research on effects of screen size and noise on multimodal perception and technological development to develop optimal MVT.