

An Intergenerational Approach of Bio-Behavioral and Representational Organizations of Attachment in Infant-Mother Dyads- 2nd phase: A Study with a Multimedia System

Results:

We developed a multimedia system, a full digital solution, named *BioBeAMs – Bio-Behavioral Attachment Multimedia System* – that enables the synchronous collection of video and audio information and ECG signals during the *Strange Situation*, an experimental procedure aimed to assess the quality of the attachment relation between the infant and his/her attachment figure.

A camcorder is connected to a digital video acquisition board plugged into a PC computer bus. This board enables the digital acquisition of video and audio data to the PC hard disk at up to 30 frames per second with a compression rate up to 20:1 provided by a dedicated video processor corresponding to a throughput of 800 Mb/hour approximately. The bio-signal is acquired by portable units attached to the participants that send the digitized signals to the PC through standard serial ports. *BioBeAMs* permits multimedia reviewing and editing procedures.

After the multi-integrated acquisition of video and the bio-signals, the researcher can visualize in real-time all the informations: the video is displayed in a window and the corresponding bio-signal is displayed on another window, where a dynamic cursor shows the bio-signal sample that corresponds to the video frame played at that moment. The researcher can then stop, watch frame by frame, set episode's boundaries, add event labels or write notes to the scene being analyzed, using the mouse which is a very convenient way for users. *BioBeAMs* provides also score sheet dialog boxes for rating, one for the final result and three for individual raters, allowing several raters to evaluate the instance or the episode independently. It also provides a dialog box for processing the results, e.g., grouping the cases, saving to file and exporting to MS Exceltm.

Published Work:

Zhan-Jian L., Soares, I., Silva, C., Pinha, A, Neves, L, Costa & Cunha, J.P *A multimedia system for assessment of attachment organizations and heart-rate*. Proceedings of the Conference of IEEE- Engineering in Medicine and Biology Society, Hong-Kong. 1998

Zhan-Jian, L., Soares, I., Silva, M.C., Pinho, A., Neves, L., Costa, O., Cunha, J.P. *BioBeAMS: A multimedia system for assessment of attachment organizations and heart-rate*. *Aqui e além do cérebro – Actas do 2º Simpósio da Fundação Bial*. (pp.275-281). Porto: Fundação Bial. 1999

Soares, I., Silva, M.C., Cunha, J.P., Costa, O., Santos, P. *Attachment organizations and heart-rate variability in the Strange Situation*. *Aqui e além do cérebro – Actas do 2º Simpósio da Fundação Bial*. (285-291). Porto: Fundação Bial. 1999