

Does the Brain Differentiate Between Related and Unrelated Cuts When Processing Audiovisual Messages? An ERP Study

PIOTR FRANCUZ and EMILIA ZABIELSKA-MENDYK

Institute of Psychology, John Paul II Catholic University of Lublin, Lublin, Poland

The purpose of this study is to test the hypothesis that during audiovisual message processing (e.g., television or film), cuts in the video track cause an orienting response, which is reflected in the involuntary shift of attention. In classic research by Reeves et al. (1985), changes in the alpha band were noticed in reaction to montage cuts. We propose an investigation of the brain's reaction to montage cuts by means of event-related potentials (ERPs), which are the brain's electrophysiological responses to a stimulus. Well-known indices of orienting response are two ERP components: P3 and slow cortical potential (SCP). Ten participants watched a film consisting of 105 related and 114 unrelated cuts while an electroencephalographic signal was recorded. The hypothesis that unrelated cuts in the video track when watching an audiovisual message cause more pronounced SCP was confirmed. There was no effect of unrelated cuts on P3. The results of this study provide a good starting point for further research on brain reactions to the structural features of an audiovisual message, such as close ups or camera moves.

The film shot is a sequence of images (frames) recorded using a film camera. Shots are joined together in the order specified in the screenplay. Their order has a significant effect on the meaning of the story (Carroll & Bever, 1976). Each film consists of a number of shots of varying length. A 1.5 hour film contains 500–600 shots, with an average length of about 10 seconds (Germeys & d'Ydewalle, 2007). In a 30-second television commercial, there may be 20–25 shots, some of which last less than one second.

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Address correspondence to Emilia Zabielska-Mendyk, Institute of Psychology, John Paul II Catholic University of Lublin, Al. Raclawickie 14, 20-950 Lublin, Poland. E-mail: emilia.zabielska@kul.pl