

## **Triangulating eye tracking and GSR measurements for aesthetic impact assessment**

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It is hardly out of place to claim that works of art containing visual and auditory elements, such as moving images and music, contribute potentially to multifarious audience responses, being cognitive-evaluative, behavioural as well as psychophysiological. However, when discussing research methods, and especially whether such responses can be investigated empirically, one enters a controversial problem area with little or no consensus among research contributors. On the one hand, we find empirical aesthetics, a branch of psychology dominated by empiricist methods of generating hard data; and on the other, there exist a number of hermeneutic and cultural-theoretical approaches focusing on audiences' meaning-inference processes. In this paper, we concentrate on the former, arguing that galvanic skin-response (GSR) monitoring in combination with eye tracking can be used to determine the intensity of an aesthetic sensation. While not new, technology-based devices and methods of measuring psychophysiological effects are becoming ever more accessible and pervasive due to accelerating advancements in the development of new products, resulting in continuous purchase price reductions. As for GSR—a standard measure of the electrical conductance of the skin's moisture level, which is related to the level of arousal (i.e. the state of physiological and psychological 'awakeness') and possibly the intensity of an affective or emotional experience—data can be collected next to unobtrusive in any environment by using wireless sensor technology. The same goes for eye tracking, providing data on where and how long an observer has focussed as well as pupil dilation (the latter also related to arousal effects). Each of these technologies can produce a variety of interesting data, but also data that can be hard to interpret in isolation. We argue that eye tracking, with its stream of temporal and situated data on attention, can aid interpretation of physiological measurements and be instrumental in supporting the test of hypotheses of the degree to which visual or auditory elements are causing arousal and other effects. Eye tracking also supports further triangulation potentials by e.g. replaying recent interaction and doing retrospective think-aloud sessions capturing qualitative data on participants' motivation and experiences. We contend that the time is ripe for research in the incorporation of such methods to measure the intensity of an aesthetic sensation, and report experiences on the combined use of GSR and eye tracking from our master-level class on Applied Aesthetics, where students created their own productions and carried out effect evaluations using this combination.