

Affect in digital game worlds: A self-reported evaluation tool within a multi-disciplinary research context

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Abstract

We introduce a self-reported evaluation tool for monitoring affect states in game players taking part in digital game worlds. This psychological measure is derived and evolved from recent research in emotion and cognition, and which has been applied in several studies in experimental psychology. The tool is being integrated into the multi-disciplinary Shadowplay research project, in which the results of empirical tests will be correlated with the outcomes of participatory design exercises.

Introduction

According to Reber (1985, p. 15), affect is a :”... general term used more-or-less interchangeably with various others such as *emotion*, *emotionality*, *feeling*, *mood*, etc.”. Other definitions have proposed that affect is a broad term comprising emotion (a brief intense experience such as anger) and mood (a prolonged and low-intense experience such as melancholy). In the words of Simon (1982, pp. 335-336): “*emotion* ... refers to affect that interrupts and redirect (usually with accompanying arousal), *mood* ... refers to affect that provides a context for ongoing thought processes without noticeably interrupting them.”. Within these categories an additional distinction is made, that of *positive* and *negative* emotionality and mood (e.g. Watson, Clark and Tellegen, 1988). Furthermore, Russell (e.g. 1980) has shown in a series of studies that humans’ conceptualizations of emotional experience might be represented by a circumplex affect space, comprising two bi-polar dimensions of perceived activation/deactivation and pleasure/displeasure. According to Russell (2003) these affective states are at *center* in human emotional experience. In his words: ”Core affect is primitive, universal, and simple (irreducible on the mental plane). It can exist without being labeled, interpreted, or attributed to any cause” (Russell, 2003 p. 148). According to Russell (2003) we always have core affect that moves about in the circumplex affect space as a result of external and internal events. “Core affect can be neutral (the center point), moderate, or extreme (the periphery)... Change in core affect, in proportion to its rapidity and extent, fills consciousness. When the feeling weakens or stabilizes, it recedes into the background. When neutral and stable, perhaps core affect disappears altogether from consciousness” (Russell, 2003, p. 149).

In line with the Larsen and Diener (1992) labeling system for a circumplex affect space, Knez and Hygge (2001) developed a Swedish measure for the self-rated current emotional experience (see Figure 1), which has been used in studies on effects of light and noise on emotion (Knez & Hygge, 2001), on autobiographical memory (Knez, in press), on place assessment (Knez & Thorsson, in press). As can be seen in Figure 1, *pleasant* affect states (pleasure) are placed at the right side and *unpleasant* affect states (displeasure) are placed at the left side. Consequently, *high activation* affect states (activation) are placed above and *low activation* affect states (deactivation) below. In the studies, mentioned above, the participants

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were asked to rate their core affect, current emotional experience, by rating the forty-eight adjectives representing the eight affect states on 5-point scales from "little or not at all" to "very much", in reply to the question: "How do you feel now?" The core affect was measured twice, in the beginning (a baseline) and at the end of the experiment/exposure, in order to obtain a *mean change* (end *minus* beginning) in core affect over time.

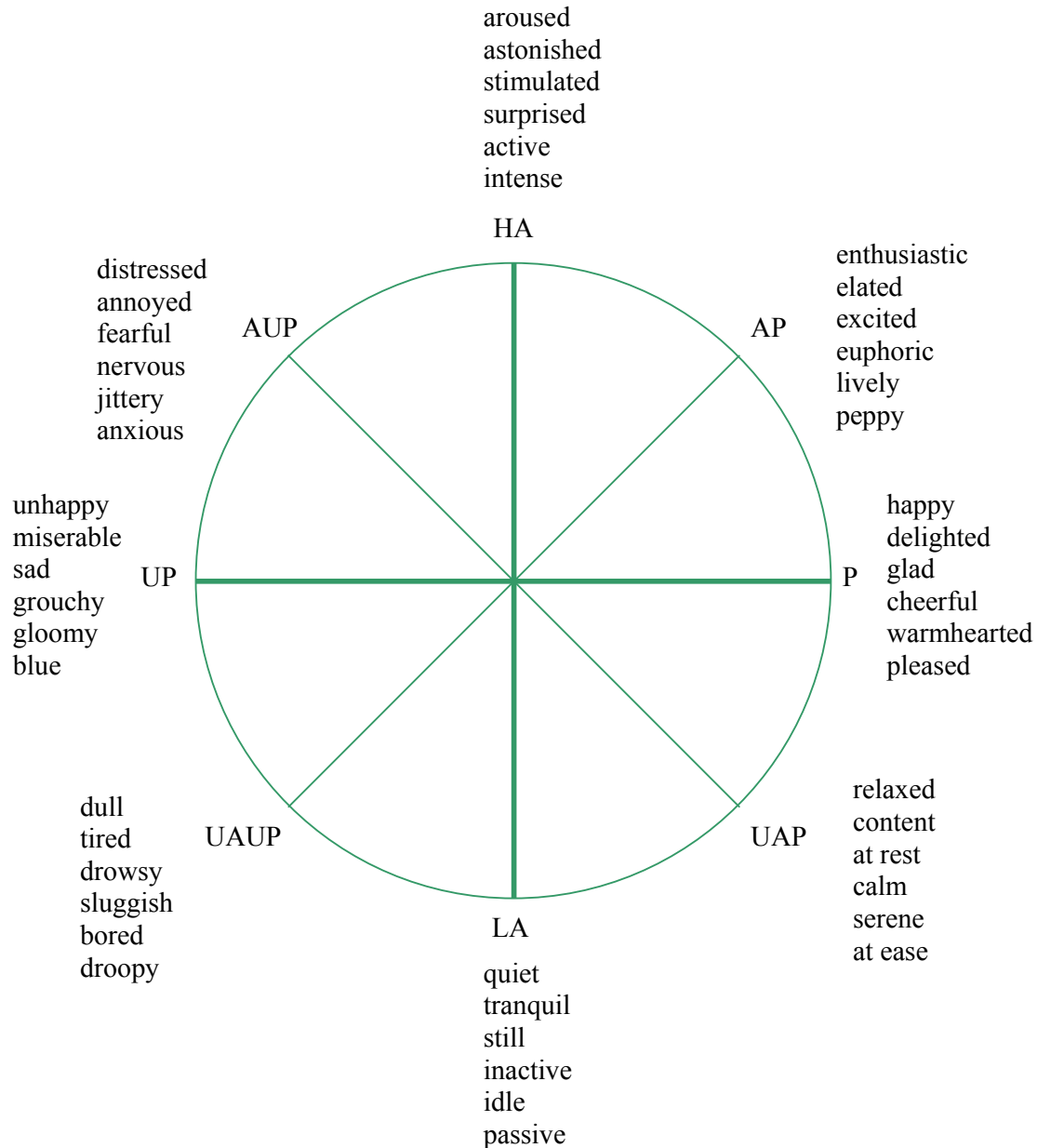


Figure 1. The affect circumplex space, with eight affective states represented by forty-eight English adjectives and the corresponding Swedish adjectives: HA = High Activation; AP = Activated Pleasant; P = Pleasant; UAP = UnActivated Pleasant; LA = Low Activation; UAUP = UnActivated UnPleasant; UP = UnPleasant; AUP = Activated UnPleasant.

Shadowplay - Simulated illumination in game worlds

Shadowplay is a two-year research project funded by the Swedish Knowledge foundation. Our aim is to study the influence of simulated illumination in digital game worlds upon the emotions and behaviour of the player. Researchers in the project come from cognitive/environmental psychology, interaction design and media lighting practice, and theatre lighting design.

One of our project goals is to find means of supporting knowledge transfer between lighting design professionals, game engine programmers, and the academic light research community. Although the latter group has a well-established infrastructure for knowledge-sharing—including journals, established university programs, etc—the knowledge of lighting professionals in media and the game industry tends to remain “tacit knowledge” that is expressed through the artifacts and experiences they design. Further, lighting design in the area of digital games extends to the non-professional activities of players, who can customize the appearance their game worlds through level editors.

We propose to use the outcomes of our empirical studies with the self-reported evaluation tool as the starting point for participatory design exercises with game lighting professionals, as well as players. The very terms that are used as the basis for self-reported affect can be the seeds for communal making and knowledge-sharing. As an example, if the results of gameplay under controlled conditions tend to show that certain affect states result from a given lighting condition, we can follow up with a participatory exercise in which lighting designers and players come together to create game worlds designed to evoke the same affect state. We would then seek correlation of the workshop outcome with the empirical results. In this manner, we hope to access the tacit knowledge of lighting professionals, and contextualize our empirical results more meaningfully within professional lighting design communities.

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