

On the Consumption of Negative Feelings

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How can the hedonistic assumption (i.e., people's willingness to pursue pleasure and avoid pain) be reconciled with people choosing to expose themselves to experiences known to elicit negative feelings? We assess how (1) the intensity of the negative feelings, (2) positive feelings in the aftermath, and (3) the coactivation of positive and negative feelings contribute to our understanding of such behavior. In a series of 4 studies, consumers with either approach or avoidance tendencies (toward horror movies) were asked to report their positive and/or negative feelings either after (experiment 1) or while (experiments 2, 3A, and 3B) they were exposed to a horror movie. We demonstrate how a model incorporating coactivation principles and enriched with a protective frame moderator (via detachment) can provide a more parsimonious and viable description of the affective reactions that result from counter-hedonic behavior.

Readers who are unfamiliar with the vastly popular (in some circles!) horror movie genre might have missed the following scene. Two men wake up in a filthy bathroom chained to massive steel pipes at opposite ends of the room. The blood between them is from a man's corpse still holding the gun he used to kill himself. The two men discover two hacksaws. The tools are too dull to cut the massive chains that keep them imprisoned but seem sharp enough to hack off their limbs and set them free. Jigsaw, the wildly popular killer, graphically tantalizes his prey. One victim must crawl through razor wire to escape. Another must find a key to overturn a bear-trap attached to his mouth. Suggestively titled "Saw," the movie generated \$18 million in box office receipts in its opening weekend on Oct 2004, hitting 3<sup>rd</sup> place in US box office ratings (behind only "Ray" and "The Grudge," another horror movie). Saw II was released one year later.

These and a number of other box office hits attract audiences by immersing them in nearly two hours of fear, disgust, terror, and depravity. For that reason horror movies provide an excellent window into counterintuitive consumer preferences for emotional experiences that produce negative emotional responses. Theories that have attempted to explain such behavior rely on the assumption that people cannot experience positive and negative emotions at the same time and build either on the premise that some level of arousal is experienced positively or that people are willing to endure negative affect in order to experience a positive aftermath. In this article, we provide evidence to support the coactivation of oppositely-valenced emotions in order to better address the question of when and how pleasantness is experienced when people choose apparently aversive consumption activities.

Although our empirical context is limited to horror movies, from a theoretical standpoint the factors we investigate should be important to experiences that (either personally or

vicariously) encompass the fearfulness and terror of lives at risk (e.g., extreme sports) and the repulsion and disgust of degradation and perversion (e.g., magazines and games depicting cruelty and pain). This issue will be further addressed in the discussion section. We start at the other end of the spectrum and with the conventional assumptions of hedonism.

## **HEDONISM AND NEGATIVE AFFECT**

A veritable mountain of evidence documents the opposing reflexive and automatic responses of simpler living organisms to appetitive (approach) and aversive (avoidance) stimuli as well as our tendency to respond favorably (unfavorably) to experienced and anticipated affectively positive (negative) states. Indeed, hedonism's prime directive—that is, people's tendency to pursue pleasure and avoid pain—is one of the most well grounded assumptions in psychology and consumer behavior. Affect-related theories in a variety of domains have relied on some variant of the hedonistic assumption to develop their models. For example, at the core of the appraisal literature is the notion that one of attitudes' main functions is to help individuals approach what is good and avoid what is bad (Maio and Olson 2000). Affect regulation models presume that people will spontaneously try to improve their current affective state when feeling bad and protect it when feeling good (Andrade 2005; Isen and Simmonds 1978; Tice, Bratslavsky, and Baumeister 2001), as long as stronger competing goals are not available (Cohen and Andrade 2004; Erber, Wegner, and Therriault 1996). Also, recent developments in behavioral decision theory have formally incorporated anticipated pleasure as the critical determinant of choice, showing its stronger predictive power compared to standard utility constructs (Mellers 2000). Ironically, however, mainstream media, commercial sponsors and the

entertainment industry appear to assume that, more than ever, consumers desire to acquire and consume experiences known to elicit fear, pain, sadness, or disgust. This extends from popular television programs such as “Fear Factor” to horror movies that display mayhem and cataclysmic destruction to electronic games featuring exceptional brutality and violence.

Is there a conflict between the basic hedonistic assumption and people’s willingness to experience negative affect? If not, how can we best explain the latter without discarding the former? Precisely, when and how is pleasantness experienced as people choose apparently aversive events? Traditionally, two groups of accounts have been provided. Each will be introduced briefly here and will be examined in more detail later.

One possibility is simply that there is no such contradiction because people who expose themselves to stimuli observers perceive to be aversive may not be experiencing any meaningful level of negative affect and may actually be experiencing pleasant arousal (Zuckerman 1996). Even for negative affective states, the intensity of arousal has been shown to be individual specific and susceptible to adaptation. Further, responses to lower intensity arousal vary considerably, and, because of that, one person’s discomfort can be another’s pleasure. (e.g., “When I watch a horror movie I’m not afraid; I enjoy the excitement!”).

A second group of hypotheses proposes that people are focusing on the aftermath (Berlyne 1960; Solomon and Corbit 1974; Zillmann 1980). Once the aversive stimuli are removed and some level of arousal remains, subsequent feelings of relief or pleasantness emerge (e.g., “Bungee jumping is fun, when it is over!”). This is consistent with the joke about the person who kept banging his head against a wall because he felt so much better when he stopped. People come to understand that most television programs and movies end with a feeling of relief rather than lingering negative consequences. Thus, people may be willing to endure the fear and

unpleasant experiences in order to enjoy the positive feelings brought on by relief. In fact, it is conceivable that people who can fully anticipate relief may even prefer heightened levels of negative arousal.

Explanations for exposure to aversive stimuli originating in these two groups of models adopt the traditional assumption that individuals can not experience opposite feelings at the same time. However, there is growing evidence suggesting that mixed feelings or coactivation is not only possible but quite common (Larsen et al. 2003; Larsen, McGraw, and Cacioppo 2001; Schimmack, 2001; Watson, Clark, and Tellegen 1988; Williams and Aaker 2002). We argue that explanations for counter-hedonistic behavior should be consistent with newer evidence that people can simultaneously experience conflicting emotions, though that is presently not the case. We intend to show, first, that positive and negative feelings can actually co-occur when people are exposed to apparent aversive stimuli (e.g., a horror movie). Also, such co-occurrence can appear in the shape of a positive correlation between feelings of opposite valence (e.g., fear and happiness) during the exposure to the event (e.g., “It may seem masochist, but the more scared I feel watching a horror movie, the more I enjoy it!”).

Second, and contrary to the existing intensity model assumption that negative arousal is experienced instead as pleasurable, we aim to show that those who pursue such apparently aversive events, can actually experience a similar level and pattern of negative feelings as those who have deliberately avoided them. This would be an important demonstration that positive affect does not merely replace negative affect because of interactions with arousal (particularly at relatively low levels). We do not quarrel with the intensity model findings that there can be substantial variation (both across people and over time, due to adaptation) in responses to

arousal. However, we believe that the assumption of people's inability to experience positive and negative affect at the same time is incorrect and should not be used to help explain such findings.

Third, we attempt to demonstrate that two aspects of existing aftermath models are untenable. If we can establish coactivation of positive and negative emotions during exposure to aversive stimuli, the assumption that people can only experience positive affect in response to feelings of relief after the aversive stimulus has been removed would need to be abandoned. We also expect to find that feelings of relief can be stronger among those who have *avoided* the experience in the past compared to those who have frequently chosen to expose themselves to such stimuli. The opposite should be true under aftermath model assumptions since feelings of relief (and consequent positive affect) are held to be decisive in leading people to approach rather than avoid fearful experiences.

Finally, we propose a moderator that may be necessary for co-occurrence to be a stable state and that is likely to affect repeated pursuit of "aversive pleasures" such as horror movies as well as truly dangerous activities. To this purpose we adopt the notion of a protective frame (Apter 1982, 1992) and directly manipulate this perceived frame of mind to show that individuals can learn how to experience positive feelings while still being absorbed by the fearfulness of the event. We conclude with a discussion of how to integrate the intensity and aftermath hypotheses within a coactivation approach.

The evidence described above is provided in a series of 4 experiments where two groups of participants (those with approach or avoidance tendencies toward horror movies—hereafter "fear avoiding" [FAV] and "fear approaching" [FAP] participants) are exposed to horror movies and asked to report their positive and negative feelings, either after (experiment 1), or during video exposure (experiments 2, 3A, and 3B). An online affect scale (OAS) and an online affect

grid (OAG)—adapted from Larsen, Norris, and Cacioppo (2005)—are used to continuously capture the intensity and pattern of affective states while participants watch the scenes. Finally, the role of a subjective protective frame of mind as a critical moderating variable is examined.

### **INTENSITY-BASED MODELS**

The intensity of affective reactions is known to vary substantially across individuals, a phenomenon that has been termed affective style (Davidson 1992, 1998). Such variance can be attributed to gender (Bradley et al. 2001), personality traits and psychobiological differences (Zuckerman 1979, 1996), as well as adaptation (Fenz and Epstein 1967). It has been hypothesized for some time, then, that an apparently aversive experience may not actually trigger strong negative feelings. Thus, it may not be aversive at all. More generally, Fenz and Epstein's (1967) theory of inhibition of fear posits that the levels and pattern of fear response vary as a function of individuals' prior experience. In a study on parachute jumping, experts showed not only lower levels of fear/anxiety than novice jumpers, but they also presented different patterns of response. Among novice jumpers, response rose monotonically from the morning of the jump until the moment of the jump, reducing to normal levels after landing. For experienced jumpers however, the fear response peaked early on the day of the jump but dropped to below normal just before the jump (but see Roth et al. 1996). The authors concluded that experts were capable of inhibiting fear and consequently enjoyed the experience. However, if experience is required to lower fear, and consequently, to increase pleasure, why do people expose themselves to such stimuli in the first place (i.e., when they are all novices)? Zuckerman (1979) moved beyond adaptation and suggested that some individuals might be intrinsically more "in need of" arousal

and/or more insensitive to the apparent aversiveness of the stimuli. Initially, sensation seeking theory proposed that people vary in their optimal level of stimulation (OLS). When people move to a more optimal level of arousal, positive affect is experienced, and that should explain why people select arousing experiences, even if the arousal is caused by negative affective states.

It is easy to overstate this effect, and as the author latter recognized “To say that sensation seekers seek arousal of any kind is somewhat of an exaggeration. Sensation seekers are generally hedonists who seek pleasurable arousal. Although they do sometimes take risks that incur some fear arousal, I do not believe that the fear arousal is the point of most of their activities. It is their incurable optimism that the risky activity will bring more pleasure than pain that makes them...quite sensitive to signals of reward and insensitive to signals of punishment” (Zuckerman 1979, p. 357). In other words, sensation seekers, independent of experience, are more likely to experience lower levels of negative affect as a result of a threatening environment. Differential response to affect intensity helps to explain the positive association between the sensation seeking scale and preference for risky sports and activities, from parachute jumping, to scuba diving, to car racing, to fire fighting. As Zuckerman summarized “The lack of fearfulness makes high sensation seekers more adventuresome...” (p. 217). More recently, sensation seeking has also been suggested to bias media preferences towards highly arousing movies genres, such as horror, X-rated, and action films (Zuckerman 1996). Nonetheless, evidence that sensation seekers actually experience lower levels of fear has been inconclusive to this point (e.g., Litle 1986, in Zuckerman 1996)

In summary, intensity models assume that individuals who look for so-called aversive stimuli are in fact much less, if at all, influenced by its unpleasantness (relative to its arousal properties), and that this enables them to absorb it in a more positive fashion. By implication,

then, a horror movie should not be as fearful, if at all, to fear approach consumers by virtue of two key moderators: individual differences in sensation seeking and adaptation. These models would predict that when facing an aversive event, those who enjoy the genre and/or frequently expose themselves to it (FAP) should experience significantly weaker negative affect (e.g., fear), if any, along with stronger positive affect (e.g., positive excitement/happiness) during and just after exposure compared to those (FAV) who prefer to avoid such a stimulus. We will test the validity of these propositions.

### **AFTERMATH-BASED MODELS**

The aftermath models assert that people endure negative experiences in search of the relieving and joyful consequences that emerge as soon as the exposure to the unpleasant stimuli is over. The subsequent pleasure derives from a combination of aversive stimulus removal and residual arousal. Unpleasantness dissipates, and the remaining arousal state is misattributed—following Schachter and Singer’s (1962) rationale—to the relieving/pleasurable aftermath experience. This underlying principle has been incorporated into Solomon and Corbit’s (1974) two opponent-process theory, Berlyne’s arousal-jag model (1960), and Zillmann’s plot resolution hypothesis (1980) and used to explain phenomena that vary from parachute jumping to suspense movie watching. For Solomon and Corbit’s as well as Berlyne’s theories, stimulus removal suffices for positive affect to be enhanced. Zillmann’s hypothesis highlights the importance of a happy turn of events in the resolution of the suspense for positive affect to occur. Solomon and Corbit’s model incorporates adaptation. They suggest that over time frequency of exposure does reduce negative affect. But, most importantly, it also makes the aftermath even more pleasant

and more long-lasting (see also Solomon 1980). As indicated earlier, this assumption underscores our empirical test of the proposition that: if relief (and consequent positive affect) are the goal, those who repeatedly seek (rather than avoid) the experience should be those who find the aftermath most pleasant and thereby obtain the greatest reward from it.

Although they vary in scope, a key premise of intensity and aftermath models is that people learn that exposure to such apparent aversive events (and this is critical, because they are held not to be experienced as such in intensity models) is a precursor to positive feelings that emerge either with the onset of arousal (intensity models) or once the stimuli are removed and/or, according to Zillmann's rationale, the end is satisfactory (aftermath models). For both models, the correlation between fear and happiness is predicted to be either null or negative during and just after exposure to the aversive stimuli. Finally, the two opponent-process theory suggests that frequency of exposure reduces negative affect and enhances aftermath feelings of pleasure. In other words, those who frequently expose themselves to a particular set of aversive stimuli (vs. those who do not), should be the ones to feel less afraid during stimuli exposure and to derive more pleasure in the aftermath.

### **A COACTIVATION-BASED APPROACH**

The well established models discussed above assume that positive and negative feelings can not be experienced at the same time. However, recent findings in consumer behavior (Lau-Gesk 2005; Williams and Aaker 2002) as well as research in psychology (Larsen et al. 2001; Schimmack 2001; Watson et al. 1988) have challenged this view. Based on Cacioppo and Berntson's (1994) evaluative space model (ESM), Larsen and colleagues asserted that positive

and negative affect may well coactivate under specific circumstances. They showed that participants surveyed in conjunction with affectively ambiguous experiences (i.e., after watching the movie “Life is Beautiful,” while moving out of their dorms, or during graduation from college) reported experiencing both happiness and sadness at the same time. Although the mapping of the emotional brain is still far from complete, neural evidence may also provide insights into the independence of specific emotional states. The neural correlates of feelings seem to vary as a function of emotional specificity (Lane et al. 1997; Phan et al. 2002). For instance, there has been evidence implicating the amygdala as the main neural correlate for fear (LeDoux 1996) and likely for other negative emotions (Adolphs, Russell, and Tranel, 1999). Happiness, on the other hand, usually requires pre-frontal cortex participation, among other areas (Ashby, Isen, and Turken 1999).

Accordingly, we believe that a reevaluation of the two dominant explanations for people’s willingness to consume “negative” experiences (both of which assume that people can not experience negative and positive emotions simultaneously) is in order. Coactivation (a basic emotion concept rather than a competing model intended to answer questions about why or when people expose themselves to aversive stimuli) should be incorporated to provide a better understanding of this behavior. For that to be the case, and since (to our knowledge) coactivation assumptions have not been examined in this domain, we would first need to demonstrate that coactivation, rather than traditional assumptions, hold here.

Implications

Three main and unique implications can be derived from coactivation assumptions. First, an increase in positive affect does not come at the expense of negative affect. So, contrary to the intensity model, those who pursue such apparently aversive events could experience as much negative affect as those who choose to avoid them. Second, since positive affect can be experienced along with negative affect, the explanatory power of relieving negative affect should not be as great as an aftermath model proposes. Ironically, assuming coactivation, feelings of relief should be stronger among those who tend to avoid rather than engage in the experience in the first place. Third, coactivation permits a positive correlation between feelings of opposite valence (e.g., fear and happiness). Thus, within a certain range, the most pleasant moments of a particular event may also be the most fearful. Cacioppo and Berntson's ESM (1994) also allows for the possibility of these positive correlations, though direct evidence is still scant in the literature.

In short, coactivation is now reasonably well supported as a proposition about people's ability to simultaneously experience oppositely valenced affective states. However, a coactivation approach, by itself, cannot explain when people would choose to experience negative affect or consume/expose themselves to seemingly unpleasant, frightening, and even disgusting forms of entertainment.

### The Protective Frame

Apter (1982, 1992) coined the term protective frame to help explain when people would undertake extreme/dangerous sports. Although he suggests a conversion rather than coactivation process—that is, individuals' ability to quickly reappraise anxiety into excitement—, his model

asserts that for positive affect to result one must adopt a frame of mind adequate to convince the person that *real* danger/threats are not actually present. The author suggests three types of protective frame: confidence frame (i.e., one feels the danger, but is confident about his/her skills to deal with it), safety-zone frame (i.e., one places himself/herself sufficiently away from immediate/likely danger), and detachment frame (i.e., one observes the danger, but does not interact with it). Direct evidence and/or manipulations of such frames are scant in the literature, and we will address this gap by directly manipulating the detachment frame. We propose that coactivation when seemingly aversive events are experienced is particularly likely when people are embedded in a protective frame and can detach themselves from harm resulting from the observed experience.

## **OVERVIEW OF THE EXPERIMENTS AND SPECIFIC HYPOTHESES**

Across the experiments we separated participants into those who deliberately choose to frequently expose themselves to (or to avoid—as a control group) a particular set of stimuli (horror movies), that are expected to evoke negative (fear-inducing), and possibly, positive (pleasure-inducing) affective reactions. Four experiments were conducted to address the affective strength and the affective patterns for these fear approach (FAP) and fear avoidance (FAV) consumers. We first tested whether both groups display similar or different levels and patterns of general negative affect (experiment 1) and/or specific feelings of fear (experiments 2, 3A, and 3B). The intensity models as well as the two opponent-process theory (i.e., one of the aftermath models) predict that negative affect should be significantly lower (or even non

existent) for FAP compared to FAV participants. Coactivation suggests that negative feelings could be as intense and display similar patterns across both groups.

The strength and pattern of positive affect are also critical in evaluating competing explanations and assumptions. Coactivation is consistent with an increase in pleasantness during exposure to the horror movie, along with the possibility of a positive correlation between fear and happiness during video exposure. Aftermath models, however, predict pleasure to be derived only after the aversive scenes of the horror movie are removed, and that FAPs are more likely to experience it than FAVs at that point in time. Moreover, intensity and aftermath models suggest a negative or null correlation between the two states during and after video exposure.

Finally, we suggest that FAVs' ability to experience positive feelings together with negative feelings is hypothesized to be constrained by the absence of a detachment frame. So, if these participants are placed into a protective frame of mind, they should also be able to experience pleasure from the apparent aversive experience. As a result, we predict that the positive feelings would be significantly higher among FAVs when they are (vs. not) in a detachment frame. Also, the correlation between fear-related and happiness-related feelings could then switch from negative to positive as a result of the detachment frame.

### **EXPERIMENT 1 (PANAS SCALE – WITHIN-SUBJECTS)**

Experiment 1 assessed participants' affective states immediately before and immediately after exposure to a horror movie. They were asked to report their feelings with the widely used PANAS scale (Watson et al. 1988). This scale was developed to capture both positive and negative feelings associated with some level of arousal. FAPs' and FAVs' affective states were

contrasted, to compare predictions of the three models. This experiment was meant to test, first, whether the two groups vary in their levels of negative affect, and, second, if coactivation of positive and negative affect occurs for FAPs immediately after the horror movie (as opposed to after negative affect is dissipated).

## Method

*Participants and Design.* Eighty seven students from a western university were paid \$10 in exchange for their participation in the experiment. The experiment employed a 2 (affect measure: positive affect vs. negative affect) by 2 (timing: before vs. after horror movie exposure) by 2 (chosen exposure to horror movie: FAV vs. FAP) by 2 (stimulus replicate: “The Exorcist” vs. “Salem’s Lot”) mixed design. The first two factors were manipulated within-subjects.

*Procedure.* The experiment was conducted in a computer-based environment. Participants arrived in the laboratory in groups of 15 to 20 and were assigned to one of the 20 laptops. They signed a consent form and were then instructed to start the experiment. The cover story stated that the study was about movie preferences, and they were told they would randomly be presented with three types of video clips that could include several movie genres, such as documentaries, horror movies, dramas, and comedies. All participants watched a documentary to set their affective state followed by a horror movie. Then they watched five minutes of a Friends episode to raise participants’ feelings before they left the laboratory. Participants completed a PANAS scale before and after the horror movie (i.e., documentary, PANAS, horror movie, PANAS, comedy) to assess their positive and negative affective states as a result of the horror

movie exposure. Information about frequency of attendance per movie genre was recorded at the end of the experiment. Finally, participants were asked to report any problems with the experiment and were then properly debriefed.

*Film Clips and the PANAS Scale.* Two replicates were used to vary documentary and horror movie exposure. Replicate 1 contained the documentary “Africa” followed by the horror movie “The Exorcist,” whereas replicate 2 contained the documentary “Commercial Aviation” followed by the horror movie “Salem’s Lot.” Both documentaries were four minutes long, and were intended to create an affective baseline prior to the horror movie. Participants’ affective states were recorded with the PANAS scale (i.e., a five-point twenty-item scale—10 positive affect-related and 10 negative affect-related) after the documentary (i.e., prior to the horror movie). Each horror clip displayed intense scary scenes (e.g., the exorcist ritual) and lasted approximately 10 minutes. The PANAS scale was once again presented after the horror movie.

*FAP versus FAV Consumers.* At the end of the experiment (after the Friends episode) we assessed participants’ frequency of attendance for seven different movie genres. Since the study’s cover story was about movie preferences, and participants did watch different movie genres, frequency of attendance questions about genres other than horror were inserted to minimize any potential response biases and hypothesis guessing. Two groups were created: those who watch horror movies at least once a month and presumably choose to experience some level of fear (FAPs) and those who refrain from this exposure and watch horror movies at most once a year (FAVs) either at home, on video, or in the theaters.

## Results

The 10 positive affect-related items and the 10 negative affect-related items gathered before and after horror movie presentation were collapsed to form the respective PA and NA indexes ( $\alpha_{NA\text{before}} = .92$ ;  $\alpha_{NA\text{after}} = .89$ ;  $\alpha_{PA\text{before}} = .91$ ;  $\alpha_{PA\text{after}} = .81$ ). Valence (positive vs. negative) and time of recording (prior vs. after the horror movies) represented the two within-subjects variables. Participants' chosen exposure to horror movies (FAP vs. FAV) and the two replicates (Africa-The Exorcist vs. Aviation-Salem's Lot) comprised the two between-subjects variables. The replicate factor did not interact with any of the others factors on participants' feelings ( $F(1, 83) = .05, p > .10$ ), so the replicates were collapsed. A three way interaction emerged with valence, time of recording, and chosen exposure to horror movies interacting on affective state ( $F(1, 85) = 9.21, p < .005$ ; see figures 1 and 2).

--- Insert Figures 1 and 2 about Here ---

As predicted, the data revealed different changes in positive and negative affective states as a result of participants' chosen exposure to horror movies. Among FAVs, watching the horror movie significantly increased negative affect ( $M_{\text{before}} = 1.25$  vs.  $M_{\text{after}} = 2.49$ ;  $F(1, 55) = 81.7, p < .001$ ), whereas positive affect remained unchanged ( $M_{\text{before}} = 2.19$  vs.  $M_{\text{after}} = 2.16$ ;  $F(1, 55) = .06, p > .10$ ). Among FAPs, watching the horror movie also significantly increased negative affect ( $M_{\text{before}} = 1.45$  vs.  $M_{\text{after}} = 2.34$ ;  $F(1, 31) = 35.06, p < .001$ ). However, unlike FAVs, watching the horror movie significantly increased positive affect as well ( $M_{\text{before}} = 2.10$  vs.  $M_{\text{after}} = 2.62$ ;  $F(1, 31) = 11.56, p < .005$ ). Importantly, negative affect measured after the horror movie

did not differ between FAPs and FAVs ( $F(1, 85) = .53, p > .10$ ), whereas FAPs reported stronger post-exposure positive affect compared to FAVs ( $F(1, 85) = 9.46, p < .005$ ).

## Discussion

Experiment 1 produced three main findings. First, participants experienced an increase in negative affect independently of their preference for horror movies. FAPs and FAVs reported an increase in negative affect after the horror movie compared to their immediately prior affective state. They also displayed very similar levels of negative affect. This pattern of results provides initial evidence divergent from the intensity models, which suggests significantly weaker (if any) negative affect among FAP consumers. The data also speak against the aftermath models, which propose that the relieving and pleasant affective consequences result only from a reduction in negative affect after stimulus removal (or after the suspense is over). The current data show, instead, that after the movie clip ended, FAPs reported an increase in positive affect as well as an increase in negative affect. Since the expected reduction in negative affect under an aftermath model was not present and was not necessary for participants to experience positive affect, this casts doubt on that model's relief/pleasure process. Instead, the PANAS data provide initial evidence consistent with a coactivation-based model, which allows for positive and negative affective states to increase simultaneously as a result of a particular emotional event. For FAPs positive affect as well as negative affect increased as a result of the movie.

Some caveats must be highlighted. First, though the PANAS scale is so widely used that it is customary to conduct a study (in this and related domains) using it, the scale has its limitations. It has been established that PANAS captures some amount of arousal along with the

valence component of affect (e.g., “excited,” “distressed”) and that weakly arousing emotional states (e.g., “happy,” “sad”) are not assessed. As a result, the scale may overstate the independence of positive and negative affect (Barrett and Russell 1998), possibly heightening directional support for coactivation. Notice, however, that if the scale *per se* were to drive the effects, it should have influenced both FAVs and FAPs, and this was not the case. A second concern is that affective changes were recorded only after the movie and at a single point in time. Thus, measurement at that one instance constrains stronger statements about the absence of any relieving consequences. One could claim that positive affect emerged, at least in part, as a result of relief, since the data were collected after the aversive stimuli were removed. Finally, a distinction must be made between a state of coactivation (i.e., a positive and negative feelings being experienced at the same time) and a mode of coactivation (i.e., reflected by both positive and negative feelings moving in the same direction over time). A continuous within-subjects measure of positive and negative feelings tackles this issue.

## **EXPERIMENT 2 (ONLINE AFFECT GRID – WITHIN-SUBJECTS)**

In this second experiment participants were presented with a horror movie consisting of an aversive long scene followed by a short neutral scene. Based on Larsen et al.’s (2005) recent evaluative space grid, an online affect grid (OAG) was presented to participants so that they could continuously report both affective states with a single measure. Also, to avoid a potential positive arousal interpretation of the positive affect constructs—a concern when the PANAS scale is used—, participants were asked to report specific feelings related to happiness (rather than excitement and activation) and fear.

This methodology allows us to track the impact of relief and, thus, provide a stronger test of the aftermath rationale. Aftermath models predict that FAPs should benefit the most from the frequently experienced relieving consequences of horror movie exposure, presumably because of a longer history of reinforcement. Coactivation, on the other hand, predicts that pleasure can also be experienced during the aversive event. Therefore, the relieving benefits should be higher for FAVs who also should not experience positive affect during the aversive event (i.e., one they have repeatedly chosen to avoid). Also, contrary to the intensity models, coactivation suggests that negative feelings could be experienced at similar levels and with similar patterns when FAPs and FAVs are contrasted. Finally, assessing the co-occurrence of positive and negative feelings with a continuous measure will allow us to examine the emergence of a positive correlation between feelings of fear and happiness at the aggregate and at the individual level. The later tests the hypothesis that consumers are not only in a state of coactivation (that might reflect alternating emotions) but simultaneously experiencing parallel movements in positive and negative emotional responses (i.e., coactivation as a mode of response).

## Method

*Participants and Design.* Seventy-five students from a western university were paid \$15 in exchange for their participation in the experiment. The study adopted a two (affect measure: fear vs. happiness) by two (type of scene: aversive vs. neutral) by two (chosen exposure to horror movie: FAP vs. FAV) by two (grid: X = fear/Y = happiness vs. X = happiness/Y = fear) mixed design. The first two factors were manipulated within-subjects.

*Procedure.* The procedure was similar to that in the previous experiment. The cover story stated that the study was about movie preferences and that they would randomly watch three types of video clips, which could include several movie genres such as documentaries, horror movies, dramas, and comedies. All participants watched two minutes of a documentary which set a more neutral affective state prior to the horror movie and also allowed them to practice the online affect grid (OAG). Then they watched approximately four and a half minutes of a horror movie. While watching each film clip participants were asked to report their feelings (happiness and fear). We stressed that they should focus on their current feelings instead of trying to provide an overall assessment of the movie (i.e., attitude). People's ability to separate out feelings from evaluations using an online measurement tool has been demonstrated in the consumer behavior literature (Pham et al. 2001). Also, five minutes of a Friends episode was included at the end of the experiment to raise participants' feelings before they left the laboratory. Information about frequency of attendance per movie genre was recorded at the end of the experiment. Finally, participants were asked to report any problems with the experiment and were then properly debriefed.

*Online Affect Grid (OAG).* Larsen and colleagues' evaluative grid space was adapted so that participants could continuously indicate how happy, joyful, and/or glad and how afraid, scared, and/or alarmed they were feeling while watching the film clip (see Appendix 1). To do so, they needed simply to drag the button on the grid using the mouse. The X and Y axes represented either positive or negative feelings. Participants were randomly assigned to the X = fear/Y = happiness or to the X = happiness/Y = fear conditions. In the former, participants were instructed that if they were *only* afraid, scared, or alarmed, they should keep the button along the

X axis, moving it up and down as the feelings of fear modified. If they were feeling only happy, joyful, or glad, they should keep the button along the Y axis, moving it right or left as the feelings of happiness varied. The opposite instructions were presented in the  $Y = \text{happiness}/X = \text{fear}$  condition. For both groups, they were instructed that if they experienced a combination of both feelings, they could move the button anywhere in the grid. For instance, if they believed that both feelings were increasing/decreasing at the same time, they should move the button diagonally along or parallel to an imaginary line that linked the 0/0 to the 100/100 points on the grid.

Although the use of fear-related constructs is intuitive, the adoption of happiness-related constructs (happy, joyful, and glad) to capture positive affect deserves further justification. Happiness was selected primarily for two reasons. First, a low-arousal positive affect construct (happy) was required to avoid potential confounding with intensity measures (excited)—a concern when the PANAS scale is used. Second, the construct should also minimize individuals' potential confusion between an accurate report of current feelings and specific evaluations of the film clip that might be captured by more attitude-like affective terms (e.g., amused, pleased).

*Film Clip.* Participants were presented with an approximately 4 minute scene of the horror movie Salem's Lot—a different scene from the one used in experiment 1. The clip shows a sequence of events that intensifies as the story unfolds (i.e., a noise upstairs/suspense, an encounter with the ghost, graphic depiction of the ghost's scars, and the disappearance of the ghost/end of the scene). In order to capture any potential relieving effects, 27 seconds of a neutral scene from the same movie was added after the end of the aversive scene. The neutral scene showed two actors, other than those from the previous scene, chatting in front of a store.

During the movie, participants' feelings were recorded every 3 sec, which produced 84 data points per participant.

## Results

*Manipulation Check.* As expected, the properties of the grid (i.e., fear or happiness represented by the X or Y axis) did not interact with the other three factors ( $F(1, 69) = .41, p > .10$ ). The two levels of the grid factor were then collapsed.

*Affective Strength.* Participant's feelings experienced during each type of scene were averaged to assess the affective strength. The results show that reported affective state (fear vs. happiness), chosen exposure to horror movies (FAP vs. FAV), and type of scene (aversive vs. neutral) interacted on participants' feelings ( $F(1, 71) = 5.38, p < .005$ ).

Insert Figures 3 and 4 About Here

A closer look shows that the interaction is mainly driven by participants' assessments of their positive feelings (see figures 3 and 4). When separated by affective state (fear vs. happiness), type of scene, and chosen exposure to horror movie did not interact on fear-related feelings ( $F(1, 73) = .01, p > .10$ ). A straightforward main effect of type of scene emerged in which, for both FAPs and FAVs, the neutral scenes were less fearful ( $M = 18.1$ ) than the aversive scenes ( $M = 51.6, F(1, 73) = 95.89, p < .001$ ). More interestingly, the two factors interacted on happiness-related feelings ( $F(1, 73) = 10.61, p < .005$ ). Pairwise comparisons showed, as we

predicted, that FAVs reported more positive feelings after the aversive scene was replaced by a neutral scene ( $M_{aversive} = 2.4$  vs.  $M_{neutral} = 15.0$ ,  $F(1, 53) = 34.74$ ,  $p < .001$ ), whereas no difference was found among FAPs ( $M_{aversive} = 10.6$  vs.  $M_{neutral} = 10.7$ ,  $F(1, 20) = .01$ ,  $p > .10$ ).

*Affective Pattern.* The OAG allowed us to test (with a continuous within-subjects measure) the correlations between the affective states under investigation. The 84 fear and happiness data points were averaged for FAPs and FAVs. The results show that among FAVs there was a negative correlation between fear and happiness-related feelings ( $r = -.603$ ,  $p < .001$ ). However, the opposite was true for FAPs, with a positive correlation between these two affective states ( $r = .362$ ,  $p < .001$ ; see figure 5).

The same correlational tests were conducted at the individual level (i.e., subject-by-subject). To do so, first, Fisher- $z$  transformations of the individual correlations between fear and happiness during exposure to the horror scenes were conducted. The transformed correlations were then averaged and submitted to an ANOVA, which resulted in a significant main effect of frequency of chosen exposure to horror movies ( $F(1, 62) = 4.80$ ,  $p < .05$ ). As predicted, FAVs displayed a negative mean correlation ( $M = -14.21$ ) whereas FAP consumers displayed a positive relationship between fear and happiness ( $M = 14.04$ ). With respect to magnitude, these differences were not significantly different from zero ( $p > .10$ ).

Insert Figure 5 about Here

Discussion

This second experiment provides three main contributions. First, it replicates experiment 1 findings using a different means of measurement by showing that, contrary to the intensity models, the level *and pattern* of fear-related feelings were similar between those who repeatedly chose to expose themselves to fear-arousing horror movies (FAPs) and those who chose to avoid them (FAVs). Second, contrary to the aftermath rationale, FAVs (rather than FAPs) derived more pleasure from the removal of the aversive stimulus (i.e., during the neutral scenes), despite the fact that the drop in fear was equal across both groups. For FAPs, the relief-based benefits were virtually absent. And finally, the subject by subject analysis of the OAG provided unique evidence that co-occurrence not only took place among FAPs but presented itself in the shape of a positive correlation: pleasantness emerged along with negative affective responses to the most fearful stimulus material. This is consistent with coactivation as a general response mode, although the averaged (Fisher- $z$  transformed) correlation did not significantly differ from zero. The opposite pattern holds true for FAVs who displayed a negative correlation between fear and happiness-related feelings.

Measurement of affect is challenging, and we employed two very different types of measures in the first two studies as a way of improving validity and avoiding any directional bias. However, experiment 2 uses a cognitively demanding measurement of affect. Indeed, a few participants mentioned that having to report their feelings on a non-intuitive grid somewhat distracted them from paying full attention to the movie. Although the grid has been validated with a single point assessment task (Larsen et al. 2005), it may not perform as well when a longitudinal/continuous measure is used. Also, to explain how the grid worked, participants were instructed about several potential patterns of assessment, including the upward diagonal assessment which could suggest that there might be a positive correlation between the two

feeling states. Although such instructions cannot account for the correlation reversals between the two groups, it could have reinforced this possibility among FAP consumers. Finally, the aggregated correlations were influenced, at least in part, by the presence of a neutral scene after the aversive scene (i.e., stronger negative correlations among FAVs and weaker positive correlations among FAPs). These issues were tackled in experiment 3A and 3B where a somewhat different measure was employed.

### **EXPERIMENT 3A (ONLINE AFFECT SCALE – BETWEEN-SUBJECTS)**

In this experiment a between-subjects measure of affective state was used. Participants were asked to continuously report either happiness or fear-related feelings on a simple 100-point online affect scale (OAS). This measure reduces the complexity of the task and avoids instructions that could bias participants toward a particular response pattern. Moreover, only the aversive scene was presented to participants. Thus, happiness-related feelings, if any, would have to be experienced in conjunction with the negative event.

Again, we tested the hypothesis that throughout the video display happiness-related feelings are expected to be higher for those who repeatedly chose to expose themselves to fear-arousing horror movies (FAPs) compared to FAVs, despite the fact that fear-related feelings could also be present at similar levels and patterns when both groups are contrasted. Also, we assessed if the correlation between happiness and fear-related feelings would remain positive for FAPs and negative (or null) for FAVs when a between-subjects setting is used and when there is no neutral scene presented after the aversive clip.

## Method

*Participants, Design, and Procedure.* Eighty-one students from a western university were paid \$10 in exchange for their participation in the experiment. The experiment adopted a two (affect measure: happiness vs. fear) by two (chosen exposure to horror movies: FAP vs. FAV) between-subjects design. The procedure was similar to that in the previous experiment, except for the video (i.e., only the aversive scene was shown) and the affect measure (i.e., OAS replaced OAG).

*Online Affect Scale (OAS) and Film Clip.* A hundred-point bipolar scale was located below the video screen. It instructed participants to continuously indicate how happy, joyful, and/or glad (vs. afraid, scared, and/or alarmed) they were feeling while watching the film clip. Again, they were instructed to report their feelings rather than to provide a general evaluation (i.e., attitude-like) assessment of the film clip. To do so, they needed simply to drag the button on the scale using the mouse (see Appendix 2). Participants were presented with the aversive scene of the movie Salem's Lot (the same scene presented in experiment 2). Participants' feelings were recorded every 3 sec, which produced 75 data points per participant.

## Results

*Affective Strength.* By averaging the affective reactions it was possible to test whether participants' overall affective levels varied between FAPs and FAVs. Reported affective state (fear vs. happiness) and chosen exposure to horror movies (FAV vs. FAP) interacted on

participants' feelings ( $F(1, 77) = 11.06, p = .001$ ; see figure 6). Pairwise comparisons showed that when asked to report fear-related feelings, no difference emerged between FAPs ( $M = 45.0$ ) and FAVs ( $M = 53.0$ ;  $F(1, 77) = 1.44, p > .10$ ). However, when asked to report happiness-related feelings, as expected, FAPs reported higher levels ( $M = 28.0$ ) than FAVs ( $M = 3.8$ ;  $F(1, 77) = 11.88, p = .001$ ).

Insert Figure 6 About Here

*Affective Patterns.* The OAS also allowed us to see whether the patterns of affective states varied throughout the scenes across conditions (see figure 7). For fear-related feelings, the patterns were similar for both FAPs and FAVs. However, for happiness-related feelings, the patterns varied substantially between the two groups. Most importantly, we found a negative correlation between fear and happiness among FAVs ( $r = -.472, p < .001$ ) and a positive correlation among FAPs ( $r = .890, p < .001$ ).

Insert Figure 7 About Here

## Discussion

Using the OAS we found once again that those who repeatedly chose to expose themselves to fear-arousing horror movies (FAPs) and those who chose to avoid them (FAVs) displayed similar patterns of fearfulness throughout exposure to the aversive experience as well as no significant differences in intensity of fear reactions. Second, FAPs showed high levels of

positive feelings throughout the movie, even when no opportunity for relief was made possible. Finally, co-occurrence of fear and happiness-related feelings took place among the FAP consumers, with a positive correlation between the two feeling states. Thus, participants not only experienced “opposite” affective states at the same time, but, the most fearful scenes were clearly perceived to be the most pleasant ones.

Although the evidence so far is consistent with coactivation assumptions, coactivation by itself does not make predictions about when people would choose to experience negative affect. Apter’s (1982, 1992) notion of a protective frame has been used to explain when people would engage in extreme/dangerous sports. In this final experiment we examine the role of a protective frame (via detachment) by showing how it changes FAVs affective responses from those observed in our previous studies.

### **EXPERIMENT 3B (THE PROTECTIVE FRAME)**

People’s somatic and psychological reactions to fear, anxiety, stress and other aversive states have evolved as part of a complex pattern of response to real (i.e., personally relevant and consequential) events. Horrifying and/or suspenseful movie scenes (especially those depicting people like ourselves at risk, under bodily threat or worse) can also produce meaningful levels of negative affect, and consequently fairly high arousal. We learn, however, to separate reality from fiction and how to disengage to some degree so that our emotional responses are moderated. A protective frame, specifically one incorporating detachment (Apter 1992), constitutes one such disengagement mechanism. An ideal detachment frame gives people the ability to increase psychological distance from the main actors of the movie, while still absorbing the impact of the

scenes. It is doubtful that each of us has the identical repertoire of response mechanisms, including different mechanisms for emotional disengagement, or that we are equally adept in using them. Moving in the opposite direction, prior research has shown that high levels of cognitive empathy (i.e., perspective taking) can significantly reduce people's ability to experience positive affect when facing negative stimuli and that emotional empathy (i.e., empathic concern) tends to heighten negative affect (Davis et al. 1987). Also, when viewers are asked to watch aversive (e.g., disgusting) scenes and to put themselves in the character's shoes, their ability to experience amusement decreases significantly (Hemenover and Schimmack 2004). In this final experiment, we embed participants within a protective frame to see if those who repeatedly chose to avoid these aversive experiences (FAVs) are placed in a detachment frame may be able to experience coactivation, that is, displaying positive feelings while still being absorbed by the fearfulness of the event, something they were not able to do in our earlier studies.

We predict that, contrary to the results found in experiment 3A, no difference should emerge between FAPs and FAVs when they are all embedded within a given protective frame. In other words, FAVs should be capable of experiencing positive feelings along with feelings of fear and display a positive correlation between the two affective states. No change should be perceived among those who repeatedly chose to expose themselves to fear-arousing horror movies (FAPs) since they have apparently learned how to disengage to a necessary degree or to create a protective frame, and our framing instructions should add little.

## Method

*Participants and Design.* Eighty three students from a western university were paid \$10 to \$15 in exchange for their participation in the experiment. The study adopted a 2 (affect measure: fear vs. happiness) by 2 (chosen exposure to horror movies: FAP vs. FAV) between-subjects design.

*Procedure and Protective Frame.* The experiment was identical to experiment 3A, however, all participants were presented with a detachment frame manipulation. In a horror movie scenario, we provided participants with cues that would continuously remind them that the main characters were “simply actors playing a role.” Two cues were provided. First, participants were exposed to the actors’ biography prior to the video, distancing them as “real people” from participants. Second, during the video, regular pictures of the two main actors (i.e., the scared person and the ghost) were placed next to the screen (see appendixes 3 and 4). To avoid participants’ potential bias towards a general evaluation of the movie *or of the actors*, they were reminded that they should focus exclusively on assessing their ongoing feelings as they watched the video rather than providing a general assessment of the film clip or of the actors’ performance (Pham et al. 2001).

## Results

*Affective Strength.* Contrary to experiment 3A and consistent with our conceptualization, there was no interaction between reported affective state and chosen exposure to horror movies on participants’ feelings ( $F(1, 79) = 1.37, p > .10$ ; see figure 8). Of particular interest, the main reason for the absence of an interaction is the relative increase in the happiness-related feelings

among FAVs. Pairwise comparisons showed that FAVs reported the same level of positive feelings ( $M = 17.4$ ) as did FAPs ( $M = 21.0$ ;  $F = (1, 79) = .21, p > .10$ ). It is also important that no changes between FAVs ( $M = 45.3$ ) and FAPs ( $M = 35.7$ ) were found when they were asked to assess their negative feelings ( $F = (1, 79) = 1.43, p > .10$ ). So the increase in happiness for those who repeatedly chose to avoid these aversive experiences did not come as a result of a significant drop in fear-related feelings.

Insert Figure 8 About Here

*Affective Pattern.* Again, the online affect scale (OAS) allowed us to continuously observe participants' affective reactions and examine the correlations. Among FAPs, the results replicated the patterns found in experiment 3A (see figure 9), and we found a positive correlation between fear and happiness-related feelings ( $r = .456, p < .001$ ). In other words, as predicted, the protective frame had no added influence for this group. However, among FAVs, the protective frame promoted a positive correlation between the two affective states, thereby reversing the negative correlation displayed in experiment 3A ( $r = .642, p < .001$ ).

Insert Figure 9 About Here

## Discussion

Experiment 3B showed that a protective frame allows those who repeatedly chose to avoid these aversive experiences to experience positive feelings when exposed to a horror movie.

We found not only a relative increase in happiness-related feelings (compared to experiment 3A) but also a non significant difference between people with approach and avoidance histories. Also, the pattern of affective reactions (i.e., happiness and fear) among FAVs switched from a negative correlation in experiment 3A to a positive correlation in experiment 3B, which provides an indication that individuals can experience pleasure when facing an apparent aversive stimulus if a protective frame (via detachment) is provided. This demonstrates that coactivation, as a statement of our ability to experience positive and negative emotions simultaneously, provides a necessary but not sufficient rationale for the enjoyment of otherwise fearful experiences. Some type of protective frame (or other form of disengagement) provides the key to understanding both who and when people will experience positive affect under these circumstances.

## **GENERAL DISCUSSION**

In this article, we assessed how (1) the intensity of negative feelings, (2) positive feelings in the aftermath, and (3) the coactivation of positive and negative feelings contribute to our understanding of people's affective reactions to what is perceived to be an apparently aversive experience. Precisely, when and how is pleasantness experienced when people choose to face apparent aversive events? In a series of 4 studies, we showed, first, that contrary to a key intensity model assumption, those who pursue such apparently aversive events, actually do experience a similar level and pattern of negative feelings as those who have deliberately avoided them. This is an important demonstration that positive affect does not merely replace negative affect because of interactions with arousal (particularly at relatively low levels). Second, we demonstrated that, contrary to the aftermath rationale, feelings of relief were stronger

among those who have avoided the experience in the past compared to those who have frequently chosen to expose themselves to such stimuli. In other words, those who have avoided the experience were able to obtain the greatest reward from it (were they able to overcome their initial aversion). Third, we provided evidence that is inconsistent with existing versions of both intensity and aftermath models. Positive and negative feelings co-occurred when people are exposed to the aversive stimuli (e.g., a horror movie). Importantly, we presented evidence that such co-occurrence can appear in the shape of a positive correlation between feelings of opposite valence (e.g., fear and happiness) during the exposure to the event. Moreover, a subject-by-subject correlational analysis in experiment 2 showed a positive (negative) correlation among approach-oriented (avoidance-oriented) consumers, suggesting parallel movements in positive and negative emotional responses (i.e., coactivation as a mode of response) rather than mere alternation of positive and negative responses for FAPs. However, as the correlations differed from one another but did not differ from zero, future research is required before evidence of mode of coactivation can be claimed.

Finally, we demonstrated the importance of being in a protective frame. When individuals who typically choose to avoid the stimuli were embedded in a protective frame of mind, such that there was sufficient psychological disengagement or detachment, they experienced positive feelings while still experiencing fearfulness. Research on coactivation has shown that mixed feelings usually produce ambivalence and, consequently, psychological discomfort. So confirmation of coactivation assumptions sheds little light on why individuals would pursue mixed feelings in the first place (e.g., watch comedy-drama genres as in Larsen et al. 2001; or watch horror movie as in our research). Personality traits may provide part of the answer. People vary in their propensity to accept duality, which can mitigate the discomfort

associated with coactivation (Williams and Aaker 2002). Within the counter-hedonic behavior context, it is possible that being embedded in a protective frame can help people avoid the discomfort that emerges when mixed feelings are experienced. In a recent working paper, Hemenover and Schimmack (2004) provided a similar rationale to understand mixed feelings of disgust and amusement. The authors manipulated detachment by asking participants to watch a film clip and adopt the perspective either of the protagonist or of an outsider observer. Similar to ours, the results confirmed that mixed feelings were more likely in the detachment manipulation condition.

### **MOVING TOWARD AN INTEGRATIVE APPROACH**

We have shown that if coactivation is adopted as a basic theoretical assumption and the protective frame is represented as a necessary moderating variable, this facilitates our understanding of people's affective reactions to apparent aversive experiences. However, once untenable assumptions are removed from the intensity and aftermath models each has something to contribute in explaining counter-hedonic behavior. For instance, affect intensity may well vary as a result of adaptation (Roth et al. 1996). Especially for intense affective events (e.g., extreme sports), frequency of exposure may mitigate the perceived "aversiveness" of the event. Although it would not explain why people approach these events, a lower level of experienced negativity could allow individuals to perceive themselves within the protective frame. When the event is too intense, people are likely to see themselves outside the protective frame, and positive affect would probably not be experienced along with negative affect. Assessing people's affective changes and coactive reactions as a result of intensity levels and variations in typical and

intervention-based protective frames would shed considerable light on how people can adapt to aversive stimuli and situations, some of which are unavoidably linked to barriers that need to be overcome. In the same vein, coactivation and protective frames do not invalidate potential benefits of relief. For instance, for extreme and short-lived events (e.g., bungee jumping), the aftermath consequences may still be significant among experienced consumers. Two processes may work in parallel: as novices gain experience the protective frame may reduce avoidance forces while aftermath models contribute to approach forces. As a result, coactivation becomes likely, and pleasantness can be experienced during *and* after the event (e.g., parachute jumping, Solomon 1980). Finally, our focus has been on short-term activity-driven affective experiences. Achieving long-term goals and value-driven behavior are also part of the explanation for people's willingness to experience fear, failure, and pain. Not only may individual activities be instrumental in that sense, experiencing and tolerating negative affect probably contribute to important and desirable traits. Though a meaningful discussion of such motivational processes is beyond the scope of this article, recent speculation by Loewenstein (1999) on the reasons why people practice mountaineering—an extreme sport known to trigger fear along with basic biological affects such as pain, cold, thirst, and hunger—may be of interest (e.g., self-signaling).

### **LIMITATIONS AND FUTURE RESEARCH**

The current research does not directly address how the interaction between positive and negative affect comes about. That is, why are individuals willing to consume negative along with positive feelings instead of exposing themselves to sources positive affect only? We offer two speculations. One possibility is that negative affect represents a reliable source of arousal, which

can be continuously converted into positive affect as long as people place themselves within a given protective frame. In that case, negative affect would represent a potential contributor to positivity. To examine this issue, we conducted exploratory analyses of the correlations. Per one of our reviewers' suggestions, we used the data from experiment 2 to investigate the extent to which correlations between fear at time  $t$  and happiness at time  $t+1$  were significantly higher than correlations between fear and happiness at time  $t$ . The results did not yield any significant differences. Note, however, that the continuous data from this experiment were gathered every three seconds, a potentially long period in terms of "conversion effects." Future research could certainly investigate this underlying process by using a more fine-grained data collection procedure and analysis. A second possibility is that coactivation and a certain level of uncertainty within a protective frame provides individuals with an overall—and in hindsight—more pleasurable experience than, for instance, a pure and predictable positive experience. Thus, the immediate gratification from coactively-experienced negative and positive affect may significantly enhance enjoyment. In other words, experiencing mixed feelings within a protective frame may well be more fun! This claim converges with some earlier psychological theories which held that moderate levels of uncertainty and curiosity, and consequently a certain level of aversiveness, can actually be fulfilling, hence people's willingness to deliberately pursue them (Hebb 1955). Further research could address these hypotheses.

Demand characteristics associated with the task represent a major concern for any research on affect that requires participants to continuously report feeling states. For instance, it is possible that consumers who had repeatedly chosen to expose themselves to levels of fear in horror movies provided higher levels of positive affect than those who avoided such movies, at least in part, in an attempt justify their preferences. We tried to minimize these effects, first, by

addressing not only levels but also patterns of feelings. It is not clear why that demand artifacts would necessarily lead to positive correlations between fear and happiness. Second, the last experiment tried to tackle the demand artifact problem by only including those who had chosen to avoid horror movies (FAVs). Showing that the protective frame not only increased positive affect but also reversed the correlation from negative to positive among such “avoiders,” reduces the concern that positive coactivation might somehow be confined to those who had repeatedly chosen exposure to horror movies

An alternative view is that the protective frame manipulation in experiment 3B changed the stimulus itself rather than its interpretation. To tackle this concern, one possibility, as pointed out by the associate editor, would be to take novices with and without a protective frame through a training phase (i.e., watch several horror movies) and then present them all with the target horror movie where no protective frame is provided. That would eliminate the interpretation concern, as the target stimulus remains the same across conditions. Also, to minimize general demand artifacts, non-subjective measures of feelings could be incorporated. Tape recording of facial expressions represents a possibility for consumer researchers, although coding of mixed feelings would certainly be a challenge. Another option is to use direct physiological measures of brain activity such as fMRI and EEG. However, such techniques have their own set of limitations. First, the mapping of the emotional brain is still far from conclusive (Phan et al. 2002). Moreover, measures of brain activity usually require much simpler forms of stimuli (e.g., pictures), which makes it harder to assess more complex experiences (e.g., movies).

Finally, this article focused on one particular source of aversiveness (horror movies) and type of negative emotional experience (fear). There is no theoretical reason to believe that other types of arousing emotional experiences would play by completely different rules. Hemenover

and Schimmack (2004) adopted a similar rationale to show the presence the mixed feelings of disgust and amusement as a result of video exposure. However, we recognize that future research is required to further investigate the impact of emotion specificity on coactivation. Also, sources of negativity other than movies could be explored including, for instance, the consumption of high-risk experiences, such as skydiving (Celsi, Rose, and Leigh 1993).

In short, we believe these studies advance our understanding of the consumption of negative feelings by providing evidence of coactivation of negative and positive feelings and the importance of a protective frame as a critical moderating variable as well as by further refining the two prevailing theoretical positions in this domain. The approach and avoidance decisions people make when confronting contexts that are likely to generate negative affect are quite significant (and some may be key stepping stones to reaching important longer-term goals). We need to learn much more about both the conditions favoring and hindering such behaviors and about how subsequent emotional responses (and how they might be modified) affect continuing goal pursuit.

APPENDIX 1

ONLINE AFFECT GRID (EXPERIMENT 2)

*Genre: Horror*  
*Salem's Lot*



Continuously indicate your feelings while you watch this clip

Extremely	100				
Quite a bit	75				
Moderately	50				
A little	25				
Not at all	0				

HAPPY/JOYFUL/GLAD  
0

click here when clips are over

Not at all 25 50 75 100  
A little Moderately Quite a bit Extremely  
AFRAID/SCARED/ALARMED  
0

## APPENDIX 2

## ONLINE AFFECT SCALE (EXPERIMENTS 3A AND 3B)

click here after the film clip is over

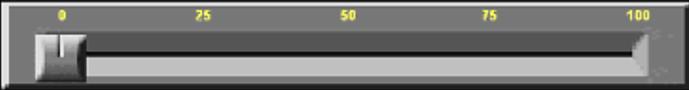
*Genre: Horror*  
*Title: Salem's Lot*



Continuously indicate how afraid, scared, and/or alarmed you feel while you watch this clip.

Not at all      A little      Moderately      Quite a bit      Extremely

0      25      50      75      100



0

APPENDIX 3

DETACHMENT MANIPULATION - SCREEN 1 (EXPERIMENT 3B)

Salem's Lot Cast and Filmography

In the next page you will be watching a clip of Salem's Lot, starring Emmy-award winner Andre Braugher, as Matt, and the young Christopher Morris, as Mike.

Andre Braugher



Andre Braugher has been able to cross over from television to film to theatre with ease. Perhaps best known for his riveting Emmy-winning portrayal of Detective Frank Pembleton on the NBC series *Homicide: Life on the Street*, Braugher has also starred on acclaimed movies like "Duets" (below).

Christopher Morris



Chris Morris is still a "debutant", but you may have seen him in the one of the episodes of the "The Lost World", playing "Ty". He recently played "Joey" in the acclaimed Australian series "Fireflies" (below).



APPENDIX 4

DETACHMENT MANIPULATION – SCREEN 2 (EXPERIMENT 3B)

click here after the film clip is over

*Genre: Horror*  
*Title: Salem's Lot*

Andre Braugher  
(Matt)



Christopher Morris  
(Mike)



Continuously indicate how happy, joyful, and/or glad you feel while you watch this clip.

Not at all      A little      Moderately      Quite a bit      Extremely

0      25      50      75      100



0

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**FIGURE 1.**

AFFECTIVE CHANGES AMONG FAV CONSUMERS (EXPERIMENT 1)

**FIGURE 2.**

AFFECTIVE CHANGES AMONG FAP CONSUMERS (EXPERIMENT 2)

**FIGURE 3.**

FEAR-RELATED FEELINGS WITH THE ONLINE AFFECT GRID (EXPERIMENT 2)

**FIGURE 4.**

HAPPINESS-RELATED FEELINGS WITH THE ONLINE AFFECT GRID (EXPERIMENT 2)

**FIGURE 5.**

WITHIN-SUBJECTS ONLINE AFFECT FOR FAV AND FAP CONSUMERS DURING  
HORROR MOVIE EXPOSURE (EXPERIMENT 2)

FAVs:  $r_{(\text{Fear} \times \text{Happiness})} = -.603, p < .001, (2\text{-tailed})$

FAPs:  $r_{(\text{Fear} \times \text{Happiness})} = .362, p < .001, (2\text{-tailed})$

**FIGURE 6.**

AVERAGED AFFECTIVE STATES FOR FAV AND FAP CONSUMERS DURING HORROR  
MOVIE EXPOSURE (EXPERIMENT 3A)

**FIGURE 7.**

ONLINE AFFECT FOR FAV AND FAP CONSUMERS DURING HORROR MOVIE  
EXPOSURE (EXPERIMENT 3A)

FAVs:  $r_{(\text{Fear} \times \text{Happiness})} = -.472, p < .001, (2\text{-tailed})$

FAPs:  $r_{(\text{Fear} \times \text{Happiness})} = .890, p < .001, (2\text{-tailed})$

**FIGURE 8.**

AVERAGED AFFECTIVE STATES FOR FAV AND FAP CONSUMERS DURING HORROR  
MOVIE EXPOSURE WITHIN A PROTECTIVE FRAME (EXPERIMENT 3B)

**FIGURE 9.**

ONLINE AFFECT FOR FAV AND FAP CONSUMERS DURING HORROR MOVIE

EXPOSURE WITHIN A PROTECTIVE FRAME (EXPERIMENT 3B)

FAVs:  $r_{(\text{Fear} \times \text{Happiness})} = .456, p < .001, (2\text{-tailed})$

FAPs:  $r_{(\text{Fear} \times \text{Happiness})} = .642, p < .001, (2\text{-tailed})$

## FIGURES

FIGURE 1. AFFECTIVE CHANGES AMONG FAV CONSUMERS (EXPERIMENT 1)

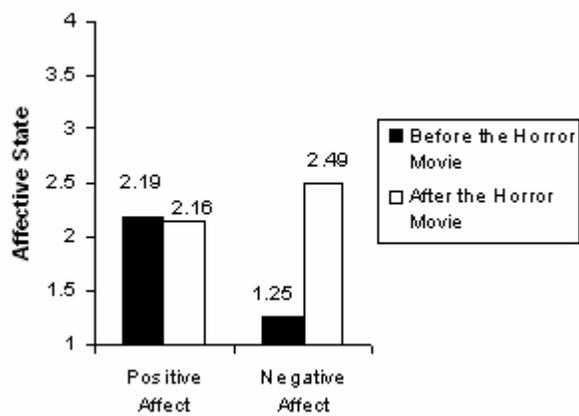


FIGURE 2. AFFECTIVE CHANGES AMONG FAP CONSUMERS (EXPERIMENT 2)

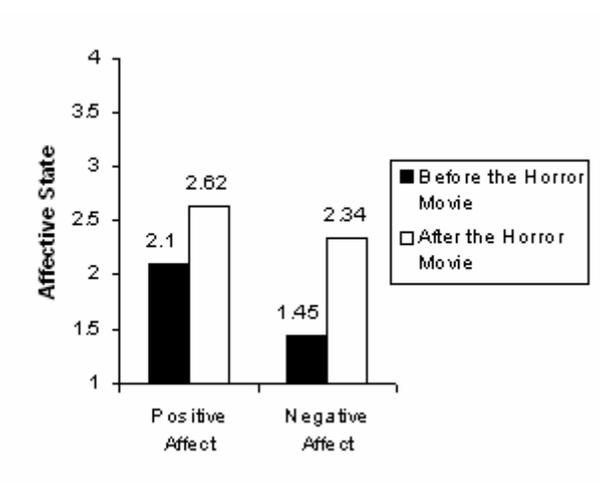


FIGURE 3. FEAR-RELATED FEELINGS WITH THE ONLINE AFFECT GRID  
(EXPERIMENT 2)

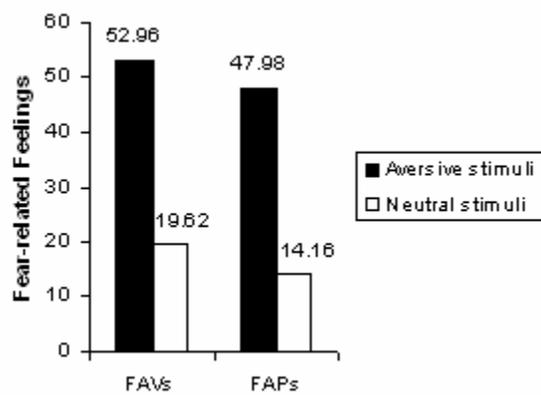


FIGURE 4. HAPPINESS-RELATED FEELINGS WITH THE ONLINE AFFECT GRID  
(EXPERIMENT 2)

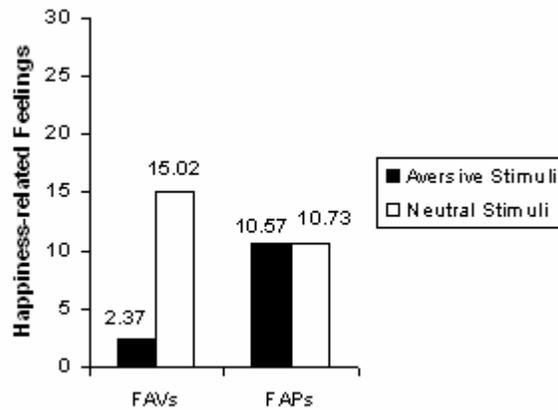
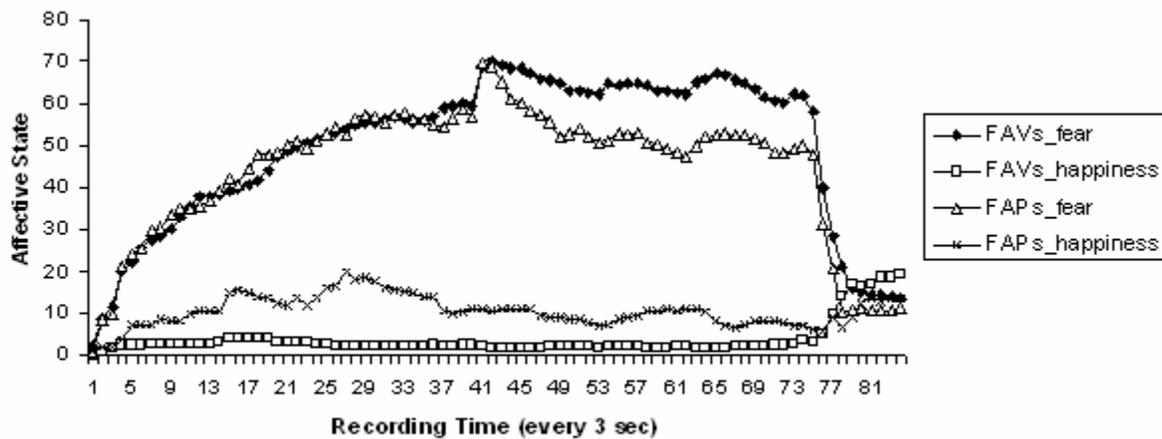


FIGURE 5. WITHIN-SUBJECTS ONLINE AFFECT FOR FAV AND FAP CONSUMERS  
DURING HORROR MOVIE EXPOSURE (EXPERIMENT 2)



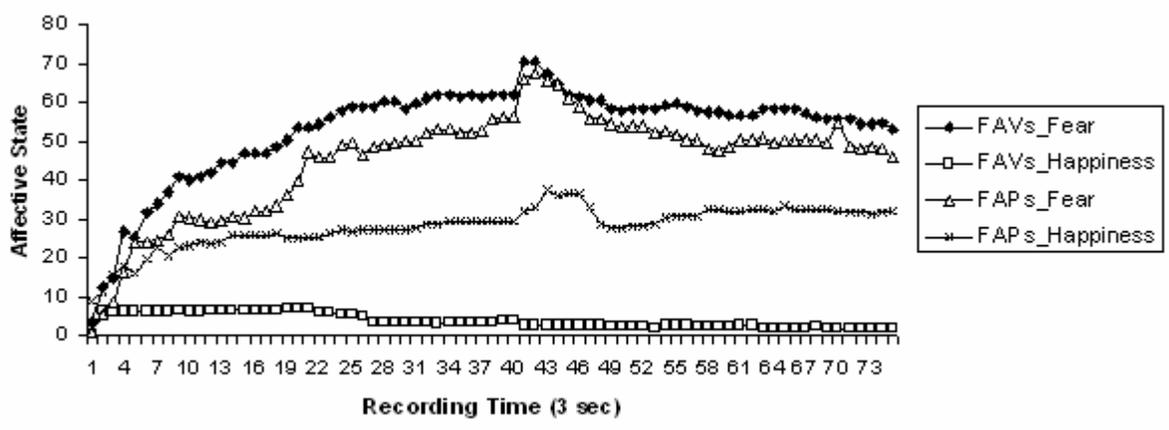
FAVs:  $r_{(\text{Fear} \times \text{Happiness})} = -.603, p < .001, (2\text{-tailed})$

FAPs:  $r_{(\text{Fear} \times \text{Happiness})} = .362, p < .001, (2\text{-tailed})$

FIGURE 6. AVERAGED AFFECTIVE STATES FOR FAV AND FAP CONSUMERS  
DURING HORROR MOVIE EXPOSURE (EXPERIMENT 3A)



FIGURE 7. ONLINE AFFECT FOR FAV AND FAP CONSUMERS DURING HORROR  
MOVIE EXPOSURE (EXPERIMENT 3A)



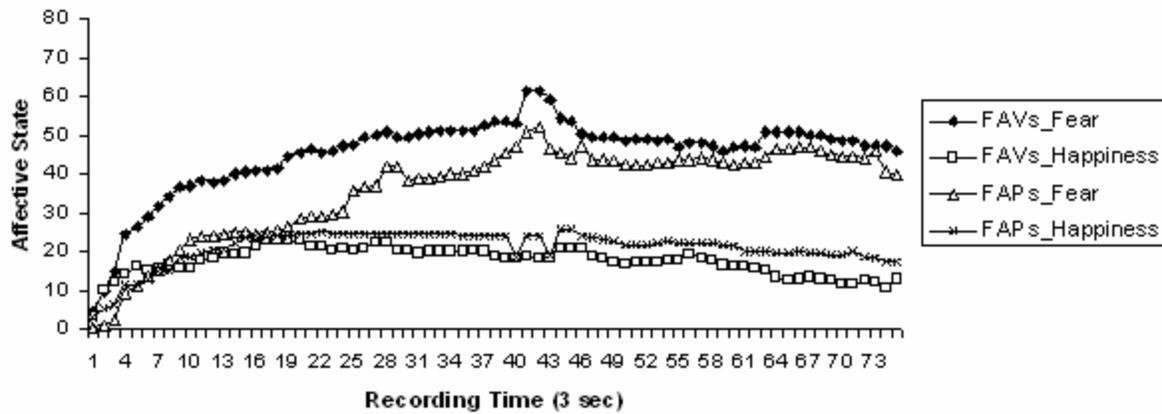
FAVs:  $r_{(\text{Fear} \times \text{Happiness})} = -.472, p < .001, (2\text{-tailed})$   
FAPs:  $r_{(\text{Fear} \times \text{Happiness})} = .890, p < .001, (2\text{-tailed})$

FIGURE 8. AVERAGED AFFECTIVE STATES FOR FAV AND FAP CONSUMERS  
DURING HORROR MOVIE EXPOSURE WITHIN A PROTECTIVE FRAME

(EXPERIMENT 3B)



FIGURE 9. ONLINE AFFECT FOR FAV AND FAP CONSUMERS DURING HORROR  
 MOVIE EXPOSURE WITHIN A PROTECTIVE FRAME (EXPERIMENT 3B)



FAVs:  $r_{(\text{Fear} \times \text{Happiness})} = .456, p < .001, (2\text{-tailed})$

FAPs:  $r_{(\text{Fear} \times \text{Happiness})} = .642, p < .001, (2\text{-tailed})$