

Gender Difference in Emotional Reactions to Media: Examining Self-Report During Bittersweet

Video Clips

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### Abstract

Previous research supports the notion that women experience more intense levels of emotion than men, both in an overall context and with regard to specific emotions like sadness or affection. However, many studies use a recall-based report of emotional experience, which has been shown to be less accurate than momentary report. Undergraduate students continuously reported their moment-to-moment levels of positive and negative emotion while watching bittersweet film clips from *Titanic*, *Up*, and *Life is Beautiful*. While women were expected to report more intense emotion during all three of the clips, only reports from *Titanic* showed this result, while ratings from *Up* had no gender effect. Furthermore, an analysis of ratings of mixed emotion from *Life is Beautiful* suggests that women actually experienced less intense emotion than men. The discussion turns to the content of the films, and proposes that the gender of the protagonists and the nature of the interpersonal relationships in the films may affect participants' emotional experience. Despite the validity of such speculations, the results make clear that women are not always the more emotional gender.

*Keywords:* gender, emotion, media, self-report

## Gender Difference in Emotional Reactions to Media: Examining Self-Report During Bittersweet Video Clips

Research supports the lay theory that women experience more intense emotion than men. While this holds true with some inconsistency, depending on the specific emotions and the context in which they are experienced, a trend emerges that women's experience of emotion is greater with regard to both positive and negative emotions (Allen & Haccoun, 1976; Brody & Hall, 2008). For instance, women reported experiencing sadness with more frequency than men did when asked to recall their emotional experiences during the previous week (Simon & Nath, 2004). When viewing sad films, women's physiological arousal, measured by heart rate and skin conductance, was greater than men's, indicating a more intense subconscious reaction to the film (Fernández, et al., 2012). One analysis that examined reports from 37 countries found that women reported having recently experienced a greater intensity of emotions of powerlessness like sadness and fear, independent of their levels of status within their culture (Fischer, Mosquera, van Vianen, 2004). Furthermore, women were more likely to report having felt more intense positive emotions such as affection and joy when recalling them in a context involving interpersonal relationships, as compared to reports by men (Buntaine & Costenbader, 1997, as cited by Brody & Hall, 2008). In light of this evidence, one would expect women to report feeling more intense levels of emotion in most situations.

However, all of the aforementioned studies share the assumption that recalling past experiences of emotion accurately captures people's levels of emotionality. A study by Barrett, Robin, Pietromonaco, and Eyssell (1998) found evidence that this may not be the case. When participants provided general descriptions of their emotional characteristics, women summarized their emotional selves in more intense ways than men did. Yet a record kept over the course of a

week and updated immediately after any social interaction showed no gender difference between the same men and women. Barrett, et al.'s (1998) study shows that women perceive themselves as more emotional than men, but their momentary descriptions of current emotions tell a different story. Ratings of emotion from retrospective recall or physiological response do not speak to the online, lived experience of the emotion as it occurs. On the other hand, in-the-moment reports are less biased by social and cultural beliefs and more accurately attest to how a person actually feels (Barrett et. al, 1998; LaFrance & Banaji, 1992). For this reason, this study utilizes a moment-by-moment measure of experienced emotion within the context of an evocative situation. To evoke this emotion, researchers turn to film.

Since emotions are so subjective, it is imperative that researchers are able to elicit them effectively and reliably with their participants. In the lab setting, film clips have successfully elicited a wide variety of specific emotions like anger, fear, amusement, contentment, sadness, and disgust, among others (Fernández, et al., 2012; Gross & Levenson, 1995; Rottenberg, Ray & Gross, 2007). With careful attention to the clip, a participant will genuinely feel the intended emotion, or multiple emotions. Evidence for mixed emotion appears in Larsen, McGraw, and Cacioppo (2001), which found that happiness and sadness can co-occur. In their study, significantly more participants reported feeling both happy and sad after watching a bittersweet film than before watching, and similar results were found when surveying those who had just graduated college and those who were moving out of their dorms. Additionally, happiness and sadness are more likely to coexist in bittersweet situations, both when participants are reporting their emotions continuously and in brief intervals (Larsen & Green, 2013; Larsen & McGraw, 2011). This study utilizes bittersweet film clips that elicit both positive and negative emotions

simultaneously, thus enabling us to observe gender differences in positive or negative affect respectively, as well as overall emotion and levels of mixed emotion.

## **Method**

### **Participants**

Eighty undergraduate participants (30 male, 50 female) from the University of Tennessee, Knoxville signed up through an online research participation system in order to receive partial course credit. Their ages ranged from 17-33, with a mean of 19.6. One male subject was partially excluded from the data analyses because of computer error during data collection.

### **Stimuli**

Participants watched four movie clips meant to evoke both positive and negative emotions. They first watched a 252-second clip from *Life is Beautiful*, an Italian movie about a family that gets imprisoned in a German concentration camp during World War II. In the clip, a father and son arrive at the barracks in the concentration camp, and the father tells jokes to convince his son that it is all an elaborate game. The Italian dialogue was dubbed into English. They then watched a 228-second clip from *Titanic* that starts in the present day as an elderly woman reminisces about her life, then flashes back to a reverie of her falling in love as a young woman onboard the ship. Third, a 199-second clip from *Up* showed a man entering his disheveled house, then going through his wife's scrapbook and reminiscing about their lives together shortly after her death. Participants also watched a 199-second clip from *Trainspotting*, a film about heroin addicts in Scotland, but data from that clip were not used in this analysis since the scene was intended to evoke specific the emotions of disgust and humor.

### **Procedure**

All participants gave consent before beginning any procedures. As part of a separate

analysis, skin conductance and heart rate sensors were attached to the participants' non-dominant hands. They completed a task about attitudes toward brands, then a 60-second baseline recording. For the present study's task, participants sat at a table and watched the clips on a computer monitor and wore over-the-ear headphones. A discreet camera built into the monitor collected data for facial expression analysis as part of the larger study. Participants were told that they were not being filmed, and the experimenters sat behind a partition when the participants watched the baseline and the movie clips. An additional 5-second baseline preceded each clip, and after viewing, participants were asked if they had seen the movie before. They then watched ten commercials, and were also asked to complete several personality questionnaires, all as part of the larger study.

A funnel debriefing followed so that the experimenters could discern whether or not participants had any valid suspicions about the study or the deception used. They began by asking if anything seemed odd, if there seemed to be more than meets the eye, or if the experimenters did not seem up-front about everything. Experimenters questioned further if the participant seemed to have more information to disclose. Once the experimenter explained the real purpose of the study, they told the participant that there was one last thing about recording that they did not yet know, and asked if they had any ideas as to what it might be. The experimenter monitored the participant's reaction when revealing that they had been recorded on video, and carefully explained the purpose for the deception. After the full debriefing, participants gave written consent to have their video fed through a computer program, rated by research assistants, shown in a classroom or professional conference, used in future projects where it would be rated, and/or used in other studies not related to the current one. Participants then left the study.

### **Continuous Evaluative Space Grid**

During the entirety of the clip, participants recorded the changes in their emotions by moving the mouse around a grid displayed on the bottom half of the screen below the video. The grid, developed by Larsen, Norris, McGraw, Hawkley, and Cacioppo (2009), provided a single-item measure of the moment-to-moment ratings of participants' positivity and negativity simultaneously. The x-axis measured how positive the participants felt, from "not at all" to "extremely." The y-axis measured how negative the participants felt, and was labeled the same. Placing the mouse at the vertex of the two axes indicated that they felt no positive or negative emotions, only neutral. Moving along the bottom or left edge of the grid indicated feeling exclusively positive or negative.

## **Results**

### **Analysis**

Visual inspection of mean ratings over time revealed that the levels of reported affect changed at distinct points about midway through each clip, and a review of the clips indicated that this change corresponds to changes in the clips' themes. The content of the second part of each clip differed from the first part to such a degree that it evoked a distinctly different pattern of emotions. Participants essentially viewed two different scenes within each clip. Therefore, each clip was split into 2 scenes to account for this variance, and submitted mean emotion ratings aggregated over the duration of each scene to a 2 (gender: male, female)  $\times$  2 (scene: first, second)  $\times$  2 (valence: positive, negative) ANOVA.

### **Overall Emotional Intensity**

The results only partially confirmed our expectations. As predicted, ratings collected during *Titanic* revealed a main effect of gender such that women experienced more intense

emotion ( $M = 0.36$ ) than men did ( $M = 0.28$ ),  $F(1, 78) = 5.82$ ,  $p = 0.02$ . There was no gender  $\times$  valence interaction ( $p = .19$ ) accompanying this finding, which indicates that women experienced more intense positive and negative emotions than men, not more positivity than negativity, or vice versa. Figure 1 illustrates this gender difference, as well as the ratings collected during *Up* and *Life is Beautiful*, which revealed no main effects of gender or interactions involving gender (all  $ps > 0.12$ ).

### **Positive, Negative, and Mixed Emotions**

However, as Figure 2 shows, an exploratory gender  $\times$  scene ANOVA on positive affect ratings collected during *Life Is Beautiful* indicated that women actually experienced less intense positive emotions ( $M = 0.25$ ) over the course of that clip than men did ( $M = 0.34$ ),  $F(1, 78) = 5.28$ ,  $p = 0.02$ . In contrast, this ANOVA also showed that women experienced more intense positive emotion ( $M = 0.49$ ) than men did ( $M = 0.37$ ) during *Titanic*,  $F(1, 78) = 6.27$ ,  $p = 0.10$ . Moreover, follow-up t-tests of measures of mixed emotions showed that men experienced more mixed emotions ( $M = 0.16$ ) than women did ( $M = 0.10$ ) during *Life is Beautiful*,  $F(1, 78) = 4.84$ ,  $p = 0.03$ . These levels of mixed emotion were computed by taking the smaller of the co-occurring positive and negative affect ratings at each moment in time (Shimmack, 2001). With the grid that the participants used, the x-axis measured ratings of negative affect, and the y-axis measured ratings of positive affect. The further away from the edges and into the grid that the participants moved, the more mixed emotion they felt. In calculating this, if negative affect was at the maximum value of 1 and if positive affect was 0, the resulting mixed-emotion score would be 0. In another example, if positive affect was 0.8 and negative affect was 0.2, the score of mixed emotion would be 0.2 for that point in time. Mean scores for each point in time were obtained by averaging across all participants of each gender, and the overall score of mixed

emotion for each clip were calculated by averaging across all points in time. Thus we can compare levels of mixed emotion for each gender and each scene.

### **Discussion**

The results show that women reported more intense emotion, possibly positive emotion specifically, only during *Titanic*, and some evidence indicated that they reported less intense emotion during *Life Is Beautiful*. This only partially replicates the findings of Barrett et al. (1998), which concluded that women do not experience more intense emotion than men when reporting momentary affect. The current study differs from Barrett et al. (1998) in that it took place in a laboratory setting, whereas their data came from entries in the real world. Even though films have been shown to effectively evoke emotion in the lab, this constitutes a different experience than emotions that occur in response to everyday events. In the lab, emotions occur in response to isolated stimuli selected by the researcher, though in the real world they happen as a result of multiple factors beyond a person's control. Inducing emotion rather than observing lived experience may have led to the different results. However, Barrett et al. (1998) were not able to measure participant's ratings of emotion as the emotions occurred, but rather relied on participants to consistently record their experiences immediately after the fact. Their study sacrificed the ability to monitor the accuracy of the participants' reports, whereas this study measured emotions that may differ from those evoked in everyday life. These limitations aside, we speculate as to what else may have produced these results, as well as what they tell us about gender difference in emotion.

One possibility is that differences in the films' content produced different gender effects. All three clips involve interpersonal relationships, but those relationships are portrayed in distinct ways through different plotlines. As previously noted, women experience more positive

emotion in response to themes involving positive interpersonal relationships (Buntaine & Costenbader, 1997, as cited by Brody & Hall, 2008). Additionally, men and women alike experience more intense emotion when they can identify with the protagonist (Cohen, 2001). Together, these facts may account for the results that were obtained.

The differences in the way that interpersonal relationships are portrayed, as well as the gender of the protagonist, could have influenced the intensity of emotion that each gender feels toward the individual clips. For instance, the *Titanic* clip shows a woman reminiscing fondly about a close romantic relationship from the past. One would expect women to report more intense emotions than men because they react to the positive relationship and do so with more intensity because the protagonist is also female. In comparison, the protagonist in *Up* also reminisces about a past marriage in a positive light, but that protagonist is male. Though the focus on interpersonal romantic relationships in both of these clips may have led women to report more intense emotions, the fact that the protagonist was a man may have limited the intensity of women's emotions during *Up*. Thus, these separate effects may have cancelled one another out, whereas they result in a gender difference in reported emotion during the *Titanic* clip. The *Life Is Beautiful* clip further credits this line of reasoning, as it features a male protagonist attempting to make light of his family's imprisonment. Since the clip involved threats to interpersonal relationships, women may have found it less humorous than men did, in addition to being less able to relate to the protagonist and internalize the situation. Regardless of the validity of such post hoc speculation about the source of our gender differences, these results make clear that women are not always more emotional than men.

Our assumptions about emotion stem from our lived experiences day by day. However, what we believe to be true may not be totally accurate, as this study goes to show. When

considering emotion and gender in a broad context, men and women alike are quick to identify women as experiencing more intense emotion. But the actual experience of emoting may not be so different between both genders. Evidence from this study, in comparison to prior research, suggests that the content of the stimuli, how the emotions are reported, and where the emotions are experienced all play a role in our conceptions and misconceptions about the everyday emotions of men and women.

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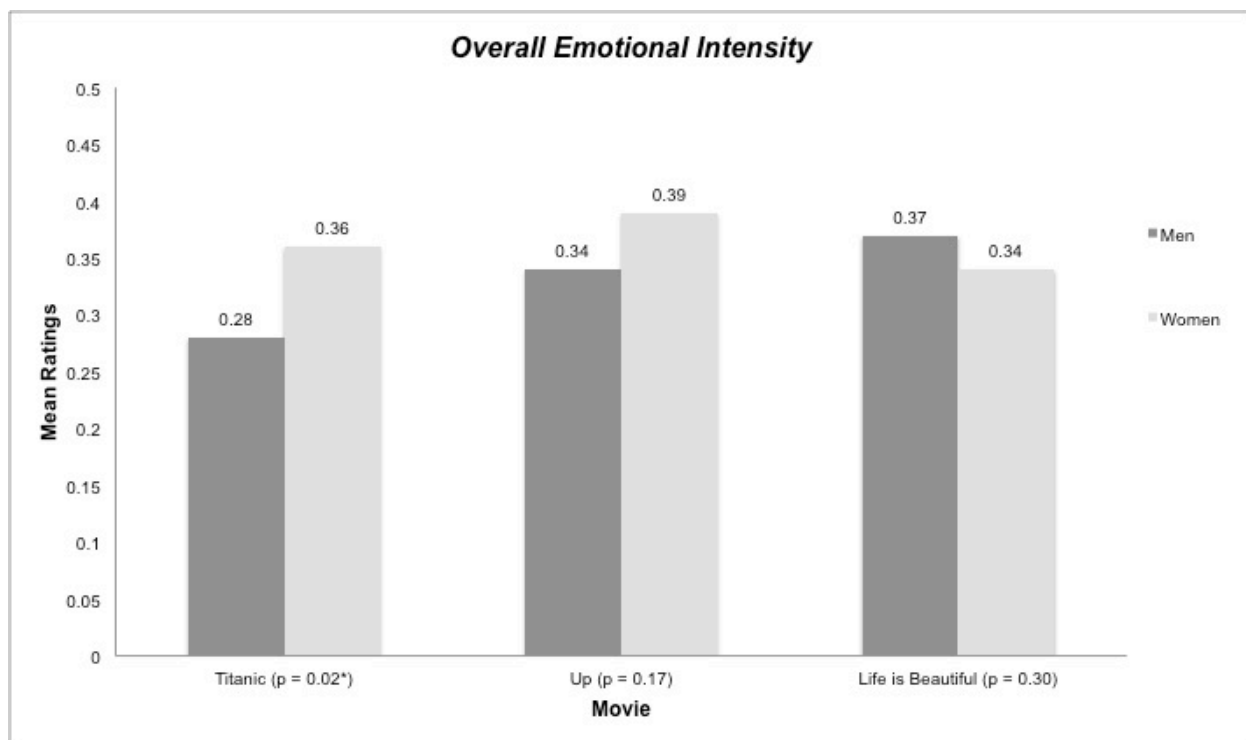


Figure 1. Mean ratings overall affect for each clip.

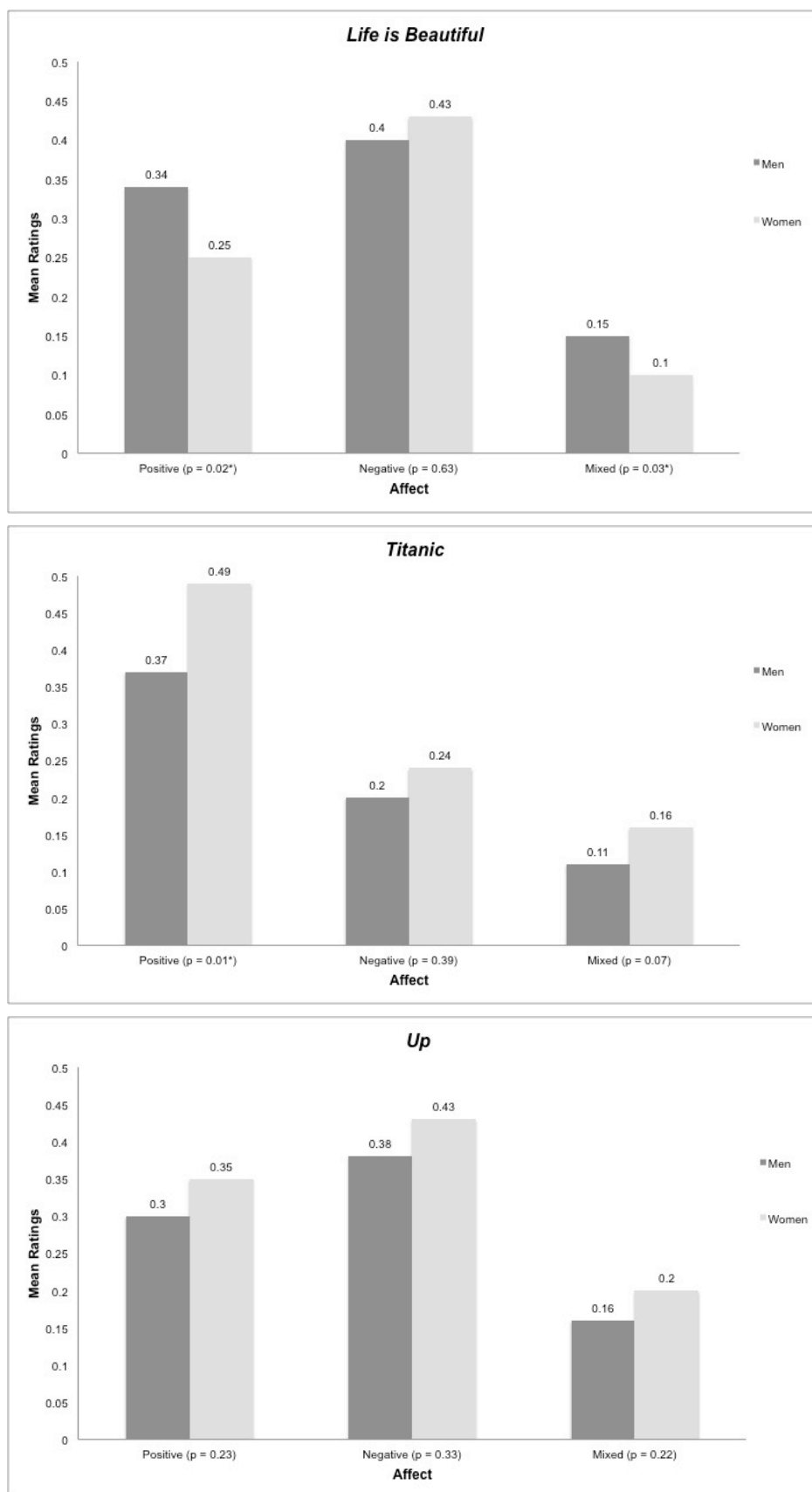


Figure 2. Mean ratings of positive and negative affect separated by gender for each clip.