

Color associations to emotion and emotion-laden words: A collection of norms for stimulus construction and selection

Tina M. Sutton¹ · Jeanette Altarriba²

Published online: 19 May 2015
© Psychonomic Society, Inc. 2015

Abstract Color has the ability to influence a variety of human behaviors, such as object recognition, the identification of facial expressions, and the ability to categorize stimuli as positive or negative. Researchers have started to examine the relationship between emotional words and colors, and the findings have revealed that brightness is often associated with positive emotional words and darkness with negative emotional words (e.g., Meier, Robinson, & Clore, *Psychological Science*, 15, 82–87, 2004). In addition, words such as *anger* and *failure* seem to be inherently associated with the color red (e.g., Kuhbandner & Pekrun). The purpose of the present study was to construct norms for positive and negative emotion and emotion-laden words and their color associations. Participants were asked to provide the first color that came to mind for a set of 160 emotional items. The results revealed that the color RED was most commonly associated with negative emotion and emotion-laden words, whereas YELLOW and WHITE were associated with positive emotion and emotion-laden words, respectively. The present work provides researchers with a large database to aid in stimulus construction and selection.

Keywords Emotion words · Emotion-laden words · Color associations

Research has indicated that individuals often associate colors with various emotional terms. For example, when participants are asked to associate an emotional response with a color, they often associate bright colors (e.g., white, pink) with positive emotions (e.g., happy, relaxed) and dark colors (e.g., black, brown) with negative emotions (anxious, sad) (Hemphill, 1996). Meier, Robinson, and Clore (2004) found that we tend to infer the valence of a stimulus (good or bad) on the basis of brightness. In a series of studies, participants were asked to decide whether a word presented was negative or positive. Half of the words were positive in valence, and the other half were negative. In addition, the words were presented in black and white. The results revealed that participants were faster to categorize the positive words when they appeared in white than when they appeared in black, and the opposite was true for the negative words. These results support the existence of an association between brightness and valence, and this association seems to automatically influence response times. Research has consistently shown that stimulus valence is processed quickly and automatically (e.g., Baddeley, 1972; Vuilleumier, 2005). The hue of a stimulus is also processed at a very early stage of perception (Gegenfurtner & Kiper, 2003). When the color of the stimulus (e.g., white) matches the valence of the stimulus (e.g., positive), individuals are able to perceive and categorize the stimulus more efficiently.

Work by Gohar (2008) has demonstrated that color is an important perceptual feature of six basic emotions: anger, disgust, fear, happiness, sadness, and surprise. Participants were asked to provide up to eight perceptual features for each of the six basic emotions. For example, participants were asked, “If ‘anger’ was an object or something tangible, palpable that you can hold in your hands, how would you describe it or what would it look like?” (Gohar, 2008, p. 79). The results revealed that color was often listed as a perceptual feature, and it was usually listed as the first or second feature in the list. The color

✉ Tina M. Sutton
tmsgsh@rit.edu

¹ Department of Psychology, Rochester Institute of Technology, Rochester, NY, USA

² Department of Psychology, University at Albany, State University of New York, Albany, NY, USA

red was most associated with anger, green with disgust, black with fear, yellow with happiness, blue with sadness, and bright with surprise. These associations may be a result of various expressions containing color terms that are used in the English language—for example, “seeing red” or “feeling blue.”

Colors are often used to signify information in our environment. For example, the color red generally conveys information regarding threat (e.g., alarms; Travis, 1991) and failure, particularly in achievement settings (e.g., the red ink used by teachers to correct mistakes; Moller, Elliot, & Maier, 2009). Recently, researchers have investigated the relationship between the color red and its ability to influence behavior. Moller et al. (2009) found that the color red is positively associated with negative words, as well as with words specific to failure. Young, Elliot, Feltman, and Ambady (2013) examined the ability of the color red to influence the identification of negative facial expressions, specifically anger and fear. Participants were asked to categorize faces displaying happiness and anger (Exp. 1) or fear and anger (Exp. 2) after viewing a fixation cross that was replaced by a red, green (Exp. 1), blue (Exp. 2), or gray background. Their results revealed that red enhanced the identification of angry faces in both Experiments 1 and 2. Red did not enhance the identification of fear, indicating that red is specific to threat and not associated with negative emotion in general.

Color has also been shown to influence the emotional memory enhancement effect: better recall and recognition of emotional than of neutral stimuli. Kuhbandner and Pekrun (2013) presented participants with 30 lists of words. Twenty-seven of those lists contained a series of 12 words, 11 appearing in black ink and one appearing in red, green, or blue ink. The remaining three lists contained 12 words, all presented in black ink. Nine of the colored words were negative in valence, nine were positive in valence, and nine were neutral. Participants were asked to study the lists and then to recall all of the words they remembered. The results revealed the standard emotional memory enhancement effect—the emotional words were recalled more often than the neutral words—and the typical von Restorff effect—memory for the colored words was better than memory for the words presented in black ink. The finding of particular interest was the Color × Emotional Valence interaction: Memory for neutral words was not influenced by color, but the color red enhanced memory for the negative words, and the color green enhanced memory for the positive words.

Sutton and Altarriba (2008) examined a subset of emotion words associated with specific colors, indicated in the University of South Florida (USF) word norm database, using the emotional Stroop task. In a series of two studies, participants completed a Stroop task, viewing color words (e.g., *green, blue*), color-related neutral words (e.g., *frog, sky*), and color-related emotion words (e.g., *envy, sad*). Each word type was presented in a congruent color and an incongruent color,

in order to examine the sizes of the Stroop effect for each of the three word types. The results revealed that the color words produced the largest Stroop interference effect, but of more interest, the color-related neutral words and color-related emotion words produced same-size Stroop interference effects. These results suggest that emotion words automatically activate color associations, and these color associations can interfere with the current task. These results are consistent with a network notion of memory (Collins & Loftus 1975), suggesting that color nodes may be linked with emotion nodes in memory.

It appears that we often associate colors with emotions, and that these associations can influence a variety of behaviors, such as response time, memory, and facial identification. The goal of the present work was to establish a set of color norms for a variety of emotional stimuli. These stimuli included both emotion words and emotion-laden words. An emotion word labels an emotional state (e.g., *happy, sad*), whereas emotion-laden words have an emotional connotation (make you feel a certain way), but do not directly label an emotional state. Research has indicated that these two types of emotional stimuli are processed differently, with emotion words often producing stronger effects in tasks such as the affective Simon task (Altarriba & Basnight-Brown, 2011; Knickerbocker & Altarriba, 2013).

The purpose of this study was to provide researchers with a set of color norms for emotional stimuli to be used in perception, language, memory, and cognition studies in paradigms such as the Stroop task, the rapid visual serial presentation (RSVP) paradigm, the attentional dot probe task, the affective Simon task, and so forth. Understanding the relationship between an emotional stimulus and other perceptual features, such as color, is important when designing studies, or investigating the representation of emotion in memory. The present work may also speak to the need to consider what color stimuli researchers use in their experimental paradigms to distinguish one stimulus from another, or one response from another: The color may actually act as a confounding variable if there is an association between the color and the stimulus or response.

Method

Participants

One hundred and seven University at Albany, State University of New York, undergraduates completed the present study for extra credit or research participation credit in their psychology course. Ninety-six of the participants were native English speakers, and all of the participants reported using English as their primary language. Most participants reported using English 100 % of the day. Two of the participants reported

being color blind, and their data were not included in the present study. Of the remaining participants, 75 were female.

Materials

Thirty-five negative emotion words, 55 negative emotion-laden words, 29 positive emotion words, and 41 positive emotion-laden words were selected from the Affective Norms for English Words (ANEW) database. ANEW is a set of English words rated for pleasure (valence), arousal, and dominance on a scale from 1 (*negative, low arousal, low dominance*) to 9 (*positive, high arousal, high dominance*). The negative words selected for the present study received pleasure ratings below 4, and the positive words received pleasure ratings above 7. The average pleasure rating for the negative emotion words was 2.52 ($SD = 0.58$), that for the negative emotion-laden words was 2.24 ($SD = 0.51$), that for the positive emotion words was 7.71 ($SD = 0.60$), and that for the positive emotion-laden words was 7.82 ($SD = 0.45$). The emotional stimuli were embedded among 234 emotionally neutral words. All of the emotional words were moderate to high in arousal, except for three of the positive emotion words (i.e., *relaxed, secure, and safe*) and one of the positive emotion-laden words (i.e., *peace*) (see Table 1).

All participants also completed a Language History Questionnaire (LHQ). The LHQ asked participants to report where they were born, how long they had been living in the United States, the number of languages they spoke, and the percentage of the day that they spent speaking each language. Participants were also asked to rate their spoken, written, and conversational proficiency in English on a scale from 1 to 10.

Procedure

Upon arrival, participants were asked to read, sign, and date the informed-consent form prior to receiving the packet containing the emotional and neutral words as well as the LHQ. Participants completed the color task first. The 390 words were randomly mixed together, and participants were asked to write down the first color that came to mind for each word in the packet. Participants were provided with the following set of directions:

For each word provided, please write down the first color that comes to mind. For example, if you see the word CLOUD, you might write “blue,” “white,” or “gray.” If you cannot think of a color, or you don’t believe a color is associated with the word provided, you may leave the space blank. If you have any questions, please ask them now.

Upon completion of the color task, participants filled out the LHQ. The entire task took 30–45 min to complete.

Table 1 Pleasure (valence) and arousal ratings from the Affective Norms for English Words for the emotional stimuli, on a scale from 1 (*pleasant, low arousal*) to 9 (*unpleasant, high arousal*)

Word Type	Word	Pleasure	Arousal
Negative emotion	Afraid	2	6.67
	Agony	2.43	6.06
	Angry	2.85	7.17
	Anguished	2.12	5.33
	Contempt	3.85	5.28
	Cruel	1.97	5.68
	Depressed	1.83	4.72
	Discouraged	3	4.53
	Disgusted	2.45	5.42
	Dreadful	2.26	5.84
	Embarrassed	3.03	5.87
	Enraged	2.46	7.97
	Fear	2.76	6.96
	Frustrated	2.48	5.61
	Guilty	2.63	6.04
	Helpless	2.2	5.34
	Hostile	2.73	6.44
	Jealousy	2.52	6.36
	Lonely	2.17	4.51
	Mad	2.44	6.76
	Misery	1.93	5.17
	Moody	3.2	4.18
	Nervous	3.29	6.59
	Panic	3.12	7.02
	Rage	2.41	8.17
	Regretful	2.28	5.74
	Sad	1.61	4.13
	Scared	2.78	6.82
	Shamed	2.5	4.88
Suspicious	3.76	6.29	
Tense	3.56	6.53	
Terrified	1.72	7.86	
Troubled	2.17	5.94	
Unhappy	1.57	4.18	
Upset	2	5.86	
Negative emotion-laden	Abduction	2.76	5.53
	Abortion	3.5	5.39
	Abuse	1.8	6.83
	Bees	3.2	6.51
	Bloody	2.9	6.41
	Burial	2.05	5.08
	Cancer	1.5	6.42
	Cemetery	2.63	4.82
	Coffin	2.56	5.03
	Corpse	2.18	4.74
	Crash	2.31	6.95
Criminal	2.93	4.79	

Table 1 (continued)

Word Type	Word	Pleasure	Arousal
	Crisis	2.74	5.44
	Danger	2.95	7.32
	Dead	1.94	5.73
	Death	1.61	4.59
	Demon	2.11	6.76
	Disaster	1.73	6.33
	Divorce	2.22	6.33
	Funeral	1.39	4.94
	Gun	3.47	7.02
	Hell	2.24	5.38
	Illness	2.48	4.71
	Infection	1.66	5.03
	Injury	2.49	5.69
	Insult	2.29	6
	Jail	1.95	5.49
	Killer	1.89	7.86
	Lie	2.79	5.96
	Massacre	2.28	5.33
	Morbid	2.87	5.06
	Nightmare	1.91	7.59
	Pain	2.13	6.5
	Poison	1.98	6.05
	Pollute	1.85	6.08
	Poverty	1.67	4.87
	Punishment	2.22	5.93
	Rape	1.25	6.81
	Robber	2.61	5.62
	Sick	1.9	4.29
	Sickness	2.25	5.61
	Slave	1.84	6.21
	Suicide	1.25	6.73
	Tomb	2.94	4.73
	Toothache	1.98	5.55
	Tomado	2.55	6.83
	Tragedy	1.78	6.24
	Trash	2.67	4.16
	Trauma	2.1	6.33
	Ugly	2.43	5.38
	Ulcer	1.78	6.12
	Unfaithful	2.05	6.2
	Victim	2.18	6.06
	Violent	2.29	6.89
	War	2.08	7.49
Positive emotion	Admired	7.74	6.11
	Affection	8.39	6.21
	Aroused	7.97	6.63
	Astonished	6.56	6.58
	Beautiful	7.6	6.17
	Brave	7.15	6.15

Table 1 (continued)

Word Type	Word	Pleasure	Arousal
	Cheer	8.1	6.12
	Confident	7.98	6.22
	Elated	7.45	6.21
	Friendly	8.43	5.11
	Grateful	7.37	4.58
	Happy	8.21	6.49
	Hopeful	7.1	5.78
	Inspired	7.15	6.02
	Joy	8.6	7.22
	Joyful	8.22	5.98
	Kind	7.59	4.46
	Love	8.72	6.44
	Lust	7.12	6.88
	Merry	7.9	5.9
	Nice	6.55	4.38
	Passion	8.03	7.26
	Proud	8.03	5.56
	Relaxed	7	2.39
	Safe	7.07	3.86
	Satisfied	7.94	4.94
	Secure	7.57	3.14
	Surprised	7.47	7.47
	Triumphant	8.82	6.78
Positive emotion-laden	Achievement	7.89	5.53
	Adorable	7.81	5.12
	Baby	8.22	5.53
	Birthday	7.84	6.68
	Bouquet	7.02	5.46
	Cash	8.37	7.37
	Champion	8.44	5.85
	Church	6.28	4.34
	Diamond	7.92	5.53
	Diploma	8	5.67
	Engaged	8	6.77
	Freedom	7.58	5.52
	Friend	7.74	5.74
	Gift	7.77	6.14
	God	8.15	5.95
	Grin	7.4	5.27
	Heaven	7.3	5.61
	Holiday	7.55	6.59
	Jewel	7	5.38
	Joke	8.1	6.74
	Kiss	8.26	7.32
	Laughter	8.45	6.75
	Lucky	8.17	6.53
	Millionaire	8.03	6.14
	Miracle	8.6	7.65
	Money	7.59	5.7

Table 1 (continued)

Word Type	Word	Pleasure	Arousal
	Outdoors	7.47	5.92
	Peace	7.72	2.95
	Pretty	7.75	6.03
	Rescue	7.7	6.53
	Riches	7.7	6.17
	Romantic	8.32	7.59
	Thrill	8.05	8.02
	Treasure	8.27	6.75
	Triumph	7.8	5.78
	Trophy	7.78	5.39
	Vacation	8.16	5.64
	Victory	8.32	6.63
	Waterfall	7.88	5.37
	Wedding	7.82	5.97
	Wish	7.09	5.16

Participants completed these tasks in a group setting, with 10–20 participants in each session.

Results

Not all participants provided a response for every word presented. Looking at the data, clear patterns emerged for the various emotional stimuli. The most common color response for the *negative emotion* words was RED (57.10 %), followed by BLUE (20 %), BLACK (14.3 %), GREEN (5.70 %), and WHITE (2.90 %). The most common color response for the *negative emotion-laden* words was also RED (42.60 %), followed closely by BLACK (38.9 %), then GRAY (5.6 %), GREEN (5.6 %), BROWN (3.7 %), YELLOW (1.9 %), AND WHITE (1.9 %). All negative words seemed to elicit the color RED as the first response given; however, not every negative word resulted in RED as the first response given (e.g., *afraid*, *depressed*). The most common color response for *positive emotion* words was YELLOW (40.0 %), followed by RED (33.3 %), BLUE (20 %), PINK (3.3 %), and WHITE (3.3 %), and the most common response for the *positive emotion-laden* words was WHITE (27.3 %), followed by RED (20.5 %), GREEN (13.6 %), BLUE (13.6 %), YELLOW (9.10 %), GOLD (9.10 %), and PINK (6.8 %) (see Table 6).

To assess reliability, the original sample was randomly divided into two subsamples (Sample A and Sample B), and the color responses for each individual word were tallied for each subsample (see Table 7). The most common responses given for the various word types (negative emotion, negative emotion-laden, positive emotion, and positive emotion-laden)

were similar for the two subsamples (see Table 7). Similar to Nelson and Schreiber (1992), we calculated the total set size (TSS) and the mean set size (MSS). TSS is the total number of different colors provided by the participants in each sample, and MSS is the total number of different color responses given by two or more participants in each sample. TSS thus includes idiosyncratic responses, but MSS does not. The TSS and MSS measures were highly correlated for all word types (see Tables 2, 3, 4, and 5 for each word type). For each of the words, the correlation between the overlapping color responses for Sample A and Sample B was correlated. The averages of these correlations were as follows: for the negative emotion words, $r = .95$ ($SD = .05$); for the negative emotion-laden words, $r = .97$ ($SD = .03$); for the positive emotion words, $r = .92$ ($SD = .07$); and for the positive emotion-laden words, $r = .93$ ($SD = .07$).

Discussion

The results of the present study indicate that negative and positive words are associated with different colors. All of the negative words (emotion and emotion-laden) elicited the response RED most often. This is consistent with previous research suggesting that red carries a negative meaning (Kuhbandner & Pekrun, 2013) and is often associated with failure (Moller et al., 2009). The association between the color red and negative words and events is most likely the result of several sources. In the English language, we often use such phrases as “seeing red” (referring to feeling angry). The color red may also be associated with failure through classical conditioning, because teachers use red ink to correct mistakes (Elliot & Maier, 2007). Elliot, Maier, Moller, Friedman, and Meinhardt (2007) found that exposure to the color red impaired participants’ performance on various achievement tests, such as anagram completion and the numerical and language-based subtests of an intelligence test.

The color BLACK was also a fairly common response to the negative words in the present study. This is consistent with research examining brightness and stimulus valence (Meier et al., 2004). Darkness is often associated with negative

Table 2 Total set size (TSS) and mean set size (MSS) for the *negative emotion words* for Sample A and Sample B

	Sample A MSS	Sample B MSS	Sample A TSS	Sample B TSS
Sample A MSS	1	.856*	.807*	.757*
Sample B MSS	.856*	1	.674*	.780*
Sample A TSS	.807*	.674*	1	.772*
Sample B TSS	.757*	.780*	.772*	1

* Correlation is significant at the .01 level (two-tailed)

Table 3 Total set size (TSS) and mean set size (MSS) for the *negative emotion-laden words* for Sample A and Sample B

	Sample A MSS	Sample B MSS	Sample A TSS	Sample B TSS
Sample A MSS	1	.783*	.834*	.747*
Sample B MSS	.783*	1	.856*	.882*
Sample A TSS	.834*	.856*	1	.841*
Sample B TSS	.747*	.882*	.841*	1

* Correlation is significant at the .01 level (two-tailed)

events, and brightness with positive events. In fact, the color black was very rarely associated with the positive emotion or positive emotion-laden words in the present study, and it was never the most common response given. The most common color response for the positive emotion words was yellow, and the most common response for the positive emotion-laden words was white.

The main goal of the present work was to provide researchers with a set of color norms to aid in stimulus construction and selection. The emotional Stroop paradigm is widely used to measure selective attention to emotional information. It is believed that the interference in this task is a result of the emotional content of the words presented (McKenna, 1986; McKenna & Sharma, 1995). The present set of norms could be used to extend the work by Sutton and Altarriba (2008), in which they examined a “true Stroop effect” for emotion words. The norms can also be used with other paradigms, such as the affective Simon task or the RSVP paradigm.

The present work also has implications for the use of colors in experimental research. Often researchers use color to differentiate a target stimulus from other stimuli. For example, Keil and Ihssen (2004) examined the attentional blink effect for emotion words. Using the RSVP paradigm, they presented a series of neutral (e.g., *to continue*), positive (e.g., *to admire*), and negative (e.g., *to destroy*) verbs on the screen. The target verbs were presented in green, and the distractor verbs were presented in white. If different colors are associated with emotional stimuli, then color might actually act as a confounding variable if it is inherently associated with a specific emotion word or class of words.

Table 4 Total set size (TSS) and mean set size (MSS) for the *positive emotion words* for Sample A and Sample B

	Sample A MSS	Sample B MSS	Sample A TSS	Sample B TSS
Sample A MSS	1	.803*	.687*	.563*
Sample B MSS	.803*	1	.712*	.746*
Sample A TSS	.687*	.712*	1	.832*
Sample B TSS	.563*	.746*	.832*	1

* Correlation is significant at the .01 level (two-tailed)

Table 5 Total set size (TSS) and mean set size (MSS) for the *positive emotion-laden words* for Sample A and Sample B

	Sample A MSS	Sample B MSS	Sample A TSS	Sample B TSS
Sample A MSS	1	.846*	.844*	.790*
Sample B MSS	.846*	1	.786*	.856*
Sample A TSS	.844*	.786*	1	.841*
Sample B TSS	.790*	.860*	.856*	1

* Correlation is significant at the .01 level (two-tailed)

Additional considerations

It is important to note that the set of color norms provided was collected predominately from native English speakers. The associations between colors and words vary across cultures. For example, Hupka, Zaleski, Otto, Reidl, and Tarabrina (1997) examined the relationships between color and the following emotion words: (1) anger, (2) envy, (3) fear, and (4) jealousy. Participants from Germany, Mexico, Poland, Russia, and the United States were asked to indicate the extent to which one of these emotions reminded them of the colors black, blue, brown, gray, green, orange, pink, purple, red, violet, white, and yellow. The colors black and red were associated with anger in all countries. In addition, black and red were also associated with fear, except in Mexico. The word *envy* was associated with different colors in the various countries. For example, it was associated with green in the United States, yellow in Germany, and purple in Poland. The color association norms presented here should only be used with native English speakers in the United States.

In the present study, participants were asked to provide the first color that came to mind for each of the words presented. The variety of color responses was quite large across participants; however, it is important to note that research conducted by Van Overschelde, Rawson, and Dunlosky (2004) suggests that some color terms are more likely to be given than others. In their research, participants were given various category labels (e.g., colors, fruits, and weapons), and asked to generate as many responses as they could within 30 s. For the “color” category, the colors blue and red were given most often as the first responses. The colors green, purple, yellow, and black were also given as first responses, but not as often. Other color words, including pink, brown, gold, and teal, were never given as first responses. It is possible that when one is asked to name a color for an object, such prototypical colors as red and blue are the first that come to mind, and reporting other colors takes more effort. In the present study, RED was the most common response for the negative words, but it was not the most common response for all of the word types. In fact, for the positive words, the most common response was YELLOW, and for the positive emotion-laden words, the most common response was WHITE.

Research from the object identification and recognition literature has shown that color perception and color knowledge are distinct cognitive processes that can be distinguished from one another at the neuroanatomical level (e.g., Bartels & Zeki, 2000; Bramão et al., 2012). The perception of surface color is a result of a bottom-up process generated by the color present in the object, whereas color knowledge is a component of the semantic information that individuals have stored about the object. In the present study, we asked participants to provide a color label for each emotional word. This represents the color knowledge that individuals had stored for emotional words, and not the perception of color. Research in this field has also indicated that color diagnosticity, the degree to which a color is representative of an object or is associated with an object, may influence how quickly an individual can correctly recognize an object in the environment (Tanaka & Presnell, 1999). For example, a banana is an object that is high in color diagnosticity (i.e., associated with the color yellow), but a car is low in diagnosticity (there are many different colors for cars).

It is possible that some of the words in the present study may have been higher in color diagnosticity than others, particularly the concrete nouns in the emotion-laden lists. To determine whether the associations between the words and colors provided in the present study were the result of color diagnosticity, we examined the associative strength values provided in the University of South Florida (USF) free association norms database (Nelson, McEvoy, & Schreiber, 1998). If a color is naturally symptomatic of a particular object, one would expect many individuals to provide this color response when presented with the object. Of our 55 negative emotion-laden words, 48 were available in the USF database. Of these 48 words, only seven were associated with any particular color. Also, the average association strength between the colors and words was low—.133, ranging from .014 to .338. The word *slave* had the highest association strength, with the color black, which was the first of 18 possible responses given by participants. Likewise, 33 of the 41 positive emotion-laden words were available in the USF database. Of these 33 words, only eight were associated with a color word. Once again, the average association strength was low—.055, ranging from .014 to .183. A color response was never the first response given for any of the positive emotion-laden words. It seems unlikely that the degree of color diagnosticity was largely responsible for the colors reported for the majority of the items in the present study.

Conclusions

Color is pervasive in our everyday lives, and it plays an integral role in many aspects of human behavior, including object recognition (Ostergaard & Davidoff, 1985; Wurm, Legge, Isenberg, & Luebker, 1993), buying decisions (Bellizzi & Hite, 1992), and communication (e.g., “once in a blue moon”). The present work

adds to the literature suggesting that colors are associated with emotions. Theories of color describe how we experience, perceive, and categorize colors in terms of hue, chroma, saturation, values of brightness/lightness, and/or purpose (e.g., the Munsell Color System; for a review, see Indow, 1988). As we have illustrated in the present work, various aspects of color, such as brightness and hue, often become associated with specific emotions or with classes of emotional stimuli.

Appendix 1

Table 6 Color associations for the negative and positive emotion and emotion-laden words

Word	Color	Freq	%
Negative Emotion			
Afraid	Black	50	50 %
	Red	27	27 %
	Blue	10	10 %
	Green	3	3 %
	Brown	2	2 %
	Gray	2	2 %
	Yellow	2	2 %
	Purple	1	1 %
	Dark blue	1	1 %
Agony	Black	49	49 %
	Red	32	32 %
	Brown	8	8 %
	Blue	4	4 %
	Gray	3	3 %
	Green	2	2 %
	Orange	1	1 %
	Silver	1	1 %
	Teal	1	1 %
Angry	Red	79	79 %
	Black	14	14 %
	Brown	2	2 %
	Blue	2	2 %
	Yellow	1	1 %
	Orange	1	1 %
	Dark gray	1	1 %
	Dusty red	1	1 %
	Anguished	Red	36
Gray		16	16 %
Blue		15	15 %
Black		13	13 %
Green		9	9 %

Table 6 (continued)

Word	Color	Freq	%	
Contempt	White	3	3 %	
	Yellow	1	1 %	
	Orange	1	1 %	
	Silver	1	1 %	
	Fire Brick	1	1 %	
	Red	25	25 %	
	Black	19	19 %	
	Blue	16	16 %	
	Green	13	13 %	
	Yellow	6	6 %	
	Pink	5	5 %	
	White	5	5 %	
	Gray	4	4 %	
	Orange	4	4 %	
	Brown	1	1 %	
Cruel	Dark Gray	1	1 %	
	Pale Green	1	1 %	
	Crimson	1	1 %	
	Red	46	46 %	
	Black	34	34 %	
	Green	6	6 %	
	Blue	4	4 %	
	Gray	4	4 %	
	Brown	2	2 %	
	White	2	2 %	
	Yellow	1	1 %	
	Purple	1	1 %	
	Dark red	1	1 %	
	Depressed	Blue	43	43 %
		Black	31	31 %
Gray		12	12 %	
Red		7	7 %	
Yellow		3	3 %	
Brown		2	2 %	
Green		1	1 %	
Midnight blue		1	1 %	
Navy		1	1 %	
Discouraged		Blue	29	29 %
		Black	25	25 %
		Red	15	15 %
		Gray	10	10 %
		Brown	9	9 %
		Yellow	5	5 %
	Green	3	3 %	
	Orange	2	2 %	

Table 6 (continued)

Word	Color	Freq	%	
Disgusted	White	1	1 %	
	Indigo	1	1 %	
	Green	25	25 %	
	Brown	21	21 %	
	Red	20	20 %	
	Black	18	18 %	
	Gray	4	4 %	
	Blue	3	3 %	
	Orange	3	3 %	
	Purple	2	2 %	
	White	1	1 %	
	Yellow	1	1 %	
	Violet	1	1 %	
	Tan	1	1 %	
	Orange/red	1	1 %	
Dreadful	Black	54	53 %	
	Red	24	24 %	
	Green	7	7 %	
	Gray	6	6 %	
	Blue	5	5 %	
	White	2	2 %	
	Brown	1	1 %	
	Dark red	1	1 %	
	Orange yellow	1	1 %	
	Embarrassed	Red	67	66 %
		Blue	8	8 %
		Green	6	6 %
		Black	5	5 %
		Yellow	4	4 %
		Pink	4	4 %
Gray		3	3 %	
Purple		2	2 %	
Brown		2	2 %	
Turquoise		1	1 %	
Enraged		Red	73	72 %
		Black	15	15 %
		Blue	4	4 %
		White	1	1 %
		Gray	1	1 %
	Yellow	1	1 %	
	Green	1	1 %	
	Purple	1	1 %	
	Orange	1	1 %	
	Gold	1	1 %	
	Silver	1	1 %	

Table 6 (continued)

Word	Color	Freq	%
Fear	Dark Red	1	1 %
	Red	50	49 %
	Black	34	33 %
	Gray	6	6 %
	Blue	5	5 %
	Green	4	4 %
	Yellow	1	1 %
	Orange	1	1 %
Frustrated	Crimson	1	1 %
	Red	52	51 %
	Black	17	17 %
	Green	10	10 %
	Gray	6	6 %
	Blue	4	4 %
	Yellow	4	4 %
	Purple	3	3 %
	Orange	3	3 %
	Brown	2	2 %
Guilty	Red	30	30 %
	Green	21	21 %
	Black	16	16 %
	Gray	12	12 %
	Blue	11	11 %
	Yellow	4	4 %
	White	2	2 %
	Brown	2	2 %
	Orange	2	2 %
	Turquoise	1	1 %
Helpless	Black	24	24 %
	Gray	17	17 %
	White	14	14 %
	Blue	13	13 %
	Yellow	8	8 %
	Red	7	7 %
	Green	5	5 %
	Brown	5	5 %
	Orange	3	3 %
	Purple	2	2 %
	Tan	1	1 %
	Coral	1	1 %
	Light gray	1	1 %
Hostile	Red	60	60 %
	Black	26	26 %
	White	3	3 %

Table 6 (continued)

Word	Color	Freq	%
Jealousy	Gray	3	3 %
	Blue	2	2 %
	Yellow	1	1 %
	Green	1	1 %
	Purple	1	1 %
	Brown	1	1 %
	Silver	1	1 %
	Dark red	1	1 %
	Green	58	58 %
	Red	22	22 %
Lonely	Blue	9	9 %
	Yellow	4	4 %
	Purple	2	2 %
	Black	2	2 %
	Pink	1	1 %
	Brown	1	1 %
	Violet	1	1 %
	Blue	47	46 %
	Black	16	16 %
	Gray	13	13 %
Mad	White	8	8 %
	Red	4	4 %
	Green	3	3 %
	Yellow	2	2 %
	Pink	2	2 %
	Purple	2	2 %
	Light blue	1	1 %
	Pale green	1	1 %
	Mahogany	1	1 %
	Blue violet	1	1 %
Misery	Blue gray	1	1 %
	Red	82	83 %
	Black	13	13 %
	Blue	1	1 %
	Brown	1	1 %
	Dark Red	1	1 %
	Scarlett	1	1 %
	Black	47	47 %
	Red	20	20 %
	Blue	11	11 %
Gray	10	10 %	
Green	6	6 %	
White	4	4 %	
Purple	1	1 %	
Brown	1	1 %	

Table 6 (continued)

Word	Color	Freq	%	
Moody	Dark Purple	1	1 %	
	Blue	22	22 %	
	Gray	17	17 %	
	Red	13	13 %	
	Black	13	13 %	
	Green	9	9 %	
	Purple	8	8 %	
	Brown	8	8 %	
	Yellow	2	2 %	
	Orange	2	2 %	
	Maroon	2	2 %	
	White	1	1 %	
	Pink	1	1 %	
	Navy	1	1 %	
	Rainbow	1	1 %	
	Indigo	1	1 %	
	Nervous	Red	22	22 %
		Green	16	16 %
Blue		15	15 %	
Yellow		14	14 %	
Gray		8	8 %	
Orange		8	8 %	
Black		5	5 %	
Brown		5	5 %	
White		4	4 %	
Silver		1	1 %	
Light green		1	1 %	
Fuschia		1	1 %	
Panic		Red	72	71 %
	Black	8	8 %	
	Blue	8	8 %	
	Yellow	4	4 %	
	White	2	2 %	
	Green	2	2 %	
	Purple	1	1 %	
	Brown	1	1 %	
	Orange	1	1 %	
	Beige	1	1 %	
	Indian red	1	1 %	
Rage	Red	89	90 %	
	Black	8	8 %	
	Pink	1	1 %	
	Green	1	1 %	
	Red	29	29 %	
Regretful	Red	29	29 %	

Table 6 (continued)

Word	Color	Freq	%
	Black	28	28 %
	Blue	16	16 %
	Green	8	8 %
	Gray	7	7 %
	Yellow	6	6 %
	Purple	3	3 %
	White	1	1 %
	Pink	1	1 %
	Brown	1	1 %
	Orange	1	1 %
Sad	Blue	61	60 %
	Black	19	19 %
	Red	7	7 %
	Gray	4	4 %
	Yellow	4	4 %
	Green	3	3 %
	Pink	1	1 %
	Purple	1	1 %
	Brown	1	1 %
	Midnight blue	1	1 %
Scared	Red	38	38 %
	Black	31	31 %
	Blue	10	10 %
	Yellow	6	6 %
	White	4	4 %
	Green	4	4 %
	Gray	3	3 %
	Orange	3	3 %
	Purple	1	1 %
	Brown	1	1 %
Shamed	Red	25	25 %
	Blue	15	15 %
	Gray	14	14 %
	Black	14	14 %
	Yellow	11	11 %
	Green	10	10 %
	Purple	2	2 %
	Brown	2	2 %
	Orange	2	2 %
	White	1	1 %
Suspicious	Pink	1	1 %
	Tan	1	1 %
	Dark gray	1	1 %
	Coffee black	1	1 %
	Red	36	36 %

Table 6 (continued)

Word	Color	Freq	%
	Green	15	15 %
	Black	14	14 %
	Gray	13	13 %
	Blue	8	8 %
	Orange	7	7 %
	Purple	3	3 %
	White	2	2 %
	Yellow	1	1 %
	Brown	1	1 %
	Dark orange	1	1 %
Tense			
	Red	42	42 %
	Black	18	18 %
	Green	9	9 %
	Gray	7	7 %
	Blue	6	6 %
	Orange	6	6 %
	Brown	4	4 %
	White	3	3 %
	Yellow	2	2 %
	Purple	2	2 %
	Tan	1	1 %
	Navy	1	1 %
Terrified			
	Red	38	38 %
	Black	36	36 %
	Blue	9	9 %
	Gray	6	6 %
	Green	6	6 %
	White	3	3 %
	Yellow	1	1 %
	Orange	1	1 %
	Deep purple	1	1 %
Troubled			
	Red	32	32 %
	Blue	17	17 %
	Gray	13	13 %
	Green	13	13 %
	Black	13	13 %
	Brown	5	5 %
	Orange	2	2 %
	White	1	1 %
	Yellow	1	1 %
	Pink	1	1 %
	Purple	1	1 %
	Silver	1	1 %
	Dark gray	1	1 %
Unhappy			
	Blue	42	42 %

Table 6 (continued)

Word	Color	Freq	%
	Black	19	19 %
	Gray	15	15 %
	Red	11	11 %
	Yellow	4	4 %
	Brown	4	4 %
	Green	2	2 %
	Orange	2	2 %
	White	1	1 %
	Purple	1	1 %
Upset			
	Blue	41	41 %
	Red	27	27 %
	Black	14	14 %
	Gray	8	8 %
	Brown	3	3 %
	Yellow	1	1 %
	Green	1	1 %
	Purple	1	1 %
	Orange	1	1 %
	Dark Red	1	1 %
	Peach	1	1 %
	Navy	1	1 %
Negative Emotion-Laden			
Abduction			
	Black	44	44 %
	Red	23	23 %
	Green	10	10 %
	Yellow	6	6 %
	Blue	5	5 %
	Gray	3	3 %
	Brown	3	3 %
	Orange	3	3 %
	Pink	1	1 %
	Silver	1	1 %
	Dark red	1	1 %
Abortion			
	Red	51	50 %
	Black	25	25 %
	Blue	6	6 %
	White	5	5 %
	Gray	4	4 %
	Yellow	4	4 %
	Pink	3	3 %
	Green	2	2 %
	Brown	1	1 %
	Dark red	1	1 %
Abuse			
	Red	48	48 %
	Black	39	39 %

Table 6 (continued)

Word	Color	Freq	%
	Blue	4	4 %
	Gray	4	4 %
	Green	2	2 %
	White	1	1 %
	Purple	1	1 %
	Brown	1	1 %
	Bees		
	Yellow	99	99 %
	Black	1	1 %
Bloody			
	Red	96	96 %
	Blue	1	1 %
	Black	1	1 %
	Crimson	1	1 %
	Wine red	1	1 %
Burial			
	Black	46	46 %
	Brown	41	41 %
	Gray	8	8 %
	Red	2	2 %
	White	1	1 %
	Dark brown	1	1 %
Cancer			
	Black	34	33 %
	Pink	21	20 %
	Red	20	19 %
	White	7	7 %
	Yellow	5	5 %
	Brown	5	5 %
	Blue	4	4 %
	Gray	3	3 %
	Orange	2	2 %
	Green	1	1 %
	Tan	1	1 %
Cemetery			
	Black	55	54 %
	Gray	33	33 %
	White	6	6 %
	Green	2	2 %
	Brown	2	2 %
	Red	1	1 %
	Silver	1	1 %
	Forest green	1	1 %
Coffin			
	Brown	53	53 %
	Black	39	39 %
	Gray	2	2 %
	Orange	1	1 %

Table 6 (continued)

Word	Color	Freq	%
	Silver	1	1 %
	Tan	1	1 %
	Magenta	1	1 %
	Mahogany	1	1 %
	Crème/cream	1	1 %
Corpse			
	Black	50	50 %
	White	19	19 %
	Gray	14	14 %
	Brown	6	6 %
	Blue	5	5 %
	Red	5	5 %
	Yellow	1	1 %
	Pink	1	1 %
	White	1	1 %
Crash			
	Red	53	52 %
	Black	26	26 %
	Gray	7	7 %
	Blue	5	5 %
	Brown	3	3 %
	Green	3	3 %
	Yellow	2	2 %
	Purple	1	1 %
	Orange	1	1 %
Criminal			
	Black	56	56 %
	Orange	12	12 %
	Red	11	11 %
	Gray	9	9 %
	White	4	4 %
	Brown	4	4 %
	Green	2	2 %
	Blue	1	1 %
	Pink	1	1 %
Crisis			
	Red	59	58 %
	Black	19	19 %
	Blue	7	7 %
	Gray	7	7 %
	Yellow	2	2 %
	Green	2	2 %
	Orange	2	2 %
	Brown	1	1 %
	Beige	1	1 %
	Dark red	1	1 %
Danger			
	Red	83	83 %

Table 6 (continued)

Word	Color	Freq	%
Dead	Black	9	9 %
	Orange	4	4 %
	Yellow	3	3 %
	Dark red	1	1 %
Death	Black	77	76 %
	Red	12	12 %
	White	3	3 %
	Blue	2	2 %
	Gray	2	2 %
	Green	2	2 %
	Brown	2	2 %
	Purple	1	1 %
Demon	Black	86	86 %
	Red	11	11 %
	White	1	1 %
	Gray	1	1 %
	Orange	1	1 %
Disaster	Red	66	66 %
	Black	28	28 %
	Blue	1	1 %
	Gray	1	1 %
	Green	1	1 %
	Purple	1	1 %
Divorce	Brown	1	1 %
	Black	40	40 %
	Red	31	31 %
	Gray	11	11 %
	Brown	9	9 %
	Blue	6	6 %
	Green	1	1 %
	Maroon	1	1 %
Funeral	Dark gray	1	1 %
	Black	47	47 %
	Red	26	26 %
	Blue	11	11 %
	Green	7	7 %
	Gray	5	5 %
	Brown	3	3 %
	White	1	1 %
Funeral	Dark brown	1	1 %
	Black	83	82 %
	Gray	7	7 %

Table 6 (continued)

Word	Color	Freq	%
Gun	Brown	7	7 %
	White	2	2 %
	Red	1	1 %
	Navy	1	1 %
	Black	74	74 %
Hell	Silver	11	11 %
	Gray	8	8 %
	Brown	3	3 %
	Pink	2	2 %
	Blue	1	1 %
Illness	Red	1	1 %
	Red	80	80 %
	Black	13	13 %
	White	2	2 %
	Blue	1	1 %
	Gray	1	1 %
	Green	1	1 %
	Orange	1	1 %
Infection	Dark red	1	1 %
	Green	43	43 %
	Red	23	23 %
	Black	13	13 %
	Blue	9	9 %
	Gray	5	5 %
	Yellow	4	4 %
	White	1	1 %
	Pink	1	1 %
	Brown	1	1 %
Injury	Red	40	40 %
	Green	24	24 %
	Black	11	11 %
	Brown	8	8 %
	White	5	5 %
	Yellow	5	5 %
	Pink	3	3 %
	Gray	2	2 %
Injury	Blue	1	1 %
	Dark magenta	1	1 %
	Red	62	61 %
	Black	15	15 %
	Blue	5	5 %
Injury	Brown	5	5 %
	White	3	3 %

Table 6 (continued)

Word	Color	Freq	%
Insult	Purple	3	3 %
	Pink	3	3 %
	Gray	2	2 %
	Orange	2	2 %
	Green	1	1 %
	Dark red	1	1 %
	Red	30	29 %
	Black	27	26 %
	Green	14	14 %
	Gray	8	8 %
	Blue	7	7 %
	Brown	4	4 %
	Purple	3	3 %
	Brown	3	3 %
	White	2	2 %
	Yellow	1	1 %
Jail	Silver	1	1 %
	Tan	1	1 %
	Magenta	1	1 %
	Gray	41	41 %
	Black	31	31 %
	Orange	11	11 %
	Silver	11	11 %
	Brown	3	3 %
Killer	Blue	1	1 %
	Red	1	1 %
	Black & White	1	1 %
	Red	54	54 %
	Black	36	36 %
	White	3	3 %
	Gray	2	2 %
	Blue	1	1 %
	Brown	1	1 %
Lie	Dark Red	1	1 %
	Scarlett	1	1 %
	Charcoal	1	1 %
	Black	29	29 %
	Red	24	24 %
	White	17	17 %
	Green	14	14 %
	Blue	8	8 %
	Gray	3	3 %
	Yellow	1	1 %
Purple	1	1 %	

Table 6 (continued)

Word	Color	Freq	%
Massacre	Brown	1	1 %
	Orange	1	1 %
	Maroon	1	1 %
	Red	79	79 %
	Black	13	13 %
	Blue	3	3 %
	White	1	1 %
	Green	1	1 %
	Brown	1	1 %
	Gold	1	1 %
Morbid	Dark red	1	1 %
	Black	67	67 %
	Red	11	11 %
	Gray	9	9 %
	White	4	4 %
	Brown	3	3 %
	Blue	2	2 %
Nightmare	Green	2	2 %
	Yellow	1	1 %
	Black	75	74 %
	Red	12	12 %
	Blue	5	5 %
	Gray	3	3 %
	Green	3	3 %
Pain	Purple	2	2 %
	Brown	1	1 %
	Red	72	71 %
	Black	8	8 %
	Blue	6	6 %
	Yellow	3	3 %
	White	2	2 %
	Gray	2	2 %
	Green	2	2 %
	Purple	1	1 %
Poison	Brown	1	1 %
	Orange	1	1 %
	Dark Red	1	1 %
	Flesh/skin	1	1 %
	Crème/cream	1	1 %
	Black	35	35 %
	Green	27	27 %
Red	26	26 %	
Yellow	3	3 %	

Table 6 (continued)

Word	Color	Freq	%
Pollute	White	2	2 %
	Blue	2	2 %
	Clear	2	25
	Purple	2	2 %
	Gray	1	1 %
	Lime green	1	1 %
	Gray	38	38 %
	Black	36	36 %
	Green	10	10 %
	Brown	10	10 %
Poverty	White	1	1 %
	Blue	1	1 %
	Red	1	1 %
	Yellow	1	1 %
	Dark gray	1	1 %
	Black	33	33 %
	Brown	24	24 %
	Gray	17	17 %
	Blue	8	8 %
	Green	6	6 %
Punishment	Red	4	4 %
	Orange	3	3 %
	Yellow	1	1 %
	Pink	1	1 %
	Gold	1	1 %
	Silver	1	1 %
	Crimson	1	1 %
	Red	50	49 %
	Black	33	32 %
	Blue	5	5 %
Rape	Gray	3	3 %
	White	2	2 %
	Green	2	2 %
	Purple	2	2 %
	Brown	2	2 %
	Yellow	1	1 %
	Silver	1	1 %
	Dark red	1	1 %
	Red	57	57 %
	Black	37	37 %
	Gray	2	2 %
	White	1	1 %
	Blue	1	1 %
	Purple	1	1 %

Table 6 (continued)

Word	Color	Freq	%
Robber	Brown	1	1 %
	Black	83	83 %
	Red	10	10 %
	Green	2	2 %
	White	1	1 %
	Blue	1	1 %
	Gray	1	1 %
Sick	Brown	1	1 %
	Beige	1	1 %
	Green	61	60 %
	Blue	8	8 %
	Red	7	7 %
	Brown	6	6 %
	Gray	5	5 %
Sickness	Black	4	4 %
	White	3	3 %
	Yellow	3	3 %
	Orange	3	3 %
	Tan	1	1 %
	Pale green	1	1 %
	Green	47	47 %
	Red	18	18 %
	Black	12	12 %
	Blue	8	8 %
Slave	Yellow	6	6 %
	Brown	5	5 %
	Gray	2	2 %
	White	1	1 %
	Beige	1	1 %
	Dark blue	1	1 %
	Pale green	1	1 %
	Black	69	68 %
	Brown	12	12 %
	Red	8	8 %
Suicide	Gray	4	4 %
	Green	3	3 %
	White	2	2 %
	Yellow	2	2 %
	Blue	1	1 %
	Red	46	45 %
	Black	43	43 %
	Blue	5	5 %
	Gray	3	3 %

Table 6 (continued)

Word	Color	Freq	%	
Tomb	White	2	2 %	
	Green	1	1 %	
	Orange	1	1 %	
	Black	40	40 %	
	Gray	28	28 %	
	Brown	17	17 %	
	Yellow	4	4 %	
	Red	3	3 %	
	Gold	2	2 %	
	Beige	2	2 %	
	Blue	1	1 %	
	Green	1	1 %	
	Tan	1	1 %	
	Burlywood	1	1 %	
Sandstone	1	1 %		
Toothache	White	47	46 %	
	Red	33	32 %	
	Black	8	8 %	
	Yellow	4	4 %	
	Gray	3	3 %	
	Blue	2	2 %	
	Green	1	1 %	
	Purple	1	1 %	
	Brown	1	1 %	
	Dark red	1	1 %	
	Pale yellow	1	1 %	
	Tornado	Gray	50	49 %
		Black	19	19 %
		Blue	12	12 %
Brown		8	8 %	
Red		6	6 %	
White		2	2 %	
Yellow		1	1 %	
Green		1	1 %	
Purple		1	1 %	
Orange		1	1 %	
Dark gray		1	1 %	
Tragedy		Red	36	36 %
		Black	36	36 %
		Blue	12	12 %
	Gray	7	7 %	
	White	2	2 %	
	Yellow	2	2 %	
	Purple	1	1 %	

Table 6 (continued)

Word	Color	Freq	%
Trash	Brown	1	1 %
	Orange	1	1 %
	Burgundy	1	1 %
	Black	49	49 %
	Gray	16	16 %
	Brown	13	13 %
	White	10	10 %
	Green	9	9 %
	Maroon	1	1 %
	Dark green	1	1 %
Trauma	Red	51	51 %
	Black	17	17 %
	White	8	8 %
	Blue	8	8 %
	Gray	8	8 %
	Green	4	4 %
	Purple	1	1 %
	Orange	1	1 %
	Dark blue	1	1 %
	Navy	1	1 %
Ugly	Brown	35	35 %
	Black	26	26 %
	Gray	8	8 %
	Green	8	8 %
	White	4	4 %
	Blue	4	4 %
	Yellow	4	4 %
	Purple	3	3 %
	Orange	3	3 %
	Red	2	2 %
Ulcer	Silver	1	1 %
	Chartreuse	1	1 %
	Fuchsia	1	1 %
	Red	33	33 %
	Black	23	23 %
	Brown	9	9 %
	White	9	9 %
	Yellow	6	6 %
	Pink	6	6 %
	Blue	4	4 %
Gray	4	4 %	
Orange	2	2 %	
Peach	2	2 %	
Clear	1	1 %	

Table 6 (continued)

Word	Color	Freq	%	
Unfaithful	Green	1	1 %	
	Crimson	1	1 %	
	Black	36	35 %	
	Red	27	27 %	
	Blue	8	8 %	
	Green	6	6 %	
	Gray	5	5 %	
	Orange	5	5 %	
	Yellow	4	4 %	
	Brown	3	3 %	
	White	3	3 %	
	Pink	2	2 %	
	Purple	2	2 %	
	Fire brick	1	1 %	
	Victim	Red	43	43 %
Black		15	15 %	
White		12	12 %	
Gray		12	12 %	
Blue		8	8 %	
Purple		2	2 %	
Brown		2	2 %	
Yellow		1	1 %	
Pink		1	1 %	
Violet		1	1 %	
Magenta		1	1 %	
Midnight blue		1	1 %	
Indigo		1	1 %	
Violent		Red	61	60 %
		Black	23	23 %
	Purple	8	8 %	
	Violet	7	7 %	
	Blue	2	2 %	
War	Red	58	58 %	
	Black	11	11 %	
	Green	10	10 %	
	Brown	9	9 %	
	Gray	6	6 %	
	Blue	4	4 %	
	Dark red	1	1 %	
Positive Emotion Admired	Red	43	43 %	
	Blue	14	14 %	
	Pink	14	14 %	

Table 6 (continued)

Word	Color	Freq	%
	Yellow	12	12 %
	Orange	4	4 %
	White	4	4 %
	Black	2	2 %
	Gold	2	2 %
	Green	2	2 %
	Violet	1	1 %
	Light cyan	1	1 %
	Silver	1	1 %
	Sky blue	1	1 %
Affection	Red	49	49 %
	Pink	28	28 %
	Yellow	8	8 %
	Blue	8	8 %
	Purple	3	3 %
	White	2	2 %
	Green	1	1 %
	Light blue	1	1 %
Aroused	Gold	1	1 %
	Red	63	63 %
	Pink	11	11 %
	Yellow	7	7 %
	Blue	6	6 %
	White	5	5 %
	Green	3	3 %
	Brown	2	2 %
	Black	2	2 %
	Orange	1	1 %
	Hot pink	1	1 %
	Blue-green	1	1 %
	Astonished	Yellow	24
White		21	21 %
Red		18	18 %
Blue		11	11 %
Orange		9	9 %
Green		6	6 %
Black		3	3 %
Gray		2	2 %
Baby blue		1	1 %
Brown		1	1 %
Purple		1	1 %
Light blue		1	1 %
Milk white		1	1 %
Chartreuse		1	1 %
Cream/ivory	1	1 %	

Table 6 (continued)

Word	Color	Freq	%
Beautiful	Pink	36	35 %
	Blue	20	19 %
	Yellow	9	9 %
	Purple	8	8 %
	White	6	6 %
	Red	6	6 %
	Black	5	5 %
	Green	4	4 %
	Brown	2	2 %
	Gold	2	2 %
	Sky Blue	2	2 %
	Orange	1	1 %
	Silver	1	1 %
Brave	Red	36	36 %
	Blue	28	28 %
	Gold	8	8 %
	Yellow	5	5 %
	Brown	5	5 %
	Black	4	4 %
	White	3	3 %
	Green	3	3 %
	Orange	3	3 %
	Purple	3	3 %
	Violet	1	1 %
	Silver	1	1 %
	Bronze	1	1 %
Cheer	Yellow	38	38 %
	Red	24	24 %
	Blue	11	11 %
	Pink	8	8 %
	Orange	6	6 %
	White	5	5 %
	Purple	4	4 %
	Green	3	3 %
	Maroon	1	1 %
Confident	Red	32	31 %
	Blue	26	25 %
	Yellow	13	13 %
	Purple	6	6 %
	White	4	4 %
	Pink	4	4 %
	Green	4	4 %
	Gold	4	4 %
	Black	3	3 %
	Orange	3	3 %

Table 6 (continued)

Word	Color	Freq	%
	Violet	2	2 %
	Turquoise	1	1 %
Elated	Yellow	21	21 %
	White	21	21 %
	Blue	21	21 %
	Red	9	9 %
	Pink	6	6 %
	Purple	5	5 %
	Gray	5	5 %
	Green	5	5 %
	Orange	2	2 %
	Brown	2	2 %
Friendly	Black	1	1 %
	Baby blue	1	1 %
	Yellow	41	41 %
	Blue	18	18 %
	Pink	16	16 %
	Red	11	11 %
	Green	7	7 %
	Purple	3	3 %
	Orange	3	3 %
	Peach	1	1 %
Grateful	Blue	22	22 %
	Yellow	17	17 %
	Green	15	15 %
	White	8	8 %
	Purple	8	8 %
	Red	7	7 %
	Pink	7	7 %
	Orange	6	6 %
	Gray	5	5 %
	Lilac	1	1 %
Happy	Beige	1	1 %
	Cream	1	1 %
	Coral	1	1 %
	Lime green	1	1 %
	Black	1	1 %
	Yellow	53	53 %
	Red	17	17 %
	Pink	11	11 %
	Blue	8	8 %
	Green	6	6 %
Purple	2	2 %	
White	2	2 %	
Bright red	1	1 %	

Table 6 (continued)

Word	Color	Freq	%	
Hopeful	Blue	29	29 %	
	White	28	28 %	
	Yellow	18	18 %	
	Pink	9	9 %	
	Red	5	5 %	
	Orange	3	3 %	
	Green	1	1 %	
	Silver	1	1 %	
	Magenta	1	1 %	
	Light blue	1	1 %	
	Antique white	1	1 %	
	Periwinkle	1	1 %	
	Pale yellow	1	1 %	
	Brown	1	1 %	
	Inspired	Yellow	23	23 %
White		19	19 %	
Blue		19	19 %	
Red		15	15 %	
Pink		5	5 %	
Purple		5	5 %	
Green		4	4 %	
Orange		2	2 %	
Lavender		2	2 %	
Black		1	1 %	
Violet		1	1 %	
Gold		1	1 %	
Light blue		1	1 %	
Peach		1	1 %	
Teal		1	1 %	
Blue-green	1	1 %		
Baby blue	1	1 %		
Joy	Yellow	27	27 %	
	Red	21	21 %	
	Pink	13	13 %	
	Blue	12	12 %	
	White	9	9 %	
	Green	7	7 %	
	Purple	4	4 %	
	Orange	4	4 %	
	Gold	1	1 %	
	Silver	1	1 %	
	Turquoise	1	1 %	
	Joyful	Yellow	37	37 %
		Blue	26	26 %
		Red	21	21 %

Table 6 (continued)

Word	Color	Freq	%	
	White	6	6 %	
	Pink	3	3 %	
	Green	3	3 %	
	Black	1	1 %	
	Orange	1	1 %	
	Gold	1	1 %	
	Periwinkle	1	1 %	
	Kind	Yellow	27	26 %
		Blue	20	20 %
		Pink	20	20 %
Green		13	13 %	
White		8	8 %	
Red		5	5 %	
Purple		4	4 %	
Orange		2	2 %	
Gray		1	1 %	
Charcoal		1	1 %	
Sea foam green	1	1 %		
Love	Red	77	76 %	
	Pink	9	9 %	
	White	4	4 %	
	Blue	4	4 %	
	Yellow	2	2 %	
	Purple	2	2 %	
	Green	1	1 %	
	Orange	1	1 %	
	Gold	1	1 %	
	Lust	Red	69	68 %
Pink		8	8 %	
Black		8	8 %	
Purple		4	4 %	
Yellow		3	3 %	
Orange		2	2 %	
Violet		2	2 %	
White		1	1 %	
Blue		1	1 %	
Green		1	1 %	
Brown	1	1 %		
Dark red	1	1 %		
Merry	Red	65	65 %	
	Green	13	13 %	
	Yellow	10	10 %	
	Blue	6	6 %	
	Pink	2	2 %	
Gray	1	1 %		

Table 6 (continued)

Word	Color	Freq	%
Nice	Purple	1	1 %
	Orange	1	1 %
	Salmon	1	1 %
	Yellow	30	29 %
	Blue	24	23 %
	Pink	17	17 %
	White	13	13 %
	Red	5	5 %
	Green	2	2 %
	Purple	2	2 %
	Black	2	2 %
	Gold	2	2 %
	Silver	1	1 %
	Lilac	1	1 %
Light blue	1	1 %	
Passion	Indigo	1	1 %
	Red	79	77 %
	Pink	6	6 %
	White	4	4 %
	Blue	4	4 %
	Yellow	3	3 %
	Purple	2	2 %
	Green	1	1 %
	Black	1	1 %
	Dark red	1	1 %
Proud	Scarlett	1	1 %
	Blue	28	27 %
	Red	21	21 %
	Yellow	16	16 %
	White	10	10 %
	Purple	8	8 %
	Orange	5	5 %
	Green	4	4 %
	Black	3	3 %
	Pink	2	2 %
	Gold	2	2 %
	Beige	1	1 %
	Peach	1	1 %
	Misty rose	1	1 %
Relaxed	Blue	43	42 %
	White	14	14 %
	Yellow	12	12 %
	Pink	6	6 %
	Green	6	6 %
	Red	4	4 %

Table 6 (continued)

Word	Color	Freq	%
	Purple	3	3 %
	Light blue	3	3 %
	Tan	2	2 %
	Sky blue	2	2 %
	Gray	1	1 %
	Brown	1	1 %
	Peach	1	1 %
	Lavender	1	1 %
	Off white	1	1 %
	Forest green	1	1 %
Safe	Baby blue	1	1 %
	White	31	30 %
	Blue	30	29 %
	Yellow	10	10 %
	Green	8	8 %
	Gray	6	6 %
	Red	5	5 %
	Black	4	4 %
	Pink	2	2 %
	Purple	1	1 %
	Brown	1	1 %
	Orange	1	1 %
	Gold	1	1 %
Satisfied	Beige	1	1 %
	Pale blue	1	1 %
	Blue	33	33 %
	Red	18	18 %
	Yellow	14	14 %
	White	11	11 %
	Green	9	9 %
	Pink	7	7 %
	Orange	4	4 %
	Purple	1	1 %
Secure	Black	1	1 %
	Gold	1	1 %
	Lime green	1	1 %
	Blue	27	27 %
	White	23	23 %
	Red	14	14 %
	Yellow	9	9 %
	Green	8	8 %
	Gray	5	5 %
	Black	3	3 %
Gold	3	3 %	
Silver	2	2 %	
Pink	1	1 %	

Table 6 (continued)

Word	Color	Freq	%
Surprised	Purple	1	1 %
	Brown	1	1 %
	Orange	1	1 %
	Light blue	1	1 %
	Salmon	1	1 %
	Sapphire	1	1 %
	Red	32	32 %
	Yellow	26	26 %
	White	9	9 %
	Blue	8	8 %
	Orange	8	8 %
	Pink	7	7 %
Triumphant	Green	3	3 %
	Purple	2	2 %
	Black	1	1 %
	Violet	1	1 %
	Gold	1	1 %
	Silver	1	1 %
	Yellow	26	26 %
	Red	22	22 %
	Blue	11	11 %
	Gold	10	10 %
	White	6	6 %
	Purple	5	5 %
Positive Emotion-Laden Achievement	Green	4	4 %
	Black	4	4 %
	Gray	3	3 %
	Brown	3	3 %
	Pink	2	2 %
	Orange	2	2 %
	Silver	2	2 %
	Bronze	1	1 %
	Blue	27	27 %
	Gold	27	27 %
	Red	16	16 %
	Yellow	16	16 %
Adorable	Green	6	6 %
	White	5	5 %
	Orange	2	2 %
	Purple	1	1 %
	Pink	50	49 %
	Red	22	22 %
	Blue	12	12 %
	Yellow	6	6 %

Table 6 (continued)

Word	Color	Freq	%
Baby	Green	4	4 %
	White	2	2 %
	Brown	2	2 %
	Purple	1	1 %
	Tan	1	1 %
	Light blue	1	1 %
	Lavender	1	1 %
	Pink	39	38 %
	White	21	21 %
	Blue	20	20 %
	Yellow	7	7 %
	Birthday	Peach	6
Black		3	3 %
Red		2	2 %
Brown		2	2 %
Green		1	1 %
Dodger blue		1	1 %
Blue		24	24 %
Pink		21	21 %
Yellow		20	20 %
Red		16	16 %
White		7	7 %
Bouquet		Green	5
	Purple	4	4 %
	Black	2	2 %
	Orange	1	1 %
	Magenta	1	1 %
	Red	47	47 %
	Pink	22	22 %
	White	8	8 %
	Green	8	8 %
	Yellow	6	6 %
	Blue	5	5 %
	Cash	Purple	3
Brown		1	1 %
Orange		1	1 %
Green		94	93 %
Gray		2	2 %
Black		2	2 %
White		1	1 %
Brown		1	1 %
Gold		1	1 %
Gold		37	37 %
Red		22	22 %

Table 6 (continued)

Word	Color	Freq	%
Church	Yellow	22	22 %
	Blue	12	12 %
	White	4	4 %
	Purple	1	1 %
	Black	1	1 %
	Orange	1	1 %
	Silver	1	1 %
	White	61	61 %
Diamond	Brown	16	16 %
	Gray	6	6 %
	Red	6	6 %
	Black	4	4 %
	Yellow	3	3 %
	Purple	2	2 %
	Pink	1	1 %
	Gold	1	1 %
	White	71	70 %
	Diploma	Silver	8
Clear		6	6 %
Blue		3	3 %
Yellow		3	3 %
Red		3	3 %
Gold		3	3 %
Black		2	2 %
Pink		1	1 %
Purple		1	1 %
White		68	68 %
Blue		9	9 %
Black		6	6 %
Engaged		Red	3
	Gold	3	3 %
	Crème/cream	2	2 %
	Gray	1	1 %
	Yellow	1	1 %
	Green	1	1 %
	Purple	1	1 %
	Silver	1	1 %
	Tan	1	1 %
	Copper	1	1 %
	Lime green	1	1 %
	White/gold	1	1 %
	White	33	33 %
	Blue	15	15 %
	Pink	12	12 %
Gold	12	12 %	

Table 6 (continued)

Word	Color	Freq	%
Freedom	Red	9	9 %
	Silver	9	9 %
	Yellow	7	7 %
	Purple	1	1 %
	Orange	1	1 %
	Light blue	1	1 %
	White	30	30 %
Friend	Blue	28	28 %
	Red	17	17 %
	Yellow	8	8 %
	Green	7	7 %
	Black	4	4 %
	Brown	2	2 %
	Orange	1	1 %
	Gold	1	1 %
	Silver	1	1 %
	Royal blue	1	1 %
	Forest green	1	1 %
Gift	Yellow	27	27 %
	Blue	24	24 %
	Pink	14	14 %
	Green	9	9 %
	Red	6	6 %
	Purple	5	5 %
	White	4	4 %
	Brown	3	3 %
	Gray	2	2 %
	Black	2	2 %
	Orange	2	2 %
	Gold	1	1 %
	Dark green	1	1 %
God	Blue	30	29 %
	Red	22	22 %
	Green	13	13 %
	Yellow	8	8 %
	Pink	7	7 %
	White	5	5 %
	Purple	5	5 %
	Gold	5	5 %
	Orange	3	3 %
	Silver	2	2 %
Engaged	Black	1	1 %
	Sapphire	1	1 %
Engaged	White	75	74 %
	Black	7	7 %

Table 6 (continued)

Word	Color	Freq	%
	Gold	6	6 %
	Red	3	3 %
	Blue	2	2 %
	Green	2	2 %
	Purple	1	1 %
	Brown	1	1 %
	Bronze	1	1 %
	Navy	1	1 %
	Gray	1	1 %
	Yellow	1	1 %
Grin	White	28	27 %
	Yellow	21	21 %
	Red	18	18 %
	Green	11	11 %
	Pink	8	8 %
	Blue	5	5 %
	Gray	3	3 %
	Black	2	2 %
	Orange	2	2 %
	Purple	1	1 %
	Brown	1	1 %
	Tan	1	1 %
	Peach	1	1 %
Heaven	White	71	71 %
	Blue	17	17 %
	Yellow	4	4 %
	Gold	3	3 %
	Green	1	1 %
	Black	1	1 %
	Orange	1	1 %
	Silver	1	1 %
	Black & white	1	1 %
Holiday	Red	45	45 %
	Green	29	29 %
	Yellow	9	9 %
	White	6	6 %
	Blue	6	6 %
	Pink	2	2 %
	Brown	2	2 %
	Orange	1	1 %
	Gold	1	1 %
Jewel	Red	21	21 %
	White	17	17 %
	Blue	17	17 %
	Gold	12	12 %
	Green	8	8 %

Table 6 (continued)

Word	Color	Freq	%	
	Purple	8	8 %	
	Pink	5	5 %	
	Clear	2	2 %	
	Yellow	2	2 %	
	Orange	2	2 %	
	Silver	2	2 %	
	Gray	1	1 %	
	Lavender	1	1 %	
	Golden red	1	1 %	
	Sapphire	1	1 %	
Ruby	1	1 %		
Joke	Yellow	25	25 %	
	Blue	20	20 %	
	Red	18	18 %	
	Green	15	15 %	
	Orange	8	8 %	
	Pink	6	6 %	
	White	3	3 %	
	Purple	2	2 %	
	Black	2	2 %	
	Magenta	1	1 %	
Azure	1	1 %		
Kiss	Red	63	63 %	
	Pink	26	26 %	
	Blue	5	5 %	
	White	2	2 %	
	Yellow	1	1 %	
	Black	1	1 %	
	Brown	1	1 %	
	Light pink	1	1 %	
Laughter	Yellow	42	42 %	
	Red	16	16 %	
	Blue	15	15 %	
	Pink	9	9 %	
	White	8	8 %	
	Green	3	3 %	
	Purple	3	3 %	
	Orange	1	1 %	
	Gold	1	1 %	
	Sky blue	1	1 %	
Peach orange	1	1 %		
Lucky	Green	51	50 %	
	Yellow	22	22 %	
	Blue	7	7 %	
	Red	5	5 %	

Table 6 (continued)

Word	Color	Freq	%
Millionaire	White	4	4 %
	Pink	3	3 %
	Gold	3	3 %
	Gray	2	2 %
	Purple	1	1 %
	Black	1	1 %
	Orange	1	1 %
	Dark green	1	1 %
	Green	85	84 %
	White	4	4 %
Miracle	Blue	4	4 %
	Gold	3	3 %
	Red	2	2 %
	Purple	1	1 %
	Silver	1	1 %
	Dark green	1	1 %
	White	48	48 %
	Blue	18	18 %
	Yellow	9	9 %
	Gold	9	9 %
Money	Pink	5	5 %
	Red	4	4 %
	Green	2	2 %
	Gray	1	1 %
	Purple	1	1 %
	Orange	1	1 %
	Silver	1	1 %
	Aqua	1	1 %
	Off-white	1	1 %
	Green	98	98 %
Outdoors	Brown	1	1 %
	Indigo	1	1 %
	Green	65	64 %
	Blue	20	20 %
	White	5	5 %
	Yellow	5	5 %
	Brown	3	3 %
	Green	65	64 %
	Blue	20	20 %
	White	5	5 %
	Yellow	5	5 %
	Brown	3	3 %
	Gray	1	1 %
	Red	1	1 %
	Sky blue	1	1 %

Table 6 (continued)

Word	Color	Freq	%	
Peace	Forest green	1	1 %	
	White	44	44 %	
	Blue	28	28 %	
	Yellow	8	8 %	
	Green	8	8 %	
	Pink	4	4 %	
	Red	2	2 %	
	Orange	2	2 %	
	Purple	1	1 %	
	Gold	1	1 %	
Pretty	Sky blue	1	1 %	
	Light blue	1	1 %	
	Pink	64	63 %	
	Red	9	9 %	
	Blue	6	6 %	
	Black	6	6 %	
	Yellow	5	5 %	
	Purple	5	5 %	
	White	4	4 %	
	Green	1	1 %	
Rescue	Brown	1	1 %	
	Light pink	1	1 %	
	Red	62	61 %	
	Blue	15	15 %	
	Yellow	8	8 %	
	White	5	5 %	
	Black	3	3 %	
	Green	2	2 %	
	Brown	2	2 %	
	Tan	1	1 %	
Riches	Indigo	1	1 %	
	Green	39	39 %	
	Gold	39	39 %	
	Yellow	11	11 %	
	Red	7	7 %	
	Blue	3	3 %	
	White	1	1 %	
	Romantic	Red	87	87 %
		Pink	8	8 %
		White	1	1 %
Blue		1	1 %	
Purple		1	1 %	
Black		1	1 %	
Wine red		1	1 %	

Table 6 (continued)

Word	Color	Freq	%
Thrill	Red	51	51 %
	Blue	14	14 %
	Yellow	10	10 %
	Green	8	8 %
	Orange	7	7 %
	Black	6	6 %
	White	1	1 %
	Purple	1	1 %
	Silver	1	1 %
	Aqua	1	1 %
	Forest green	1	1 %
Treasure	Gold	73	73 %
	Brown	9	9 %
	Yellow	8	8 %
	Pink	2	2 %
	Green	2	2 %
	White	1	1 %
	Blue	1	1 %
	Red	1	1 %
	Purple	1	1 %
	Maroon	1	1 %
	Pearl white	1	1 %
	Triumph	Yellow	30
Gold		27	27 %
Red		16	16 %
Blue		12	12 %
White		6	6 %
Green		2	2 %
Black		2	2 %
Gray		1	1 %
Purple		1	1 %
Brown		1	1 %
Silver		1	1 %
Bronze		1	1 %
Indigo		1	1 %
Trophy		Gold	74
	Yellow	17	17 %
	Silver	4	4 %
	Green	2	2 %
	Gray	1	1 %
	Red	1	1 %
	Black	1	1 %
	Bronze	1	1 %
Vacation	Blue	49	48 %

Table 6 (continued)

Word	Color	Freq	%
	Yellow	28	27 %
	Red	4	4 %
	Orange	4	4 %
	White	3	3 %
	Pink	3	3 %
	Green	3	3 %
	Purple	2	2 %
	Tan	2	2 %
	Beige	2	2 %
	Black	1	1 %
Victory	Gold	1	1 %
	Red	31	31 %
	Gold	22	22 %
	Blue	20	20 %
	White	10	10 %
	Yellow	7	7 %
	Green	4	4 %
	Silver	2	2 %
	Pink	1	1 %
	Black	1	1 %
Waterfall	Brown	1	1 %
	Orange	1	1 %
	Violet	1	1 %
	Blue	79	79 %
	White	12	12 %
	Gray	3	3 %
	Clear	2	2 %
	Green	1	1 %
	Aqua	1	1 %
	Forest	1	1 %
Wedding	Rainbow	1	1 %
	White	95	95 %
	Red	2	2 %
	Purple	1	1 %
	Black	1	1 %
Wish	Gold	1	1 %
	White	34	33 %
	Blue	24	23 %
	Yellow	15	15 %
	Green	8	8 %
	Gold	7	7 %
	Red	6	6 %
	Pink	5	5 %
	Purple	1	1 %
	Orange	1	1 %

Table 6 (continued)

Word	Color	Freq	%
	Silver	1	1 %
	Cream	1	1 %

Appendix 2

Table 7 Color associations for Sample A and Sample B for the negative and positive emotion and emotion-laden words

Word	Sample A	Sample B	
Negative Emotion			
Afraid	Black 53 %	Black 49 %	
	Red 24 %	Red 31 %	
	Blue 12 %	Blue 8 %	
	Green 2 %	Green 4 %	
	Brown 2 %	Brown 2 %	
	Yellow 4 %	Gray 4 %	
	Dark Blue 2 %	Purple 2 %	
	TSS = 7 MSS = 4	TSS = 7 MSS = 5	
Agony	Black 44 %	Black 53 %	
	Red 34 %	Red 29 %	
	Brown 10 %	Brown 6 %	
	Blue 4 %	Blue 4 %	
	Gray 4 %	Gray 2 %	
	Orange 2 %	Green 4 %	
	Silver 2 %	Teal 2 %	
	TSS = 7 MSS = 5	TSS = 7 MSS = 5	
Angry	Red 78 %	Red 78 %	
	Black 16 %	Black 12 %	
	Brown 2 %	Brown 2 %	
	Orange 2 %	Blue 4 %	
	Yellow 2 %	Dark gray 2 %	
	TSS = 5 MSS = 2	Dusty red 2 % TSS = 6 MSS = 3	
	Anguished	Red 40 %	Red 35 %
		Gray 18 %	Gray 15 %
Blue 12 %		Blue 20 %	
Black 12 %		Black 15 %	
Green 10 %		Green 9 %	
White 6 %		Yellow 2 %	
Orange 2 %		Silver 2 %	
TSS = 7 MSS = 6		Fire brick 2 % TSS = 8 MSS = 5	
Contempt	Red 23 %	Red 26 %	

Table 7 (continued)

Word	Sample A	Sample B
	Black 18 %	Black 20 %
	Blue 20 %	Blue 12 %
	Green 10 %	Green 16 %
	Yellow 7 %	Yellow 4 %
	Pink 4 %	Pink 6 %
	White 4 %	White 6 %
	Gray 6 %	Gray 2 %
	Orange 4 %	Orange 4 %
	Pale green 2 %	Brown 2 %
	Crimson 2 %	Dark gray 2 %
	TSS = 11 MSS = 7	TSS = 11 MSS = 5
Cruel	Red 48 %	Red 43 %
	Black 35 %	Black 33 %
	Green 6 %	Green 6 %
	Blue 2 %	Blue 6 %
	Gray 4 %	Gray 4 %
	White 4 %	White 4 %
	Dark red 2 %	Yellow 2 %
	TSS = 7 MSS = 3	Purple 2 % TSS = 8 MSS = 4
Depressed	Blue 39 %	Blue 46 %
	Black 33 %	Black 28 %
	Gray 12 %	Gray 12 %
	Red 8 %	Red 6 %
	Yellow 2 %	Yellow 4 %
	Green 2 %	Midnight blue 2 %
	Brown 4 %	Navy 2 %
	TSS = 7 MSS = 3	TSS = 7 MSS = 3
Discouraged	Blue 27 %	Blue 31 %
	Black 29 %	Black 21 %
	Red 12 %	Red 18 %
	Gray 12 %	Gray 8 %
	Brown 10 %	Brown 8 %
	Yellow 4 %	Yellow 6 %
	Green 2 %	Green 4 %
	Orange 2 %	White 2 %
	TSS = 8 MSS = 4	Indigo 2 % TSS = 9 MSS = 5
Disgusted	Green 24 %	Green 26 %
	Brown 18 %	Brown 24 %
	Red 16 %	Red 24 %
	Black 18 %	Black 18 %
	Gray 6 %	Gray 2 %
	Blue 2 %	Blue 4 %
	Purple 2 %	Purple 2 %

Table 7 (continued)

Word	Sample A	Sample B	
Dreadful	Orange 6 %	Orange/red 2 %	
	Yellow 2 %	TSS = 8	
	Tan 2 %	MSS = 5	
	Violet 2 %		
	White 2 %		
	TSS = 12		
	MSS = 6		
	Black 53 %	Black 54 %	
	Red 20 %	Red 27 %	
	Green 8 %	Green 6 %	
	Gray 8 %	Gray 4 %	
	Blue 4 %	Blue 6 %	
	White 2 %	White 2 %	
	Brown 2 %	Dark red 2 %	
Orange/yellow 2 %	TSS = 7		
TSS = 8	MSS = 4		
MSS = 5			
Embarrassed	Red 64 %	Red 67 %	
	Blue 10 %	Blue 6 %	
	Green 8 %	Green 4 %	
	Black 4 %	Black 6 %	
	Yellow 6 %	Yellow 2 %	
	Pink 4 %	Pink 4 %	
	Gray 2 %	Gray 4 %	
	Purple 2 %	Purple 2 %	
	TSS = 8	Brown 4 %	
	MSS = 6	Turquoise 2 %	
		TSS = 10	
		MSS = 7	
Enraged	Red 72 %	Red 73 %	
	Black 13 %	Black 17 %	
	Blue 6 %	Blue 2 %	
	White 2 %	Gray 2 %	
	Yellow 2 %	Orange 2 %	
	Green 2 %	Gold 2 %	
	Purple 2 %	Dark red 2 %	
	Silver 2 %	TSS = 7	
	TSS = 8	MSS = 2	
	MSS = 3		
	Fear	Red 54 %	Red 44 %
		Black 32 %	Black 35 %
		Gray 4 %	Gray 8 %
		Blue 6 %	Blue 4 %
Green 2 %		Green 6 %	
Yellow 2 %		Orange 2 %	
TSS = 6		Crimson 2 %	
MSS = 4		TSS = 7	
		MSS = 5	
Frustrated		Red 52 %	Red 51 %

Table 7 (continued)

Word	Sample A	Sample B	
	Black 13 %	Black 20 %	
	Green 11 %	Green 8 %	
	Gray 4 %	Gray 8 %	
	Blue 6 %	Blue 2 %	
	Yellow 4 %	Yellow 4 %	
	Purple 4 %	Purple 2 %	
	Orange 2 %	Orange 4 %	
	Brown 4 %	TSS = 8	
	TSS = 9	MSS = 6	
	MSS = 8		
	Guilty	Red 34 %	Red 25 %
		Green 18 %	Green 23 %
		Black 18 %	Black 14 %
		Gray 10 %	Gray 14 %
Blue 10 %		Blue 12 %	
Yellow 2 %		Yellow 6 %	
Orange 4 %		Brown 4 %	
White 4 %		Turquoise 2 %	
TSS = 8		TSS = 8	
MSS = 7		MSS = 7	
Helpless		Black 22 %	Black 25 %
		Gray 16 %	Gray 17 %
		White 18 %	White 10 %
		Blue 12 %	Blue 14 %
	Yellow 6 %	Yellow 10 %	
	Red 8 %	Red 6 %	
	Green 6 %	Green 4 %	
	Brown 4 %	Brown 6 %	
	Orange 4 %	Orange 2 %	
	Tan 2 %	Purple 4 %	
	Coral 2 %	Light gray 2 %	
	TSS = 11	TSS = 11	
	MSS = 9	MSS = 9	
Hostile	Red 63 %	Red 56 %	
	Black 21 %	Black 31 %	
	White 4 %	White 2 %	
	Gray 4 %	Gray 2 %	
	Yellow 2 %	Blue 4 %	
	Brown 2 %	Green 2 %	
	Dark red 2 %	Purple 2 %	
	Silver 2 %	TSS = 7	
	TSS = 8	MSS = 3	
	MSS = 4		
	Jealousy	Green 55 %	Green 61 %
		Red 23 %	Red 20 %
		Blue 12 %	Blue 6 %
		Yellow 2 %	Yellow 6 %
Black 2 %		Black 2 %	
Purple 4 %		Pink 2 %	

Table 7 (continued)

Word	Sample A	Sample B
Lonely	Violet 2 %	Brown 2 %
	TSS = 7	TSS = 7
	MSS = 4	MSS = 4
	Blue 44 %	Blue 50 %
	Black 18 %	Black 14 %
	Gray 14 %	Gray 12 %
	White 6 %	White 10 %
	Red 6 %	Red 2 %
	Green 4 %	Green 2 %
	Yellow 4 %	Purple 4 %
	Light blue 2 %	Pale green 2 %
	Mahogany 2 %	Blue violet 2 %
	TSS = 9	Blue gray 2 %
	MSS = 7	TSS = 10
Mad	Red 84 %	Red 82 %
	Black 10 %	Black 16 %
	Brown 2 %	Blue 2 %
	Scarlett 2 %	TSS = 3
	Dark red 2 %	MSS = 2
	TSS = 5	
Misery	MSS = 2	
	Black 47 %	Black 46 %
	Red 21 %	Red 19 %
	Blue 13 %	Blue 8 %
	Gray 8 %	Gray 13 %
	Green 7 %	Green 4 %
	White 2 %	White 6 %
	Brown 2 %	Purple 2 %
	TSS = 7	Dark purple 2 %
	MSS = 5	TSS = 9
Moody		MSS = 6
	Blue 23 %	Blue 20 %
	Gray 16 %	Gray 18 %
	Red 16 %	Red 10 %
	Black 12 %	Black 14 %
	Green 8 %	Green 10 %
	Purple 6 %	Purple 10 %
	Brown 8 %	Brown 8 %
	Orange 2 %	Orange 2 %
	Yellow 4 %	Maroon 4 %
	White 2 %	Pink 2 %
	Navy 2 %	Indigo 2 %
	Rainbow 2 %	TSS = 11
	TSS = 12	MSS = 8
Nervous	MSS = 8	
	Red 20 %	Red 24 %
	Green 18 %	Green 14 %
	Blue 14 %	Blue 16 %

Table 7 (continued)

Word	Sample A	Sample B
	Yellow 14 %	Yellow 14 %
	Gray 10 %	Gray 6 %
	Orange 8 %	Orange 8 %
	Black 6 %	Black 4 %
	Brown 4 %	Brown 6 %
	White 2 %	White 6 %
	Light green 2 %	Silver 2 %
	Fuchsia 2 %	TSS = 10
	TSS = 11	MSS = 9
	MSS = 8	
	Panic	Red 69 %
Black 6 %		Black 10 %
Blue 10 %		Blue 6 %
Yellow 4 %		Yellow 4 %
White 4 %		Green 2 %
Green 2 %		Purple 2 %
Brown 2 %		Orange 2 %
Beige 2 %		Indian red 2 %
TSS = 8		TSS = 8
MSS = 5		MSS = 4
Rage	Red 86 %	Red 94 %
	Black 10 %	Black 6 %
	Pink 2 %	TSS = 2
	Green 2 %	MSS = 2
	TSS = 4	
Regretful	MSS = 2	
	Red 29 %	Red 28 %
	Black 31 %	Black 24 %
	Blue 12 %	Blue 20 %
	Green 10 %	Green 6 %
	Gray 8 %	Gray 6 %
	Yellow 4 %	Yellow 7 %
	Purple 2 %	Purple 4 %
	Orange 2 %	White 2 %
	Brown 2 %	Pink 2 %
Sad	TSS = 9	TSS = 9
	MSS = 6	MSS = 7
	Blue 60 %	Blue 60 %
	Black 18 %	Black 19 %
	Red 8 %	Red 6 %
	Gray 2 %	Gray 6 %
	Yellow 4 %	Yellow 4 %
	Green 4 %	Green 2 %
	Purple 2 %	Pink 2 %
	Brown 2 %	Midnight blue
Scared	TSS = 8	2 %
	MSS = 5	TSS = 8
		MSS = 5
	Red 44 %	Red 33 %

Table 7 (continued)

Word	Sample A	Sample B
	Black 30 %	Black 33 %
	Blue 8 %	Blue 13 %
	Yellow 4 %	Yellow 8 %
	White 4 %	White 4 %
	Green 2 %	Green 6 %
	Orange 4 %	Orange 2 %
	Purple 2 %	TSS = 7
	Brown 2 %	MSS = 6
	TSS = 9	
	MSS = 6	
Shamed	Red 21 %	Red 29 %
	Blue 16 %	Blue 14 %
	Gray 16 %	Gray 12 %
	Black 13 %	Black 14 %
	Yellow 12 %	Yellow 10 %
	Green 12 %	Green 8 %
	Purple 2 %	Purple 2 %
	Orange 2 %	Orange 2 %
	Pink 2 %	Brown 4 %
	Dark Gray 2 %	White 2 %
	Coffee black 2 %	Tan 2 %
	TSS = 11	TSS = 11
	MSS = 6	MSS = 7
Suspicious	Red 34 %	Red 38 %
	Green 14 %	Green 16 %
	Black 16 %	Black 12 %
	Gray 14 %	Gray 12 %
	Blue 6 %	Blue 10 %
	Orange 10 %	Orange 4 %
	Purple 2 %	Purple 4 %
	White 2 %	Yellow 2 %
	Brown 2 %	Dark orange 2 %
	TSS = 9	TSS = 9
	MSS = 6	MSS = 7
Tense	Red 41 %	Red 41 %
	Black 21 %	Black 14 %
	Green 9 %	Green 8 %
	Gray 6 %	Gray 8 %
	Blue 7 %	Blue 4 %
	Orange 6 %	Orange 6 %
	Brown 2 %	Brown 8 %
	White 2 %	White 4 %
	Yellow 4 %	Purple 2 %
	Purple 2 %	Tan 2 %
	TSS = 10	Navy 2 %
	MSS = 7	TSS = 11
		MSS = 8
Terrified	Red 41 %	Red 34 %
	Black 37 %	Black 34 %

Table 7 (continued)

Word	Sample A	Sample B
	Blue 10 %	Blue 8 %
	Gray 4 %	Gray 8 %
	Green 6 %	Green 6 %
	White 2 %	White 4 %
	TSS = 6	Yellow 2 %
	MSS = 5	Orange 2 %
		Deep purple 2 %
		TSS = 9
		MSS = 6
Troubled	Red 33 %	Red 30 %
	Blue 16 %	Blue 18 %
	Gray 12 %	Gray 14 %
	Green 14 %	Green 12 %
	Black 12 %	Black 14 %
	Brown 4 %	Brown 6 %
	Orange 4 %	Yellow 2 %
	White 2 %	Pink 2 %
	Purple 2 %	Dark gray 2 %
	Silver 2 %	TSS = 9
	TSS = 10	MSS = 6
	MSS = 7	
Unhappy	Blue 38 %	Blue 44 %
	Black 20 %	Black 18 %
	Gray 18 %	Gray 12 %
	Red 10 %	Red 12 %
	Yellow 2 %	Yellow 6 %
	Brown 4 %	Brown 4 %
	Orange 2 %	Orange 2 %
	Green 4 %	White 2 %
	Purple 2 %	TSS = 8
	TSS = 9	MSS = 6
	MSS = 6	
Upset	Blue 41 %	Blue 41 %
	Red 29 %	Red 25 %
	Black 12 %	Black 16 %
	Gray 10 %	Gray 6 %
	Brown 2 %	Brown 4 %
	Purple 2 %	Yellow 2 %
	Orange 2 %	Green 2 %
	Navy 2 %	Dark red 2 %
	TSS = 8	Peach 2 %
	MSS = 4	TSS = 9
		MSS = 5
Negative Emotion-Laden		
Abduction	Black 45 %	Black 43 %
	Red 21 %	Red 25 %
	Green 8 %	Green 12 %
	Yellow 6 %	Yellow 6 %
	Blue 6 %	Blue 4 %

Table 7 (continued)

Word	Sample A	Sample B
Abortion	Gray 4 %	Gray 2 %
	Brown 2 %	Brown 4 %
	Orange 2 %	Orange 4 %
	Pink 2 %	TSS = 8
	Silver 2 %	MSS = 7
	Dark red 2 %	
	TSS = 11	
	MSS = 6	
	Red 54 %	Red 46 %
	Black 20 %	Black 28 %
	Blue 8 %	Blue 4 %
	White 4 %	White 6 %
	Gray 2 %	Gray 6 %
	Yellow 4 %	Yellow 4 %
Pink 4 %	Pink 2 %	
Abuse	Dark red 2 %	Green 4 %
	Brown 2 %	TSS = 8
	TSS = 9	MSS = 7
	MSS = 6	
	Red 47 %	Red 49 %
	Black 37 %	Black 41 %
	Blue 6 %	Blue 2 %
	Gray 6 %	Gray 2 %
	White 2 %	Green 4 %
	Purple 2 %	Brown 2 %
Bees	TSS = 6	TSS = 6
	MSS = 4	MSS = 3
	Yellow 100 %	Yellow 98 %
Bloody	TSS = 1	Black 2 %
	MSS = 1	TSS = 2
		MSS = 1
	Red 94 %	Red 98 %
	Wine red 2 %	Crimson 2 %
Burial	Black 2 %	TSS = 2
	Blue 2 %	MSS = 1
	TSS = 4	
	MSS = 1	
	Black 49 %	Black 44 %
	Brown 37 %	Brown 46 %
	Gray 10 %	Gray 6 %
Cancer	Red 2 %	Red 2 %
	Dark brown 2 %	White 2 %
	TSS = 5	TSS = 5
	MSS = 3	MSS = 3
	Black 32 %	Black 34 %
	Pink 18 %	Pink 23 %
	Red 22 %	Red 17 %
	White 4 %	White 9 %
	Yellow 6 %	Yellow 4 %

Table 7 (continued)

Word	Sample A	Sample B
Cemetery	Brown 4 %	Brown 5 %
	Blue 6 %	Blue 2 %
	Gray 2 %	Gray 4 %
	Orange 4 %	Tan 2 %
	Green 2 %	TSS = 9
	TSS = 10	MSS = 7
	MSS = 8	
	Black 60 %	Black 49 %
	Gray 30 %	Gray 35 %
	White 4 %	White 8 %
	Brown 2 %	Brown 2 %
	Green 4 %	Forrest green 2 %
	TSS = 5	Silver 2 %
	MSS = 4	Red 2 %
Coffin		TSS = 7
		MSS = 3
	Brown 56 %	Brown 50 %
	Black 36 %	Black 42 %
	Orange 2 %	Gray 4 %
	Tan 2 %	Silver 2 %
	Magenta 2 %	Mahogany 2 %
	Cream 2 %	TSS = 5
	TSS = 6	MSS = 3
	MSS = 2	
Corpse	Black 53 %	Black 44 %
	White 17 %	White 19 %
	Gray 12 %	Gray 15 %
	Brown 4 %	Brown 8 %
	Blue 6 %	Blue 4 %
	Red 6 %	Red 4 %
	Yellow 2 %	Pink 2 %
Crash	TSS = 7	Red 2 %
	MSS = 6	White 2 %
		TSS = 9
		MSS = 6
	Red 51 %	Red 54 %
	Black 21 %	Black 30 %
	Gray 10 %	Gray 4 %
	Blue 4 %	Blue 6 %
	Brown 2 %	Brown 4 %
	Yellow 2 %	Yellow 2 %
Criminal	Green 6 %	TSS = 6
	Purple 2 %	MSS = 5
	Orange 2 %	
	TSS = 9	
	MSS = 5	
	Black 54 %	Black 58 %
	Orange 14 %	Orange 10 %
Red 8 %	Red 14 %	

Table 7 (continued)

Word	Sample A	Sample B
Crisis	Gray 10 %	Gray 8 %
	White 6 %	White 2 %
	Brown 4 %	Brown 4 %
	Blue 2 %	Green 4 %
	Pink 2 %	TSS = 7
	TSS = 8	MSS = 6
	MSS = 6	
	Red 55 %	Red 62 %
	Black 21 %	Black 16 %
	Blue 4 %	Blue 10 %
	Gray 10 %	Gray 4 %
	Orange 2 %	Orange 2 %
	Green 4 %	Yellow 4 %
	Brown 2 %	Beige 2 %
Dark red 2 %	TSS = 7	
TSS = 8	MSS = 5	
MSS = 5		
Danger	Red 86 %	Red 78 %
	Black 8 %	Black 10 %
	Orange 2 %	Orange 6 %
	Yellow 4 %	Yellow 2 %
	TSS = 4	Dark red 2 %
	MSS = 3	TSS = 5
Dead		MSS = 3
	Black 75 %	Black 77 %
	Red 10 %	Red 13 %
	White 4 %	White 2 %
	Gray 2 %	Gray 2 %
	Brown 2 %	Brown 2 %
	Blue 4 %	Green 4 %
	Purple 2 %	TSS = 6
TSS = 7	MSS = 3	
MSS = 4		
Death	Black 88 %	Black 84 %
	Red 10 %	Red 12 %
	Orange 2 %	White 2 %
	TSS = 3	Gray 2 %
	MSS = 2	TSS = 4
Demon		MSS = 2
	Red 63 %	Red 71 %
	Black 31 %	Black 25 %
	Blue 2 %	Gray 2 %
	Purple 2 %	Green 2 %
	Brown 2 %	TSS = 4
	TSS = 5	MSS = 2
MSS = 2		
Disaster	Black 38 %	Black 42 %
	Red 34 %	Red 28 %
	Gray 14 %	Gray 8 %

Table 7 (continued)

Word	Sample A	Sample B
Divorce	Brown 8 %	Brown 10 %
	Blue 4 %	Blue 8 %
	Maroon 2 %	Green 2 %
	TSS = 6	Dark gray 2 %
	MSS = 5	TSS = 7
		MSS = 5
	Black 48 %	Black 45 %
	Red 28 %	Red 23 %
	Blue 8 %	Blue 14 %
	Green 8 %	Green 6 %
Funeral	Gray 4 %	Gray 6 %
	Brown 2 %	Brown 4 %
	White 2 %	Dark brown 2 %
	TSS = 7	TSS = 6
	MSS = 5	MSS = 5
	Black 79 %	Black 86 %
	Gray 9 %	Gray 4 %
	Brown 6 %	Brown 8 %
	White 4 %	Red 2 %
	Navy 2 %	TSS = 4
TSS = 5	MSS = 3	
MSS = 4		
Gun	Black 76 %	Black 71 %
	Silver 4 %	Silver 14 %
	Gray 10 %	Gray 6 %
	Pink 2 %	Pink 2 %
	Blue 2 %	Brown 6 %
	Red 2 %	TSS = 5
	TSS = 6	MSS = 4
	MSS = 3	
Hell	Red 76 %	Red 84 %
	Black 14 %	Black 12 %
	White 4 %	Blue 2 %
	Green 2 %	Dark red 2 %
	Gray 2 %	TSS = 4
	Orange 2 %	MSS = 2
	TSS = 6	
	MSS = 3	
Illness	Green 44 %	Green 42 %
	Red 23 %	Red 23 %
	Black 9 %	Black 17 %
	Blue 8 %	Blue 10 %
	Gray 6 %	Gray 4 %
	Yellow 6 %	Yellow 2 %
	White 2 %	Pink 2 %
	Brown 2 %	TSS = 7
TSS = 8	MSS = 5	
MSS = 6		
Infection	Red 41 %	Red 38 %

Table 7 (continued)

Word	Sample A	Sample B
	Green 25 %	Green 22 %
	Black 10 %	Black 16 %
	Brown 10 %	Brown 6 %
	White 4 %	White 6 %
	Yellow 4 %	Yellow 4 %
	Pink 2 %	Pink 4 %
	Gray 4 %	Blue 2 %
	TSS = 8	Dark magenta 2 %
	MSS = 7	TSS = 9
		MSS = 7
Injury	Red 57 %	Red 66 %
	Black 15 %	Black 14 %
	Blue 6 %	Blue 4 %
	Brown 8 %	Brown 2 %
	White 4 %	White 2 %
	Purple 2 %	Purple 2 %
	Orange 2 %	Orange 2 %
	Pink 6 %	Gray 4 %
	TSS = 8	Green 2 %
	MSS = 6	Dark red 2 %
		TSS = 10
		MSS = 4
Insult	Red 33 %	Red 25 %
	Black 25 %	Black 27 %
	Green 12 %	Green 16 %
	Gray 4 %	Gray 12 %
	Blue 10 %	Blue 4 %
	Brown 6 %	Brown 8 %
	Purple 4 %	Purple 2 %
	Silver 2 %	White 4 %
	Tan 2 %	Yellow 2 %
	Magenta 2 %	TSS = 9
	TSS = 10	MSS = 7
	MSS = 7	
Jail	Gray 41 %	Gray 41 %
	Black 33 %	Black 29 %
	Orange 10 %	Orange 12 %
	Silver 8 %	Silver 14 %
	Brown 6 %	Red 2 %
	Blue 2 %	Black and white 2 %
	TSS = 6	TSS = 6
	MSS = 5	MSS = 4
Killer	Red 56 %	Red 52 %
	Black 38 %	Black 34 %
	White 2 %	White 4 %
	Scarlett 2 %	Gray 4 %
	Brown 2 %	Blue 2 %
	TSS = 5	Dark red 2 %
	MSS = 2	Charcoal 2 %

Table 7 (continued)

Word	Sample A	Sample B
		TSS = 7
		MSS = 4
Lie	Black 21 %	Black 24 %
	Red 22 %	Red 22 %
	White 22 %	White 27 %
	Green 12 %	Green 13 %
	Blue 10 %	Blue 5 %
	Gray 2 %	Gray 3 %
	Orange 2 %	Yellow 2 %
	Brown 2 %	Purple 2 %
	TSS = 8	Maroon 2 %
	MSS = 5	TSS = 9
		MSS = 6
Massacre	Red 76 %	Red 82 %
	Black 16 %	Black 10 %
	Blue 2 %	Blue 4 %
	White 2 %	Green 2 %
	Gold 2 %	Brown 2 %
	Dark red 2 %	TSS = 5
	TSS = 6	MSS = 3
	MSS = 2	
Morbid	Black 72 %	Black 64 %
	Red 12 %	Red 10 %
	Gray 6 %	Gray 12 %
	White 2 %	White 6 %
	Brown 4 %	Brown 2 %
	Green 2 %	Green 2 %
	Yellow 2 %	Blue 4 %
	TSS = 7	TSS = 7
	MSS = 4	MSS = 5
Nightmare	Black 70 %	Black 78 %
	Red 14 %	Red 10 %
	Blue 6 %	Blue 4 %
	Gray 4 %	Gray 2 %
	Green 6 %	Purple 4 %
	TSS = 5	Brown 2 %
	MSS = 5	TSS = 6
		MSS = 4
Pain	Red 74 %	Red 68 %
	Black 6 %	Black 10 %
	Blue 8 %	Blue 4 %
	Yellow 2 %	Yellow 4 %
	White 4 %	Gray 4 %
	Cream 2 %	Green 4 %
	Orange 2 %	Purple 2 %
	Dark red 2 %	Brown 2 %
	TSS = 8	Flesh 2 %
	MSS = 4	TSS = 9
		MSS = 6

Table 7 (continued)

Word	Sample A	Sample B
Poison	Black 32 %	Black 37 %
	Green 27 %	Green 27 %
	Red 29 %	Red 22 %
	Yellow 2 %	Yellow 4 %
	Blue 2 %	Blue 2 %
	Clear 2 %	Clear 2 %
	White 4 %	Purple 4 %
	Lime green 2 %	Gray 2 %
	TSS = 8	TSS = 8
	MSS = 4	MSS = 5
Pollute	Gray 36 %	Gray 41 %
	Black 38 %	Black 35 %
	Green 8 %	Green 12 %
	Brown 12 %	Brown 8 %
	White 2 %	Blue 2 %
	Yellow 2 %	Red 2 %
	Dark gray 2 %	TSS = 6
	TSS = 7	MSS = 4
	MSS = 4	
Poverty	Black 31 %	Black 35 %
	Brown 25 %	Brown 23 %
	Gray 16 %	Gray 18 %
	Blue 10 %	Blue 6 %
	Green 8 %	Green 4 %
	Red 2 %	Red 6 %
	Orange 2 %	Orange 4 %
	Pink 2 %	Yellow 2 %
	Silver 2 %	Gold 2 %
	Crimson 2 %	TSS = 9
TSS = 10	MSS = 7	
MSS = 5		
Punishment	Red 52 %	Red 46 %
	Black 34 %	Black 30 %
	Blue 4 %	Blue 6 %
	Gray 2 %	Gray 4 %
	Purple 2 %	Purple 2 %
	Green 4 %	White 4 %
	Silver 2 %	Brown 4 %
	TSS = 7	Yellow 2 %
	MSS = 4	Dark red 2 %
		TSS = 9
Rape	Red 57 %	Red 57 %
	Black 37 %	Black 37 %
	Gray 4 %	White 2 %
	Blue 2 %	Purple 2 %
	TSS = 4	Brown 2 %
	MSS = 3	TSS = 5
	MSS = 2	

Table 7 (continued)

Word	Sample A	Sample B	
Robber	Black 84 %	Black 82 %	
	Red 8 %	Red 12 %	
	Green 4 %	White 2 %	
	Blue 2 %	Gray 2 %	
	Brown 2 %	Beige 2 %	
	TSS = 5	TSS = 5	
	MSS = 3	MSS = 2	
	Sick	Green 59 %	Green 60 %
		Blue 6 %	Blue 10 %
		Red 9 %	Red 4 %
Brown 6 %		Brown 6 %	
Gray 6 %		Gray 4 %	
Black 2 %		Black 6 %	
White 4 %		White 2 %	
Orange 4 %		Yellow 6 %	
Tan 2 %		Orange 2 %	
Pale green 2 %		TSS = 9	
TSS = 10	MSS = 7		
MSS = 7			
Sickness	Green 44 %	Green 48 %	
	Red 16 %	Red 19 %	
	Black 14 %	Black 9 %	
	Blue 10 %	Blue 6 %	
	Yellow 4 %	Yellow 8 %	
	Brown 4 %	Brown 6 %	
	Gray 4 %	White 2 %	
	Beige 2 %	Dark blue 2 %	
	Pale green 2 %	TSS = 8	
	TSS = 9	MSS = 6	
MSS = 7			
Slave	Black 70 %	Black 66 %	
	Brown 10 %	Brown 14 %	
	Red 8 %	Red 8 %	
	Gray 6 %	Gray 2 %	
	Green 2 %	Green 4 %	
	Yellow 2 %	Yellow 2 %	
	Blue 2 %	White 4 %	
	TSS = 7	TSS = 7	
	MSS = 4	MSS = 5	
Suicide	Red 47 %	Red 44 %	
	Black 43 %	Black 42 %	
	Blue 4 %	Blue 6 %	
	White 2 %	White 2 %	
	Green 2 %	Gray 6 %	
	Orange 2 %	TSS = 5	
TSS = 6	MSS = 4		
MSS = 3			
Tomb	Black 37 %	Black 42 %	
	Gray 27 %	Gray 29 %	

Table 7 (continued)

Word	Sample A	Sample B
	Brown 20 %	Brown 13 %
	Yellow 4 %	Yellow 4 %
	Red 2 %	Red 4 %
	Gold 4 %	Beige 2 %
	Beige 2 %	Blue 2 %
	Green 2 %	Tan 2 %
	Sandstone 2 %	Burlywood 2 %
	TSS = 9	TSS = 9
	MSS = 5	MSS = 5
Toothache	White 45 %	White 47 %
	Red 34 %	Red 31 %
	Black 6 %	Black 10 %
	Yellow 6 %	Yellow 2 %
	Gray 3 %	Gray 2 %
	Green 2 %	Blue 4 %
	Brown 2 %	Pale yellow 2 %
	Dark red 2 %	Purple 2 %
	TSS = 8	TSS = 8
	MSS = 5	MSS = 4
Tomado	Gray 47 %	Gray 51 %
	Black 17 %	Black 19 %
	Blue 14 %	Blue 10 %
	Brown 6 %	Brown 10 %
	Red 8 %	Red 4 %
	White 2 %	White 2 %
	Yellow 2 %	Purple 2 %
	Green 2 %	Dark gray 2 %
	Orange 2 %	TSS = 8
	TSS = 9	MSS = 5
	MSS = 5	
Tragedy	Red 38 %	Red 35 %
	Black 32 %	Black 41 %
	Blue 10 %	Blue 14 %
	Gray 10 %	Gray 4 %
	Yellow 2 %	Yellow 2 %
	White 4 %	Purple 2 %
	Brown 2 %	Orange 2 %
	Burgundy 2 %	TSS = 7
	TSS = 8	MSS = 4
	MSS = 5	
Trash	Black 46 %	Black 53 %
	Gray 18 %	Gray 15 %
	Brown 14 %	Brown 12 %
	White 12 %	White 8 %
	Green 8 %	Green 10 %
	Dark green 2 %	Maroon 2 %
	TSS = 6	TSS = 6
	MSS = 5	MSS = 5
Trauma	Red 53 %	Red 49 %

Table 7 (continued)

Word	Sample A	Sample B
	Black 13 %	Black 21 %
	White 6 %	White 10 %
	Blue 10 %	Blue 6 %
	Gray 10 %	Gray 6 %
	Green 4 %	Green 4 %
	Orange 2 %	Purple 2 %
	Navy 2 %	Dark blue 2 %
	TSS = 8	TSS = 8
	MSS = 6	MSS = 6
Ugly	Brown 38 %	Brown 33 %
	Black 30 %	Black 23 %
	Gray 6 %	Gray 10 %
	Green 6 %	Green 10 %
	White 6 %	White 2 %
	Blue 4 %	Blue 4 %
	Yellow 2 %	Yellow 6 %
	Purple 2 %	Purple 4 %
	Orange 2 %	Orange 4 %
	Red 4 %	Silver 2 %
	Chartreuse 2 %	Fuchsia 2 %
	TSS = 11	TSS = 11
	MSS = 7	MSS = 8
Ulcer	Red 32 %	Red 33 %
	Black 22 %	Black 23 %
	Brown 10 %	Brown 8 %
	White 8 %	White 10 %
	Yellow 6 %	Yellow 6 %
	Pink 4 %	Pink 8 %
	Blue 6 %	Blue 2 %
	Gray 4 %	Gray 4 %
	Peach 2 %	Peach 2 %
	Orange 4 %	Clear 2 %
	Crimson 2 %	Green 2 %
	TSS = 11	TSS = 11
	MSS = 9	MSS = 7
Unfaithful	Black 31 %	Black 39 %
	Red 29 %	Red 23 %
	Blue 10 %	Blue 6 %
	Green 4 %	Green 8 %
	Gray 8 %	Gray 2 %
	Orange 4 %	Orange 6 %
	Yellow 2 %	Yellow 6 %
	White 4 %	White 2 %
	Purple 2 %	Purple 2 %
	Pink 4 %	Brown 6 %
	Fire brick 2 %	TSS = 10
	TSS = 11	MSS = 7
	MSS = 8	
Victim	Red 46 %	Red 40 %

Table 7 (continued)

Word	Sample A	Sample B
	Black 14 %	Black 16 %
	White 14 %	White 10 %
	Gray 12 %	Gray 12 %
	Blue 6 %	Blue 10 %
	Brown 2 %	Purple 4 %
	Pink 2 %	Brown 2 %
	Violet 2 %	Yellow 2 %
	Midnight blue 2 %	Magenta 2 %
	TSS = 9	Indigo 2 %
	MSS = 5	TSS = 10
		MS = 6
Violent	Red 58 %	Red 63 %
	Black 22 %	Black 23 %
	Purple 10 %	Purple 6 %
	Violet 10 %	Violet 4 %
	TSS = 4	Blue 4 %
		MSS = 5
	MSS = 4	TSS = 5
War	Red 56 %	Red 61 %
	Black 10 %	Black 12 %
	Green 14 %	Green 6 %
	Brown 10 %	Brown 8 %
	Gray 8 %	Gray 4 %
	Blue 2 %	Blue 6 %
	TSS = 6	Dark red 2 %
	MSS = 5	TSS = 7
		MSS = 6
Positive Emotion		
Admired	Red 39 %	Red 46 %
	Blue 12 %	Blue 16 %
	Pink 15 %	Pink 12 %
	Yellow 14 %	Yellow 10 %
	Orange 4 %	Orange 4 %
	White 6 %	White 2 %
	Black 2 %	Black 2 %
	Green 2 %	Green 2 %
	Light cyan 2 %	Gold 4 %
	Silver 2 %	Violet 2 %
	Sky blue 2 %	TSS = 10
	TSS = 11	MSS = 6
	MSS = 6	
Affection	Red 51 %	Red 45 %
	Pink 29 %	Pink 27 %
	Yellow 6 %	Yellow 10 %
	Blue 8 %	Blue 8 %
	Purple 2 %	Purple 4 %
	Light blue 2 %	White 4 %
	Gold 2 %	Green 2 %
	TSS = 7	TSS = 7

Table 7 (continued)

Word	Sample A	Sample B
	MSS = 4	MSS = 6
Aroused	Red 63 %	Red 69 %
	Pink 14 %	Pink 9 %
	Yellow 6 %	Yellow 9 %
	White 6 %	White 4 %
	Green 2 %	Green 4 %
	Brown 2 %	Brown 2 %
	Black 4 %	Blue-green 2 %
	Orange 2 %	TSS = 7
	Hot pink 2 %	MSS = 5
	TSS = 9	
	MSS = 5	
Astonished	Yellow 22 %	Yellow 25 %
	White 20 %	White 22 %
	Red 20 %	Red 16 %
	Blue 10 %	Blue 12 %
	Orange 12 %	Orange 6 %
	Green 4 %	Green 8 %
	Black 4 %	Black 2 %
	Baby Blue 2 %	Gray 4 %
	Purple 2 %	Brown 2 %
	Cream/ivory 2 %	Light blue 2 %
	Chartreuse 2 %	Milk white 2 %
	TSS = 11	TSS = 11
	MSS = 7	MSS = 7
Beautiful	Pink 33 %	Pink 37 %
	Blue 18 %	Blue 22 %
	Yellow 12 %	Yellow 6 %
	Purple 10 %	Purple 6 %
	White 4 %	White 8 %
	Red 4 %	Red 8 %
	Black 4 %	Black 6 %
	Green 6 %	Green 2 %
	Brown 4 %	Gold 4 %
	Sky blue 2 %	Sky blue 2 %
	Orange 2 %	TSS = 10
	Silver 2 %	MSS = 8
	TSS = 12	
	MSS = 9	
Brave	Red 34 %	Red 38 %
	Blue 30 %	Blue 26 %
	Gold 6 %	Gold 10 %
	Yellow 6 %	Yellow 4 %
	Brown 8 %	Brown 2 %
	Black 4 %	Black 4 %
	White 2 %	White 4 %
	Orange 2 %	Orange 2 %
	Purple 4 %	Purple 2 %
	Silver 2 %	Green 6 %

Table 7 (continued)

Word	Sample A	Sample B
Cheer	Bronze 2 %	Violet 2 %
	TSS = 11	TSS = 11
	MSS = 7	MSS = 7
	Yellow 39 %	Yellow 37 %
	Red 25 %	Red 22 %
	Blue 8 %	Blue 14 %
	Pink 6 %	Pink 10 %
	Orange 8 %	Orange 4 %
	White 2 %	White 8 %
	Purple 6 %	Purple 2 %
	Green 4 %	Green 2 %
	Maroon 2 %	TSS = 8
	TSS = 9	MSS = 6
MSS = 7		
Confident	Red 29 %	Red 33 %
	Blue 25 %	Blue 25 %
	Yellow 14 %	Yellow 12 %
	Purple 8 %	Purple 4 %
	White 2 %	White 6 %
	Pink 4 %	Pink 4 %
	Green 2 %	Green 6 %
	Black 4 %	Black 2 %
	Gold 8 %	Orange 6 %
	Violet 4 %	Turquoise 2 %
	TSS = 10	TSS = 10
	MSS = 8	MSS = 8
	Elated	Yellow 24 %
White 22 %		White 20 %
Blue 16 %		Blue 26 %
Red 12 %		Red 6 %
Pink 8 %		Pink 4 %
Purple 6 %		Purple 4 %
Gray 2 %		Gray 8 %
Green 4 %		Green 6 %
Orange 2 %		Orange 2 %
Baby blue 2 %		Brown 4 %
TSS = 10		Black 2 %
MSS = 7		TSS = 11
		MSS = 9
Friendly	Yellow 38 %	Yellow 44 %
	Blue 20 %	Blue 16 %
	Pink 18 %	Pink 14 %
	Red 8 %	Red 14 %
	Green 8 %	Green 6 %
	Orange 2 %	Orange 4 %
	Purple 6 %	Peach 2 %
	TSS = 7	TSS = 7
	MSS = 6	MSS = 6

Table 7 (continued)

Word	Sample A	Sample B	
Grateful	Blue 20 %	Blue 23 %	
	Yellow 16 %	Yellow 18 %	
	Green 16 %	Green 14 %	
	White 10 %	White 6 %	
	Purple 4 %	Purple 12 %	
	Red 8 %	Red 6 %	
	Pink 10 %	Pink 4 %	
	Orange 4 %	Orange 8 %	
	Gray 4 %	Gray 6 %	
	Lilac 2 %	Beige 2 %	
	Cream 2 %	Lime green 2 %	
	Coral 2 %	TSS = 11	
	Black 2 %	MSS = 9	
TSS = 13			
MSS = 9			
Happy	Yellow 54 %	Yellow 52 %	
	Red 14 %	Red 20 %	
	Pink 12 %	Pink 10 %	
	Blue 10 %	Blue 6 %	
	Green 4 %	Green 8 %	
	White 2 %	White 2 %	
	Purple 4 %	Bright red 2 %	
	TSS = 7	TSS = 7	
	MSS = 6	MSS = 5	
	Hopeful	Blue 26 %	Blue 33 %
		White 26 %	White 31 %
		Yellow 22 %	Yellow 15 %
		Pink 10 %	Pink 8 %
Red 8 %		Red 2 %	
Orange 2 %		Orange 4 %	
Periwinkle 2 %		Green 2 %	
Light blue 2 %		Magenta 2 %	
Silver 2 %		Antique white 2 %	
TSS = 9		TSS = 9	
MSS = 5		MSS = 5	
Inspired		Yellow 23 %	Yellow 22 %
		White 17 %	White 20 %
	Blue 21 %	Blue 16 %	
	Red 17 %	Red 12 %	
	Pink 4 %	Pink 6 %	
	Purple 2 %	Purple 8 %	
	Green 6 %	Green 2 %	
	Lavender 2 %	Lavender 2 %	
	Black 2 %	Orange 4 %	
	Violet 2 %	Gold 2 %	
	Peach 2 %	Light blue 2 %	
	Teal 2 %	Blue-green 2 %	
	TSS = 12	Baby blue 2 %	

Table 7 (continued)

Word	Sample A	Sample B
Joy	MSS = 6	TSS = 13
		MSS = 7
	Yellow 24 %	Yellow 30 %
	Red 22 %	Red 20 %
	Pink 12 %	Pink 14 %
	Blue 16 %	Blue 8 %
	White 6 %	White 12 %
	Green 6 %	Green 8 %
	Purple 6 %	Purple 2 %
	Orange 4 %	Orange 4 %
	Gold 2 %	Turquoise 2 %
	Silver 2 %	TSS = 9
	TSS = 10	MSS = 7
Joyful	MSS = 8	
	Yellow 39 %	Yellow 35 %
	Blue 24 %	Blue 29 %
	Red 17 %	Red 24 %
	White 8 %	White 4 %
	Green 2 %	Green 4 %
	Pink 6 %	Black 4 %
	Orange 2 %	Gold 2 %
	Periwinkle 2 %	TSS = 7
	TSS = 8	MSS = 5
	MSS = 5	
	Yellow 30 %	Yellow 24 %
	Blue 18 %	Blue 21 %
Pink 22 %	Pink 18 %	
Green 12 %	Green 14 %	
White 6 %	White 10 %	
Red 6 %	Red 4 %	
Purple 6 %	Purple 2 %	
Sea foam green 2 %	Orange 4 %	
TSS = 8	Gray 2 %	
MSS = 7	Charcoal 2 %	
Love		TSS = 10
		MSS = 7
	Red 74 %	Red 78 %
	Pink 10 %	Pink 8 %
	White 6 %	White 2 %
	Blue 4 %	Blue 4 %
	Purple 2 %	Purple 2 %
	Green 2 %	Yellow 4 %
	Gold 2 %	Orange 2 %
	TSS = 7	TSS = 7
	MSS = 4	MSS = 4
	Red 72 %	Red 65 %
	Pink 8 %	Pink 8 %
Black 6 %	Black 10 %	

Table 7 (continued)

Word	Sample A	Sample B
Merry	Purple 2 %	Purple 6 %
	Yellow 2 %	Yellow 4 %
	Orange 2 %	Orange 2 %
	Violet 4 %	Dark red 2 %
	Blue 2 %	White 2 %
	Brown 2 %	Green 2 %
	TSS = 9	TSS = 9
	MSS = 4	MSS = 5
	Red 66 %	Red 63 %
	Green 14 %	Green 12 %
	Yellow 8 %	Yellow 12 %
	Blue 4 %	Blue 8 %
	Pink 4 %	Salmon 2 %
Nice	Purple 2 %	Gray 2 %
	Orange 2 %	TSS = 6
	TSS = 7	MSS = 4
	MSS = 5	
	Yellow 26 %	Yellow 33 %
	Blue 26 %	Blue 22 %
	Pink 16 %	Pink 17 %
	White 10 %	White 16 %
	Red 8 %	Red 2 %
	Purple 2 %	Purple 2 %
	Black 2 %	Green 4 %
	Gold 4 %	Black 2 %
	Silver 2 %	Light blue 2 %
Lilac 2 %	TSS = 9	
Indigo 2 %	MSS = 5	
Passion	TSS = 11	
	MSS = 6	
	Red 79 %	Red 76 %
	Pink 4 %	Pink 8 %
	White 6 %	White 2 %
	Blue 4 %	Blue 4 %
	Yellow 4 %	Yellow 2 %
	Dark red 2 %	Purple 4 %
	Scarlett 2 %	Green 2 %
	TSS = 7	Black 2 %
	MSS = 5	TSS = 8
		MSS = 4
	Blue 24 %	Blue 31 %
Red 22 %	Red 20 %	
Yellow 18 %	Yellow 14 %	
White 8 %	White 12 %	
Purple 10 %	Purple 6 %	
Orange 4 %	Orange 6 %	
Green 2 %	Green 6 %	
Black 4 %	Gold 4 %	

Table 7 (continued)

Word	Sample A	Sample B	
Relaxed	Pink 4 %	Beige 2 %	
	Peach 2 %	TSS = 10	
	Misty rose 2 %	MSS = 8	
	TSS = 11		
	MSS = 8		
	Blue 42 %	Blue 42 %	
	White 15 %	White 12 %	
	Yellow 8 %	Yellow 16 %	
	Pink 8 %	Pink 4 %	
	Green 9 %	Green 2 %	
	Red 4 %	Red 4 %	
	Light blue 2 %	Light blue 4 %	
	Sky blue 4 %	Purple 6 %	
	Tan (1)2 %	Tan 2 %	
	Lavender 2 %	Baby blue 2 %	
	Gray 2 %	Peach 2 %	
	Brown 2 %	Off white 2 %	
TSS = 12	Forest green 2 %		
MSS = 7	TSS = 13		
Safe		MSS = 7	
	White 29 %	White 32 %	
	Blue 33 %	Blue 26 %	
	Yellow 6 %	Yellow 13 %	
	Green 10 %	Green 6 %	
	Gray 4 %	Gray 7 %	
	Red 6 %	Red 4 %	
	Black 2 %	Black 6 %	
	Pink 4 %	Purple 2 %	
	Orange 2 %	Brown 2 %	
	Gold 2 %	Pale blue 2 %	
	Beige 2 %	TSS = 10	
	TSS = 11		
	MSS = 7	MSS = 7	
	Satisfied	Blue 36 %	Blue 30 %
		Red 20 %	Red 16 %
		Yellow 14 %	Yellow 14 %
White 8 %		White 14 %	
Green 6 %		Green 12 %	
Pink 4 %		Pink 10 %	
Orange 6 %		Orange 2 %	
Lime green 2 %		Black 2 %	
Gold 2 %		TSS = 8	
Purple 2 %		MSS = 6	
TSS = 10			
MSS = 7			
Secure		Blue 24 %	Blue 30 %
		White 25 %	White 20 %
		Red 16 %	Red 12 %
		Yellow 12 %	Yellow 6 %

Table 7 (continued)

Word	Sample A	Sample B	
Surprised	Green 6 %	Green 10 %	
	Gray 4 %	Gray 6 %	
	Black 2 %	Black 4 %	
	Silver 4 %	Gold 6 %	
	Sapphire 2 %	Pink 2 %	
	Light blue 2 %	Salmon 2 %	
	Purple 2 %	Orange 2 %	
	Brown 2 %	TSS = 11	
	TSS = 12	MSS = 8	
	MSS = 7		
	Red 31 %	Red 33 %	
	Yellow 24 %	Yellow 29 %	
	White 10 %	White 8 %	
	Blue 10 %	Blue 6 %	
	Orange 8 %	Orange 8 %	
	Pink 4 %	Pink 10 %	
	Green 4 %	Green 2 %	
Purple 4 %	Violet 2 %		
Black 2 %	Silver 2 %		
Gold 2 %	TSS = 9		
TSS = 10	MSS = 6		
MSS = 8			
Triumphant	Yellow 27 %	Yellow 24 %	
	Red 25 %	Red 18 %	
	Blue 8 %	Blue 14 %	
	Gold 6 %	Gold 14 %	
	White 8 %	White 4 %	
	Purple 2 %	Purple 8 %	
	Green 6 %	Green 2 %	
	Black 4 %	Black 4 %	
	Brown 2 %	Brown 4 %	
	Pink 2 %	Pink 2 %	
	Gray 6 %	Orange 4 %	
	Silver 4 %	Bronze 2 %	
	TSS = 11	TSS = 12	
	MSS = 8	MSS = 9	
	Positive Emotion-Laden		
	Achievement	Blue 30 %	Blue 24 %
		Gold 32 %	Gold 22 %
	Red 14 %	Red 18 %	
	Yellow 12 %	Yellow 20 %	
	Green 8 %	Green 4 %	
	White 2 %	White 8 %	
	Purple 2 %	Orange 4 %	
	TSS = 7	TSS = 7	
	MSS = 5	MSS = 7	
Adorable	Pink 44 %	Pink 54 %	
	Red 23 %	Red 20 %	
	Blue 15 %	Blue 8 %	

Table 7 (continued)

Word	Sample A	Sample B
	Yellow 4 %	Yellow 8 %
	Green 6 %	Green 2 %
	Brown 2 %	Brown 2 %
	Purple 2 %	White 4 %
	Tan 2 %	Light blue 2 %
	Lavender 2 %	TSS = 8
	TSS = 9	MSS = 5
	MSS = 5	
Baby	Pink 42 %	Pink 34 %
	White 18 %	White 23 %
	Blue 18 %	Blue 21 %
	Yellow 6 %	Yellow 7 %
	Peach 8 %	Peach 4 %
	Black 2 %	Black 6 %
	Brown 2 %	Brown 2 %
	Green 2 %	Red 4 %
	Dodger blue 2 %	TSS = 8
	TSS = 9	MSS = 7
	MSS = 5	
Birthday	Blue 19 %	Blue 28 %
	Pink 19 %	Pink 22 %
	Yellow 23 %	Yellow 16 %
	Red 13 %	Red 18 %
	White 10 %	White 4 %
	Green 8 %	Green 2 %
	Purple 2 %	Purple 6 %
	Black 4 %	Black 2 %
	Orange 2 %	Magenta 2 %
	TSS = 9	TSS = 9
	MSS = 7	MSS = 6
Bouquet	Red 50 %	Red 43 %
	Pink 18 %	Pink 25 %
	White 10 %	White 6 %
	Green 12 %	Green 4 %
	Yellow 6 %	Yellow 6 %
	Blue 2 %	Blue 8 %
	Purple 2 %	Purple 4 %
	TSS = 7	Brown 2 %
	MSS = 5	Orange 2 %
		TSS = 9
		MSS = 7
Cash	Green 90 %	Green 96 %
	Black 2 %	Black 2 %
	Gray 4 %	White 2 %
	Gold 2 %	TSS = 3
	Brown 2 %	MSS = 1
	TSS = 5	
	MSS = 2	
Champion	Gold 39 %	Gold 34 %

Table 7 (continued)

Word	Sample A	Sample B
	Red 23 %	Red 20 %
	Yellow 19 %	Yellow 24 %
	Blue 8 %	Blue 16 %
	White 6 %	White 2 %
	Purple 2 %	Orange 2 %
	Black 2 %	Silver 2 %
	TSS = 7	TSS = 7
	MSS = 5	MSS = 4
Church	White 58 %	White 64 %
	Brown 14 %	Brown 18 %
	Gray 8 %	Gray 4 %
	Red 6 %	Red 6 %
	Black 6 %	Black 2 %
	Yellow 4 %	Yellow 2 %
	Pink 2 %	Purple 4 %
	Gold 2 %	TSS = 7
	TSS = 8	MSS = 5
	MSS = 6	
Diamond	White 76 %	White 65 %
	Silver 6 %	Silver 10 %
	Clear 4 %	Clear 8 %
	Blue 4 %	Blue 2 %
	Yellow 2 %	Yellow 4 %
	Red 2 %	Red 4 %
	Gold 6 %	Black 4 %
	TSS = 7	Pink 2 %
	MSS = 5	Purple 2 %
		TSS = 9
		MSS = 6
Diploma	White 69 %	White 67 %
	Blue 10 %	Blue 8 %
	Black 4 %	Black 10 %
	Gold 4 %	Gold 2 %
	Cream 4 %	Red 6 %
	Gray 2 %	Yellow 2 %
	Purple 2 %	Green 2 %
	Tan 2 %	Silver 2 %
	Copper 2 %	TSS = 9
	Lime green 2 %	MSS = 4
	TSS = 10	
	MSS = 5	
Engaged	White 29 %	White 38 %
	Blue 13 %	Blue 17 %
	Pink 15 %	Pink 8 %
	Gold 10 %	Gold 15 %
	Red 11 %	Red 6 %
	Silver 10 %	Silver 8 %
	Yellow 10 %	Yellow 4 %
	Light blue 2 %	Purple 2 %

Table 7 (continued)

Word	Sample A	Sample B
Freedom	TSS = 8	Orange 2 %
	MSS = 7	TSS = 9
		MSS = 7
	White 33 %	White 26 %
	Blue 25 %	Blue 30 %
	Red 20 %	Red 14 %
	Yellow 8 %	Yellow 8 %
	Green 4 %	Green 10 %
	Black 2 %	Black 6 %
	Brown 4 %	Orange 2 %
	Forrest green 2 %	Gold 2 %
	Royal blue 2 %	Silver 2 %
	TSS = 9	TSS = 9
MSS = 6	MSS = 6	
Friend	Yellow 24 %	Yellow 31 %
	Blue 26 %	Blue 22 %
	Pink 16 %	Pink 12 %
	Green 8 %	Green 10 %
	Red 8 %	Red 4 %
	Purple 4 %	Purple 6 %
	White 2 %	White 6 %
	Brown 4 %	Brown 2 %
	Gray 2 %	Gray 2 %
	Black 4 %	Orange 2 %
	Dark green 2 %	Gold 2 %
	TSS = 11	TSS = 11
	MSS = 8	MSS = 7
Gift	Blue 27 %	Blue 33 %
	Red 25 %	Red 19 %
	Green 16 %	Green 9 %
	Yellow 6 %	Yellow 9 %
	Pink (5)10 %	Pink 4 %
	White (1)2 %	White 8 %
	Purple (2)4 %	Purple 6 %
	Gold (2)4 %	Gold 4 %
	Orange (1)2 %	Orange 4 %
	Silver (2)4 %	Black 2 %
	TSS = 10	Sapphire 2 %
	MSS = 8	TSS = 11
		MSS = 9
God	White 76 %	White 77 %
	Black 4 %	Black 4 %
	Gold 4 %	Gold 9 %
	Red 6 %	Green 4 %
	Blue 4 %	Navy 2 %
	Yellow 2 %	Gray 2 %
	Purple 2 %	Brown 2 %
	Bronze 2 %	TSS = 7
	TSS = 8	MSS = 4

Table 7 (continued)

Word	Sample A	Sample B	
Grin	MSS = 5		
	White 32 %	White 23 %	
	Yellow 20 %	Yellow 21 %	
	Red 16 %	Red 19 %	
	Green 8 %	Green 13 %	
	Pink 10 %	Pink 6 %	
	Blue 2 %	Blue 8 %	
	Gray 4 %	Gray 2 %	
	Orange 2 %	Orange 2 %	
	Peach 2 %	Black 4 %	
	Purple 2 %	Tan 2 %	
	Brown 2 %	TSS = 10	
	TSS = 11	MSS = 7	
MSS = 6			
Heaven	White 68 %	White 76 %	
	Blue 18 %	Blue 14 %	
	Yellow 6 %	Yellow 2 %	
	Gold 2 %	Gold 4 %	
	Green 2 %	Black 2 %	
	Silver 2 %	Orange 2 %	
	Black and white 2 %	TSS = 6	
	TSS = 7	MSS = 3	
	MSS = 3		
	Holiday	Red 47 %	Red 42 %
		Green 31 %	Green 26 %
		Yellow 8 %	Yellow 10 %
		White 4 %	White 8 %
Blue 6 %		Blue 6 %	
Brown 2 %		Brown 2 %	
Gold 2 %		Pink 4 %	
TSS = 7		Orange 2 %	
MSS = 5		TSS = 8	
		MSS = 6	
Jewel		Red 18 %	Red 23 %
		White 16 %	White 18 %
		Blue 20 %	Blue 14 %
	Gold 8 %	Gold 16 %	
	Green 10 %	Green 6 %	
	Purple 12 %	Purple 4 %	
	Pink 4 %	Pink 6 %	
	Yellow 2 %	Yellow 2 %	
	Silver 2 %	Silver 2 %	
	Orange 4 %	Clear 4 %	
	Golden red 2 %	Gray 2 %	
	Ruby 2 %	Lavender 2 %	
	TSS = 12	Sapphire 2 %	
MSS = 8	TSS = 13		
	MSS = 8		
Joke	Yellow 27 %	Yellow 23 %	

Table 7 (continued)

Word	Sample A	Sample B
	Blue 22 %	Blue 19 %
	Red 16 %	Red 21 %
	Green 14 %	Green 17 %
	Orange 8 %	Orange 4 %
	Pink 6 %	Pink 6 %
	White 4 %	White 2 %
	Black 2 %	Black 2 %
	Magenta 2 %	Purple 4 %
	TSS = 9	Azure 2 %
	MSS = 7	TSS = 10
		MSS = 7
Kiss	Red 59 %	Red 67 %
	Pink 29 %	Pink 22 %
	Blue 8 %	Blue 2 %
	Yellow 2 %	White 4 %
	Brown 2 %	Black 2 %
	TSS = 5	Light pink 2 %
	MSS = 3	TSS = 6
		MSS = 3
Laughter	Yellow 45 %	Yellow 39 %
	Red 12 %	Red 19 %
	Blue 12 %	Blue 18 %
	Pink 12 %	Pink 6 %
	White 6 %	White 10 %
	Green 4 %	Green 2 %
	Purple 4 %	Purple 2 %
	Orange 2 %	Gold 2 %
	Sky blue 2 %	Peach orange 2 %
	TSS = 9	TSS = 9
	MSS = 7	MSS = 5
Lucky	Green 52 %	Green 49 %
	Yellow 19 %	Yellow 24 %
	Blue 10 %	Blue 4 %
	Red 6 %	Red 4 %
	White 2 %	White 6 %
	Pink 2 %	Pink 4 %
	Gold 4 %	Gold 2 %
	Gray 2 %	Gray 2 %
	Black 2 %	Purple 2 %
	Orange 2 %	Dark green 2 %
	TSS = 10	TSS = 10
	MSS = 5	MSS = 6
Millionaire	Green 82 %	Green 86 %
	White 6 %	White 2 %
	Blue 2 %	Blue 6 %
	Gold 2 %	Gold 4 %
	Red 4 %	Silver 2 %
	Dark green 2 %	TSS = 5
	Purple 2 %	MSS = 3

Table 7 (continued)

Word	Sample A	Sample B
	TSS = 7	
	MSS = 3	
Miracle	White 46 %	White 49 %
	Blue 16 %	Blue 20 %
	Yellow 12 %	Yellow 6 %
	Gold 8 %	Gold 10 %
	Pink 6 %	Pink 4 %
	Red 2 %	Red 6 %
	Green 4 %	Silver 2 %
	Off-White 2 %	Orange 2 %
	Aqua 2 %	Purple 2 %
	Gray 2 %	TSS = 9
	TSS = 10	MSS = 6
	MSS = 6	
Money	Green 100 %	Green 96 %
	TSS = 1	Brown 2 %
	MSS = 1	Indigo 2 %
		TSS = 3
		MSS = 1
Outdoors	Green 65 %	Green 62 %
	Blue 23 %	Blue 16 %
	White 6 %	White 4 %
	Yellow 2 %	Yellow 8 %
	Gray 2 %	Brown 6 %
	Forrest Green 2 %	Sky Blue 2 %
	TSS = 6	Red 2 %
	MSS = 3	TSS = 7
		MSS = 5
Peace	White 41 %	White 47 %
	Blue 25 %	Blue 31 %
	Yellow 10 %	Yellow 6 %
	Green 10 %	Green 6 %
	Pink 6 %	Pink 2 %
	Orange 4 %	Red 4 %
	Sky Blue 2 %	Light Blue 2 %
	Purple 2 %	Gold 2 %
	TSS = 8	TSS = 8
	MSS = 6	MSS = 5
Pretty	Pink 67 %	Pink 59 %
	Red 6 %	Red 12 %
	Blue 8 %	Blue 4 %
	Black 4 %	Black 8 %
	Yellow 8 %	Yellow 2 %
	Purple 4 %	Purple 6 %
	Green 2 %	White 8 %
	Brown 2 %	Light Pink 2 %
	TSS = 8	TSS = 8
	MSS = 6	MSS = 6
Rescue	Red 60 %	Red 65 %

Table 7 (continued)

Word	Sample A	Sample B
	Blue 19 %	Blue 12 %
	Yellow 10 %	Yellow 6 %
	White 2 %	White 8 %
	Brown 2 %	Brown 2 %
	Black 6 %	Green 4 %
	TSS = 6	Tan 2 %
	MSS = 4	Indigo 2 %
		TSS = 8
		MSS = 5
Riches	Green 41 %	Green 37 %
	Gold 31 %	Gold 47 %
	Yellow 16 %	Yellow 6 %
	Red 4 %	Red 10 %
	Blue 6 %	TSS = 4
	White 2 %	MSS = 4
	TSS = 6	
	MSS = 5	
Romantic	Red 90 %	Red 84 %
	Pink 6 %	Pink 10 %
	Blue 2 %	Wine Red 2 %
	White 2 %	Black 2 %
	TSS = 4	Purple 2 %
	MSS = 2	TSS = 5
		MSS = 2
Thrill	Red 48 %	Red 54 %
	Blue 12 %	Blue 16 %
	Yellow 14 %	Yellow 6 %
	Green 6 %	Green 10 %
	Orange 6 %	Orange 8 %
	Black 8 %	Black 4 %
	Forrest Green 2 %	Silver 2 %
	Aqua 2 %	TSS = 7
	Purple 2 %	MSS = 6
	TSS = 9	
	MSS = 6	
Treasure	Gold 74 %	Gold 71 %
	Brown 12 %	Brown 6 %
	Yellow 6 %	Yellow 10 %
	Green 2 %	Green 2 %
	White 2 %	Pink 4 %
	Pearl White 2 %	Blue 2 %
	Red 2 %	Purple 2 %
	TSS = 7	Maroon 2 %
	MSS = 3	TSS = 8
		MSS = 4
Triumph	Yellow 33 %	Yellow 26 %
	Gold 23 %	Gold 30 %
	Red 18 %	Red 14 %
	Blue 8 %	Blue 16 %

Table 7 (continued)

Word	Sample A	Sample B
	White 8 %	White 4 %
	Green 2 %	Green 2 %
	Black 4 %	Gray 2 %
	Purple 2 %	Brown 2 %
	Bronze 2 %	Silver 2 %
	TSS = 9	Indigo 2 %
	MSS = 6	TSS = 10
		MSS = 5
Trophy	Gold 73 %	Gold 72 %
	Yellow 14 %	Yellow 20 %
	Silver 6 %	Silver 2 %
	Red 2 %	Green 4 %
	Black 2 %	Gray 2 %
	Bronze 2 %	TSS = 5
	TSS = 6	MSS = 3
	MSS = 3	
Vacation	Blue 52 %	Blue 44 %
	Yellow 29 %	Yellow 26 %
	Red 2 %	Red 6 %
	Orange 6 %	Orange 2 %
	White 4 %	White 2 %
	Green 2 %	Green 4 %
	Purple 2 %	Purple 2 %
	Beige 2 %	Pink 6 %
	Black 2 %	Tan 4 %
	TSS = 9	Beige 2 %
	MSS = 4	Gold 2 %
		TSS = 11
		MSS = 6
Victory	Red 33 %	Red 28 %
	Gold 23 %	Gold 20 %
	Blue 16 %	Blue 24 %
	White 14 %	White 6 %
	Yellow 4 %	Yellow 10 %
	Green 2 %	Green 6 %
	Silver 4 %	Black 2 %
	Pink 2 %	Orange 2 %
	Brown 2 %	Violet 2 %
	TSS = 9	TSS = 9
	MSS = 6	MSS = 6
Waterfall	Blue 76 %	Blue 82 %
	White 14 %	White 10 %
	Gray 4 %	Gray 2 %
	Aqua 2 %	Clear 4 %
	Forrest Green 2 %	Green 2 %
	Rainbow 2 %	TSS = 5
	TSS = 6	MSS = 3
	MSS = 3	
Wedding	White 94 %	White 96 %

Table 7 (continued)

Word	Sample A	Sample B
Wish	Red 4 %	Purple 2 %
	Gold 2 %	Black 2 %
	TSS = 3	TSS = 3
	MSS = 2	MSS = 1
	White 35 %	White 31 %
	Blue 21 %	Blue 25 %
	Yellow 17 %	Yellow 12 %
	Green 6 %	Green 9 %
	Gold 4 %	Gold 9 %
	Red 4 %	Red 8 %
	Pink 8 %	Pink 2 %
	Cream 2 %	Orange 2 %
	Silver 2 %	TSS = 8
	Purple 2 %	MSS = 6
	TSS = 10	
	MSS = 7	

References

- Altarriba, J., & Basnight-Brown, D. M. (2011). The representation of emotion vs. emotion-laden words in English and in Spanish in the affective Simon task. *International Journal of Bilingualism*, *15*, 310–328.
- Baddeley, A. D. (1972). Selective attention and performance in dangerous environments. *British Journal of Psychology*, *63*, 537–546.
- Bartels, A., & Zeki, S. (2000). The architecture of the color centre in the human visual brain: New results and a review. *European Journal of Neuroscience*, *12*, 172–193.
- Bellizzi, J. A., & Hite, R. E. (1992). Environmental color, consumer feelings, and purchase likelihood. *Psychology and Marketing*, *9*, 347–363.
- Bramão, I., Faisca, L., Forkstam, C., Inácio, F., Araújo, S., Petersson, K. M., & Reis, A. (2012). The interaction between surface color and color knowledge: Behavioral and electrophysiological evidence. *Brain and Cognition*, *78*, 28–37.
- Collins, A. M., & Loftus, E. F. (1975). A spreading-activation theory of semantic processing. *Psychological Review*, *82*, 407–428. doi:10.1037/0033-295X.82.6.407
- Elliot, A. J., & Maier, M. A. (2007). Color and psychological functioning. *Current Directions in Psychological Science*, *16*, 250–254.
- Elliot, A. J., Maier, M. A., Moller, A. C., Friedman, R., & Meinhardt, J. (2007). Color and psychological functioning: The effect of red on performance attainment. *Journal of Experimental Psychology: General*, *136*, 154–168. doi:10.1037/0096-3445.136.1.154
- Gegenfurtner, K. R., & Kiper, D. C. (2003). Color vision. *Annual Review of Neuroscience*, *26*, 181–206. doi:10.1146/annurev.neuro.26.041002.131116
- Gohar, K. N. (2008). *Diagnostic colours of emotions (Doctoral dissertation)*. Sydney: University of Sydney.
- Hemphill, M. (1996). A note on adults' color-emotion associations. *Journal of Genetic Psychology*, *157*, 275–280.
- Hupka, R. B., Zaleski, Z., Otto, J., Reidl, L., & Tarabrina, N. V. (1997). The colors of anger, envy, fear, and jealousy. *Journal of Cross-Cultural Psychology*, *28*, 156–171. doi:10.1177/0022022197282002
- Indow, T. (1988). Multidimensional studies of Munsell color solid. *Psychological Review*, *95*, 456–470. doi:10.1037/0033-295X.95.4.456
- Keil, A., & Ihssen, N. (2004). Identification facilitation for emotionally arousing verbs during the attentional blink. *Emotion*, *4*, 23–35.
- Knickerbocker, H., & Altarriba, J. (2013). Differential repetition blindness with emotion and emotion-laden wordtypes. *Visual Cognition*, *21*, 599–627.
- Kuhbandner, C., & Pekrun, R. (2013). Joint effects of emotion and color on memory. *Emotion*, *13*, 375–379.
- McKenna, F. P. (1986). Effects of unattended emotional stimuli on color-naming performance. *Current Psychological Research and Reviews*, *5*, 3–9.
- McKenna, F. P., & Sharma, D. (1995). Intrusive cognitions: An investigation of the emotional Stroop task. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *21*, 1595–1607. doi:10.1037/0278-7393.21.6.1595
- Meier, B. P., Robinson, M. D., & Clore, G. L. (2004). Why good guys wear white: Automatic inferences about stimulus valence based on brightness. *Psychological Science*, *15*, 82–87. doi:10.1111/j.0963-7214.2004.01502002.x
- Moller, A. C., Elliot, A. J., & Maier, M. A. (2009). Basic hue-meaning associations. *Emotion*, *9*, 898–902.
- Nelson, D. L., McEvoy, C. L., & Schreiber, T. A. (1998). The University of South Florida word association, rhyme, and word fragment norms [Database]. Retrieved from <http://w3.usf.edu/FreeAssociation/>
- Nelson, D. L., & Schreiber, T. A. (1992). Word concreteness and word structure as independent determinants of recall. *Journal of Memory and Language*, *31*, 237–260. doi:10.1016/0749-596X(92)90013-N
- Ostergaard, A. L., & Davidoff, J. B. (1985). Some effects of color on naming and recognition of objects. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *11*, 579–587. doi:10.1037/0278-7393.11.3.579
- Sutton, T. M., & Altarriba, J. (2008). Emotion words in the mental lexicon: A new look at the emotional Stroop effect. *Mental Lexicon*, *3*, 29–46.
- Tanaka, J. W., & Presnell, L. M. (1999). Color diagnosticity in object recognition. *Perception & Psychophysics*, *61*, 1140–1153.
- Travis, D. (1991). *Effective color displays: Theory and practice*. London: Academic Press.
- Van Overschelde, J. P., Rawson, K. A., & Dunlosky, J. (2004). Category norms: An updated and expanded version of the Battig and Montague (1969) norms. *Journal of Memory and Language*, *50*, 289–335. doi:10.1016/j.jml.2003.10.003
- Vuilleumier, P. (2005). How brains beware: Neural mechanisms of emotional attention. *Trends in Cognitive Sciences*, *9*, 585–594. doi:10.1016/j.tics.2005.10.011
- Wurm, L. H., Legge, G. E., Isenberg, L. M., & Luebker, A. (1993). Color improves object recognition in normal and low vision. *Journal of Experimental Psychology: Human Perception and Performance*, *19*, 899–911. doi:10.1037/0096-1523.19.4.899
- Young, S. G., Elliot, A. J., Feltman, R., & Ambady, N. (2013). Red enhances the processing of facial expressions of anger. *Emotion*, *13*, 380–384.