Feeling Without Thinking: Affective Primacy and the Nonconscious Processing of Emotion

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Affect as Afterthought

*Typical information-processing model of affect. Reprinted with permission from Zajonc, 1980.*
Example of Positive and Negative Affective Primes

Evidence of Affective Primacy

Summary of suboptimal priming conditions in Murphy & Zajonc (1993).

<table>
<thead>
<tr>
<th>Suboptimal Prime</th>
<th>Judgment of Target Ideograph</th>
<th>Statistical Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1: Smiling &amp; angry faces</td>
<td>Liking of ideographs</td>
<td>Yes</td>
</tr>
<tr>
<td>Study 2: Smiling &amp; angry faces</td>
<td>Does ideograph represent a good or bad object</td>
<td>Yes</td>
</tr>
<tr>
<td>Study 3: Symmetrical &amp; asymmetrical</td>
<td>Symmetry of ideograph</td>
<td>No</td>
</tr>
<tr>
<td>Study 4: Big &amp; small shapes</td>
<td>What size object does the ideograph represent</td>
<td>No</td>
</tr>
<tr>
<td>Study 5: Male &amp; female faces</td>
<td>Masculinity/feminity of object represented</td>
<td>No</td>
</tr>
</tbody>
</table>
Nonconscious Discrimination of Emotion

Mean deviation from chance on a forced-choice discrimination task as a function of the emotional expression of the prime and foil with the same model.

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Mean Deviation</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anger</td>
<td>.700 ***</td>
<td></td>
</tr>
<tr>
<td>Disgust</td>
<td>.525**</td>
<td>-.100</td>
</tr>
<tr>
<td>Fear</td>
<td>.575**</td>
<td>-.300</td>
</tr>
<tr>
<td>Sadness</td>
<td>.450 *</td>
<td>-.100</td>
</tr>
<tr>
<td>Surprise</td>
<td>-.175</td>
<td>-.025</td>
</tr>
</tbody>
</table>

Affect from conscious versus nonconscious sources

Increase in liking ratings following 3 prior exposures and positive affective prime as a function of exposure duration.

<table>
<thead>
<tr>
<th>Exposure duration of ideographs in initial exposure phase</th>
<th>Suboptimal (4msec)</th>
<th>Optimal (1 second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suboptimal (4msec)</td>
<td>.94b</td>
<td>1.09b</td>
</tr>
<tr>
<td>Optimal (1 second)</td>
<td>.39a</td>
<td>.31a</td>
</tr>
</tbody>
</table>

Mere exposure effect: Is the affect generated dedicated or diffuse?

Figure 18.1 Preferences for diverse stimuli as a function of exposure condition.

Lessons Learned

- Affect is primary and can shape subsequent cognitions.
- Initial affective reactions are resilient.
- Humans seem evolutionarily prepared to discriminate at least to the level of positive verses negative affect outside of conscious awareness.
- It is difficult to hold both positive and negative emotions simultaneously.
- Repeated exposures will lead to more positive attitudes…
  - as long as there is nothing inherently negative about a stimulus.
- Some of the affect generated outside of conscious awareness becomes dedicated to the specific object or individual…
  - whereas some of the affect generated remains diffuse.
Two of Bob’s favorite quotes

“There is nothing so practical as a good theory“

“Research that produces nothing but books will not suffice.”

(Kurt Lewin 1946, reproduced in Lewin 1948: 202-3)
Entertainment Education (aka EE, edutainment, social marketing)

“the intentional placement of educational content in entertainment messages” (Singhal & Rogers, 2002, p.117)

ABBREVIATED HISTORY

- **1951** *The Archers*, radio melodrama containing information on pig farming airs in Britain (world’s longest running radio soap).
- **1969** the airing of a birth control storyline on *Simplemente Maria* (Simply Maria), a Mexican telenovela produced by Migel Sabido, was followed by a sharp reduction in the number of children per family.
- **70s and 80s** The concept of EE and the related concept of social marketing become popular but take place almost exclusively outside of the US.
- **1992** CDC adds the words “and Prevention” to its title.
- **1996** CDC creates a formal centralized EE program.
- **2002** CDC establishes Hollywood, Health and Society (HH&S) at Annenberg’s Norman Lear Center to work with US television writers and producers.
Lesson: Initial affective reactions are resilient

Parameter Estimates for Model with Self-Efficacy and Discussion

Parameter Estimates:

- Knowledge
  - 0.13* to Exposure
  - 0.20* to Interpersonal Discussion
- Attitude
  - 0.24* to Knowledge
  - 0.07* to Exposure
  - 0.40* to Self Efficacy
- Self Efficacy
  - 0.43* to Behavior
  - 0.34* to Attitude
  - 0.13* to Interpersonal Discussion
- Behavior
  - 0.07* to Attitude
  - 0.06* to Self Efficacy

Significance:

- * $p < 0.05$

Model Statistics:

- $\chi^2 = 5.50; df (5); \chi^2/df$ Ratio $= 1.10; RMSEA = 0.01$
Lesson: It is difficult to hold both positive and negative emotions simultaneously.

Condom Normalization Campaign in India.
Attempts to use popular television programs produced in the US to educate the general public about health issues by:

1. Organizing writers workshops featuring various health topics (i.e., gene therapy, obesity, workplace injury);

2. Meeting with specific television programs (particularly primetime medical shows and soap operas) to encourage the inclusion of accurate and topical storylines;

3. Operating an expert’s directory (obtaining accurate information about various diseases within hours);

4. Hosting the CDC Sentinel for Health Awards that honors the best daytime and primetime health depictions; and

5. Partnering with academics to evaluate the impact of various health-related storylines.
Lesson: Repeated exposures will lead to more positive attitudes …but what about knowledge and behavior? The combined effect of two BRCA storylines

- **Jewish woman** in mid-30s tested positive for BRCA
- **Family history** and getting a mammogram
- **85% risk for breast or ovarian cancer**
- Patient has **prophylactic mastectomy**
- Doctor (Abby) gets a mammogram

- **Woman in mid-30s tested positive for BRCA**
- **Lost mother** to breast cancer
- **85% risk for breast or ovarian cancer**
- Wants **prophylactic surgery** to remove breasts and ovaries
- Depicts **tough decision-making** and emotional struggles
Increase in Knowledge of BRCA gene and concept of genetic risk

Behaviors: Baseline vs. Follow-up

“*In the past month did you Schedule a Breast Cancer Screening as a result of seeing an episode of ****?:*”
Lesson: Repeated exposures will produce positive affect as long as there is nothing inherently negative about the stimulus.
Lesson: Some of the affect generated outside of conscious awareness becomes dedicated to the specific object or individual whereas some of the affect remains diffuse.

Desperate Housewives Lynette’s Lymphoma

A 6 episode cancer storyline in which one of the lead characters, Lynette Scavo, is diagnosed with Non-Hodgkins lymphoma and is treated with chemotherapy.

The viewers learn factual information about lymphoma including symptoms, prognosis, treatment options, receiving chemotherapy infusions and chemotherapy side effects (hair loss, fatigue, nausea).

Identification or Involvement with a Specific Character

Research suggests that involvement with characters is positively related to increased attention, mental rehearsal of the arguments presented, and modeling of behavior (Sharf & Friemuth, 1993; Sharf et al., 1996; Sood, 2002). Consequently, viewers appear to learn more from models – in this case, fictional television characters – with whom they identify, like, feel as if they know, or perceive to be similar to themselves (Bandura, 2002).

Measurement

Following Moyer-Guse’s (2008) lead, we use the term *involvement with a character* to refer to the overarching category of 4 related constructs each of which were measured on a 10-point scale (“not at all” to “a great deal”).

- Wishful identification (*How much would like to be like…*);
- Similarity (*How similar are you to…*);
- Liking (*How much do you like…*); and
- Parasocial interaction (*“How much do you feel like you know…”*).

(Note: A factor analysis revealed that these 4 constructs hold together well with a single factor explaining 52% of the total variance.)
Involvement with the narrative
more generally

Narratives can lead viewers to become “transported” into a narrative world where disbelief is suspended and counterarguing circumvented.

Measurement (adapted from Green & Brock’s items)

Thinking about Lynette’s cancer storyline please indicate how strongly you agree or disagree with each of the following statements ...(10 point scale)

- The storyline affected me emotionally.
- I could picture myself in the scenes shown in the storyline.
- I was mentally involved in the storyline while I was watching it.
- I have a vivid mental image of the characters in the storyline.
- The events in this storyline are relevant to my life.
- I wanted to find out how the storyline ended.
- After I finished watching the storyline, I found it easy to put it out of my mind (reversed).
- I found my mind wandering while watching the storyline (reversed).

(Cronbach’s alpha = .87 without the last 2 reversed items)
Emotion evoked

Green and Brock (2000) note the early and essential role that heightened emotions and motivations play in their construct of transportation.

Dillard and Peck (2000) point out, narratives that involve a series of emotions have been shown to be particularly gripping and persuasive.

And Slater and Rouner (2002, p.185) acknowledge the central role of emotion in EE: “entertainment education, especially when it uses an extended serial format, provides substantial opportunity for emotional investment in fictional characters”

Measurement: Extent to which viewers experienced each of Ekman’s 6 basic emotions (sad, disgusted, angry, afraid, surprised, happy) in response to the lymphoma storyline on a 10-point scale from “not at all” to “extremely”

Note: Factor analysis revealed that these emotions divided into positive (happy) and negative (sad, disgusted, angry, and afraid; Cronbach’s alpha of 0.78) with surprised falling out.
Research Questions

RQ1: Which of the following concepts: involvement with a specific character, involvement with a narrative more generally, or emotion best predicts entertainment education effects? More specifically, which concept is most likely to produce an increase in cancer-related:

a. knowledge (about cancer generally, Hodgkin’s lymphoma, symptoms);

b. attitudes (how important it would be to know their family history of cancer, have people to support them, stay sexually attractive to their partner (a major part of Lynette’s storyline); and

c. behavior (talking about Hodgkin’s lymphoma specifically and cancer more generally with family or friends in the past 30 days, information seeking about cancer)

RQ2: How might these constructs operate together to produce entertainment education effects?

Methodology: An online survey of the same 167 regular female viewers of the popular television drama, Desperate Housewives before and after the storyline aired.
RQ1: Effects of Involvement, Transportation, and Emotion on Knowledge, Attitude, and Behavior. Standardized Beta Coefficients from Regression Models (N = 167).

<table>
<thead>
<tr>
<th></th>
<th>Knowledge</th>
<th>Attitudes</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Talking</td>
<td>Information Seeking</td>
<td></td>
</tr>
<tr>
<td>Control for Time 1</td>
<td>0.54**</td>
<td>0.62**</td>
<td>0.50**</td>
</tr>
<tr>
<td>Health Status</td>
<td>0.07</td>
<td>-0.02</td>
<td>0.05</td>
</tr>
<tr>
<td># Episodes Viewed</td>
<td>-0.03</td>
<td>-0.02</td>
<td>-0.01</td>
</tr>
<tr>
<td>Involvement with Lynette</td>
<td>-0.05</td>
<td>0.03</td>
<td>-0.06</td>
</tr>
<tr>
<td>Transportation or Involvement with Narrative</td>
<td>0.29**</td>
<td>0.16*</td>
<td>0.23*</td>
</tr>
<tr>
<td>Positive Emotion</td>
<td>0.03</td>
<td>0.05</td>
<td>0.14*</td>
</tr>
<tr>
<td>Negative Emotion</td>
<td>0.11</td>
<td>-0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.50</td>
<td>0.47</td>
<td>0.41</td>
</tr>
</tbody>
</table>

* $p < .05$; ** $p < .01$
RQ2: How might involvement with a specific character, involvement with a narrative more generally, and emotion operate together to produce entertainment education effects?

\[ \chi^2 = 731; \, df \,(289); \, \chi^2/df \, \text{Ratio} = 2.53; \, \text{RMSEA} = 0.09; \, \text{CFI} = 0.90 \]
Conclusions

- Although involvement with a specific character, involvement with a narrative more generally, and emotion may be related, they are not completely overlapping.
- Indeed they may produce different effects at different points in the persuasion process.
- Involvement or identification with a specific character may be most relevant for its ability to produce heightened levels of transportation and emotion which, in turn, produce changes in knowledge, attitudes and behavior.
- Transportation into a narrative may produce a state where conscious defenses are lowered allowing information presented in stories to have a stronger impact than the same information presented in a non-narrative format.

Questions that Sheila Murphy currently asks:

- Is transportation into a narrative similar to nonconscious processing?
- Does transportation produce effects that are dedicated to that particular narrative or are they more diffuse?
Transforming Cancer Knowledge, Attitudes and Behavior through Narrative

Experimental Design: 2(version) x 3(modality) x 4(ethnicity)

Version of cervical cancer information

<table>
<thead>
<tr>
<th></th>
<th>Narrative</th>
<th>Non-narrative or factual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio and video</td>
<td>200 women between 21-45</td>
<td>200</td>
</tr>
<tr>
<td>(Film)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio only (Radio)</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Print (similar to</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>clinic brochure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1200 (300 European</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American, 300 Mexican</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American, 300 Korean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American and 300 African</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American)</td>
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</table>