Measuring emotional response to beer in context using evoked scenarios

Prof Joanne Hort  
SABMiller Chair of Sensory Science (UoN)

Rocio Dorado (UoN & TUM)  
Amparo Tarrega (UoN)  
Carolina Chaya (TUM)

Why measure emotional response?

It goes beyond ‘liking’ (e.g. Ng et al 2013, Chaya et al 2015a, 2015b)

Gives deeper insights into consumer relationships with beer

Equally liked
Different emotional response
Measuring Consumer Response

• What is the correct context for measuring emotional response?

Situational Fallacy?
(Koster, 2003)
‘Scenarios’

• **What is a scenario?**
  – **Text or photo/props encouraging a particular occasion/context to be imagined whilst evaluating products**

• **Remembered or imagined events evoke emotions** (Piqueras-Fiszman & Jaeger, 2014a, 2014b)

• **Scenarios can be**
  – **Predefined**
    • Do all consumers identify with the scenario? (Piqueras-Fiszman & Jaeger, 2015)
  – **Freely elicited**
    • Subjects define their own relevant scenario. Variation?
Research Question?

• What effect does the use of a freely elicited scenario have on the emotional response profile of beer?
  – Is the effect the same on liking scores?

• What is the relative contribution of
  i) the scenario
  ii) the product
  ...to the emotional response profile of beer
Methods
Participants and Products

• Participants
  – 100 without scenario (18-51yr, 60F)
  – 100 with scenario (18-50yr, 62F)

• Products
  – 5 commercial lagers P1-P5 representative of mainstream lager market served at two temperatures
### Beer Emotion Lexicon (Eaton et al, 2015)

<table>
<thead>
<tr>
<th>Category</th>
<th>Associated Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock</td>
<td>Alarmed/Cheated/Confused/Overwhelmed/Shocked/Strange Weird</td>
</tr>
<tr>
<td>Bored</td>
<td>Bored</td>
</tr>
<tr>
<td>Content</td>
<td>Calm/Comfortable/Comforted/Content/Enjoyment/Good/Happy/Nice/Pleasant/Pleased/Relaxed/Satisfied</td>
</tr>
<tr>
<td>Excitement</td>
<td>Enthusiastic/Excited/Fulfilled/Fun/Impressed/Interested Optimistic/Pleasantly surprised/Want/Warm</td>
</tr>
<tr>
<td>Nostalgic</td>
<td>Desirous/Nostalgic/Relieved</td>
</tr>
<tr>
<td>Disconfirmed</td>
<td>Disappointed/Dissatisfied/Unpleasantly surprised</td>
</tr>
<tr>
<td>Disgusted</td>
<td>Disgusted/Horrible/Repulsed/repelled/unpleasant</td>
</tr>
<tr>
<td>Tame</td>
<td>Tame/Safe</td>
</tr>
<tr>
<td>Underwhelmed</td>
<td>Underwhelmed</td>
</tr>
<tr>
<td>Curious</td>
<td>Curious</td>
</tr>
</tbody>
</table>
Consumer Response – without scenario

- Consumers attended two 30 min sessions
  - Served with a dummy sample (P3) followed by 5 samples in each session
  - Presentation order of emotions randomised across subjects but remained constant within a subject
  - Assessed emotion categories and then liking on continuous line scales converted to score out of 10
Towards Scenarios...

Describe an occasion when you drink beer

• Frequency of emotional terms was higher when dimensions of location, social setting and time were in the narrative

With a scenario condition (n=100)

• Check all that Apply Warm up questions:
  – E.g. When I am drinking a beer I am usually...
    • In a pub
    • In a crowded place e.g. festival
    • At home
    • At a friends house
    • Other (specify)
Think about an occasion when you were having a beer. Clearly imagine you are experiencing this occasion. Now write down a detailed description of the occasion you are imagining. Please take your time and provide a description of the occasion that is as complete as possible.
I went to the cinema with my boyfriend and we had a pint at the bar before the film. The beer put me in a good mood and made me excited for the film. We were surrounded by lots of other people drinking and there was a live band so everybody was chatting and enjoying themselves and there was a good atmosphere. The beer enhanced my good mood and made me feel happy...It helped me relax and unwind.
10 most popular words in scenarios (NVivo)

- Drink
- Beer
- Friends
- Feel
- Evening
- Happy
- Relaxing
- Around
- Pub
- Talking
- Feeling Around
Consumer Response – with a scenario

• Consumers attended two 30 min sessions

Before assessing samples they were asked to indicated their expected response to a lager beer in their particular context

• Subjects followed the same experimental protocol as ‘without scenario’ subjects but given a copy of their scenario and asked to ‘keep this in mind’ whilst scoring the beer samples
Data Analysis

- NVivo 10 software (QSR International) to mine word frequency in Scenario texts
- Dummy sample data discarded
- ANOVA applied to investigate effect of scenario and product discrimination
- T-tests applied to compare expected response to with, and without scenario responses
RESULTS
Product discrimination – No Scenario

- 7 out of 10 emotion categories discriminated across the beers (p<0.05):

Content, Tame, Shocked more discriminating than others

Liking also discriminated but only pulled out P5 as less liked than others.
Product discrimination – With Scenario

- Again same 7 out of 10 emotion categories discriminated across the beers (p<0.05):

  - Looks similar but nature of discrimination has changed.
  - Disconfirmed pulls out P2 as different to P5. Shocked, Content and Excited only discriminated P5
  - Use of scenario affects discrimination but no clear pattern
  - Liking now discriminated between P1 and P4
Effect of Scenario on mean scores

- Using a scenario had a significant effect on mean scores ($p<0.05$). It was a more polarising.

Use of scenario had no effect on level of liking scores ($p>0.05$)
Expected emotional response in scenario

Expect high intensity scores for positive emotions, low intensity scores for negative emotions.
For product P1 positive emotions were scored much lower than expected and negative emotions scored better than expected without a scenario.

*Difference between ‘expected’ & ‘without scenario’ (p<0.05)
Emotional response in all contexts (P1)

With a scenario, positive emotions for P1 partially assimilate towards expectation. Not a big difference for negative emotions.

†Difference between ‘expected’ & ‘with scenario’ (p<0.05)
Less assimilation towards expectation with scenario for positive emotions. Again little difference for negative emotions.
Comparison of Liked and disliked products

Disconfirmation between actual and expected emotional response observed for both liked and disliked products in no scenario condition. This is much higher for unliked products. With a scenario assimilation to expectation is almost complete for liked products.
Summary

- Scenarios effect level of emotional response (and discrimination).
  - Positive emotions are enhanced and negative emotions reduced
  - How excited can you feel in a sensory booth?

- Scenario did not affect level of liking but did increase discrimination

- Scenario clearly impacts emotional response but sensory properties of the beer also modulate response
Closing remarks

• Clear evidence that taking into account beer drinking scenario effects emotional response.

• Emotional response should be measured in context

• Evoked scenarios take the respondent a step closer to the real situation.

• Next step: how different are evoked scenarios to real context?
Acknowledgements go to SABMiller for provision on the beer samples for this study.