Feedback Calibration
A training method for descriptive panels.

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Descriptive Analysis

• Accuracy & precision
• Panel & panelist performance
• Replication of panel results
• Statistical treatments
• Post-hoc evaluation

• Can we get it right from the beginning?
• What is the best possible panel?
A Sensory Order of Operations

• What is an “order of operations”?
  – BEDMAS (Brackets, Exponents, Divide, Multiply, Add & Subtract)

• The Sensory Order
  – Identify the attribute
  – Rank its intensity
  – Scale the intensity
## Attribute Difficulty

<table>
<thead>
<tr>
<th>ATTRIBUTE</th>
<th>Scaling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td></td>
</tr>
<tr>
<td>Specific</td>
<td>Full</td>
</tr>
<tr>
<td>Standard</td>
<td>Rankable</td>
</tr>
<tr>
<td>Group of Attributes</td>
<td></td>
</tr>
<tr>
<td>Verbal or Evocative</td>
<td>Off/On</td>
</tr>
</tbody>
</table>
Objective

- To investigate the use of immediate feedback with calibration standards as a method to improve the training process and to provide anchors which permit comparison between panels.
Targets and Ranges

The current approach
## Numerical Feedback

### Panelist Result Summary

**Panelist: n/a**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sweetness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response</td>
<td>6.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Mean</td>
<td>5.20</td>
<td>5.80</td>
</tr>
<tr>
<td>Standard Deviation (+/-)</td>
<td>(1.92)</td>
<td>(1.79)</td>
</tr>
<tr>
<td>Target &amp; Range</td>
<td>7 (6-9)</td>
<td>8 (7-9)</td>
</tr>
<tr>
<td><strong>Saltiness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response</td>
<td>3.70X</td>
<td>5.80</td>
</tr>
<tr>
<td>Mean</td>
<td>4.00</td>
<td>5.10</td>
</tr>
<tr>
<td>Standard Deviation (+/-)</td>
<td>(2.11)</td>
<td>(1.16)</td>
</tr>
<tr>
<td>Target &amp; Range</td>
<td>5 (4-7)</td>
<td>4 (3-6)</td>
</tr>
</tbody>
</table>
The Red Wine Study

Using the Feedback Calibration Method
Determination Panel

- An experienced determination panel performed descriptive profiling of 20 red wines. Their results were used to establish the attributes and targets for the second phase of the research.
Research Panels

- Sixteen inexperienced panelists were recruited and given 20 hours of common training over 10 days. They were then divided into two panels, control and experimental, composed of 5 women and 3 men each.
The Study

• The control panel was trained using conventional debriefing at the end of each session.
• The experimental panel only received immediate computerized feedback in the booths during evaluation.
• Both panels saw the same 10 wines and used the same scales and attributes.
• The research continued daily over a three-week period.
Panelist Screen

Attribute 1
Sample 236
NONE
INTENSE

Attribute 2
Sample 236
NONE
INTENSE

Attribute 3
Sample 236
NONE
INTENSE

Attribute 4
Sample 236
NONE
INTENSE

Finished
Question 1 of 1
Sample 2 of 2
Immediate Feedback

Attribute 1

Attribute 2

Attribute 3

Attribute 4

Sample 236

NONE

INTENSE

Finished

FEEDBACK

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Panelist Screen

Attribute 1
Sample 498
NONE — INTENSE

Attribute 2
Sample 498
NONE — INTENSE

Attribute 3
Sample 498
NONE — INTENSE

Attribute 4
Sample 498
NONE — INTENSE

Finished

Question 1 of 1
Sample 2 of 2
Immediate Feedback

Attribute 1
Sample 236
NONE
Attribute 2
Sample 236
NONE
Attribute 3
Sample 236
NONE
Attribute 4
Sample 236
NONE

Next Sample
FEEDBACK
Results

• Extensive statistical analysis indicated that both the experimental and control panels were able to reproduce the results obtained by the determination panel.
• Panelist and panel accuracy and precision were obtained by measuring the difference from the target values.
• Both panels demonstrated similar learning curves.
Aggregate distance from range

- Experimental panel
- Control panel

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Conclusions

➢ Feedback Calibration provides an effective and unbiased training for descriptive panelists, regardless of the style, skill or experience level of the trainer.

➢ Training times can be cut significantly.
Acknowledgements

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Amanda Bartel
Compusense Panelists
Future Work

• Further research will be conducted to determine if the combination of both techniques will result in faster or more accurate descriptive panel training.

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Suspending continual feedback and its effect on panel performance
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