Is a sequential, profiling approach useful for predicting match perceptions in food and wine?

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The relationship between food and wine sensations is based primarily on anecdotal concepts and raises the question:

Are food and wine selections that create a sensation of ‘match’ an art or science?

Pairing experts do not agree on what is most important in making choices about what wine and food to serve together. Is it the texture or body of the food and wine? Is it the flavors? Or is it primary sensory components (sweetness, saltiness, acidity, bitterness)?
Alternatively, it has been suggested that the concept of food and wine pairing is a scam and that these sensations are individually derived (Jover, Montes, and Fuentes, 2004; Vinography, 2008) or based on physiological characteristics such as taste bud theory (Smith, 2010).

Therefore, this study assesses these perspectives by asking the following research question.

- Can a systematic approach to profiling food and wine characteristics be used to accurately predict a sensation of match?

**Sample and Procedures**

The testing instrument was from Harrington (2008) and included four phases:

1. wine profile based on taste components, texture and flavor,
2. food profile based on taste components, texture and flavor,
3. weighting scheme to assess predicted match based on 12 food and wine rules, and
4. perception of match based on an actual mixed tasting of each food and wine together.

**Sample and Procedures – Cont’d**

Participants were asked to taste and evaluate, using a 0 to 10 line scale, each wine for level of each:

- taste component (sweetness, acidity and effervescence level),
- texture element (tannin, alcohol and body level), and
- flavor element (flavor type, spiciness, intensity and persistency).

For the food items, participants were asked to taste, using a 0 to 10 line scale, and evaluate for each:

- taste component (sweetness, acidity, saltiness and bitterness),
- texture element (fattiness and body level), and
- flavor element (flavor type, spiciness, intensity and persistency).

All participants had undergone 15 weeks of training on the use of the instruments, value bands, scales and the meaning of the descriptor terms.

**Sample and Procedures – Cont’d**

The Riesling (Seaglass 2011), Chardonnay (BV Carneros 2010), and Pinot Noir (Garnet 2010) wines were produced in California; the Shiraz (Penfolds Thomas Hyland) in Australia.

The two food items variety by protein type (chicken and pork) but were made using the same preparation and ingredients including chicken or pork with mushrooms, onions, spices, and cream backed in the oven until gold brown each served with rice.
Sample and Procedures – Cont’d

After each wine was tasted (Phase 1) and evaluated and each food item was tasted (Phase 2) and evaluated, participants were asked to quantify the predicted level of match using an evaluation tool by Harrington (2008: 255-256) – Phase 3.

This tool is based on the “Wine and Food Pairing Decision Tree” concept (Harrington, 2008: 254) using 12 decision (yes/no) points based on key proposed match combinations for food and wine (p. 230).

Sample and Procedures – Cont’d

- Phase 4

The match level used a 0 to 10 line scale that included descriptive anchors (0 = no match, 5-6 = average match level, 10 = synergistic or ideal match).

Participants were asked to cleanse their palate with water, crackers and were given a short break between pairings.

Results

Table 1 provides the mean and standard deviation for predicted match level for each food and wine combination prior to a mixed tasted of the food and wine together (Predicted Match Combinations) as well as the mean and standard deviation for perceived match when each food and wine combination was tasted together by the participants.

<table>
<thead>
<tr>
<th>Combinations</th>
<th>Predicted Match Mean (SD)</th>
<th>Actual Match Mean (SD)</th>
<th>Mean Difference</th>
<th>df</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riesling and Chicken</td>
<td>6.89 (1.66)</td>
<td>6.32 (1.95)</td>
<td>-.57</td>
<td>26</td>
<td>.22</td>
</tr>
<tr>
<td>Riesling and Pork</td>
<td>6.11 (1.76)</td>
<td>5.67 (2.13)</td>
<td>-.83</td>
<td>26</td>
<td>.08</td>
</tr>
<tr>
<td>Chardonnay and Chicken</td>
<td>5.90 (1.95)</td>
<td>5.08 (2.51)</td>
<td>-1.17</td>
<td>25</td>
<td>.08</td>
</tr>
<tr>
<td>Chardonnay and Pork</td>
<td>5.49 (1.96)</td>
<td>4.42 (2.85)</td>
<td>-1.85</td>
<td>25</td>
<td>.001</td>
</tr>
<tr>
<td>Pinot Noir and Chicken</td>
<td>6.65 (2.44)</td>
<td>5.56 (2.53)</td>
<td>-1.09</td>
<td>25</td>
<td>.05</td>
</tr>
<tr>
<td>Pinot Noir and Pork</td>
<td>6.36 (2.30)</td>
<td>4.81 (2.31)</td>
<td>-1.55</td>
<td>25</td>
<td>.05</td>
</tr>
<tr>
<td>Shiraz and Chicken</td>
<td>6.45 (2.99)</td>
<td>4.58 (2.34)</td>
<td>-1.87</td>
<td>25</td>
<td>.04</td>
</tr>
<tr>
<td>Shiraz and Pork</td>
<td>6.52 (2.33)</td>
<td>5.45 (2.12)</td>
<td>-1.07</td>
<td>25</td>
<td>.04</td>
</tr>
</tbody>
</table>

Discussion, Conclusions and Implications

When considering the first research question, “Can a systematic approach to profiling food and wine characteristics be used to accurately predict a sensation of match?” the results of this study suggest that in fact consumers can accurately predict a match of food and wine.

For example, when asked to predict the match of the Riesling wine and chicken Geschnetzeltes, there was no significant difference when the participants actually tasted the food and wine together.

The practical significance of these results suggest when consumers are confronted with wine and food pairing suggestions in restaurants, food and wine magazines, that there is a connection and assessment made by consumers that validates this conceptual match.

It also suggests, that accuracy of the conceptual predictions needs to be thoroughly thought through to maintain the reputation of the restaurant and food and wine magazine.