Consumer understanding, interpretation and perceived levels of personal responsibility in relation to satiety-related claims

Els Bilman\(^1\), Ellen van Kleef\(^1\), David Mela\(^2\), Toine Hulshof\(^3\) & Hans van Trijp\(^1\)

\(^1\)Marketing & Consumer Behaviour Group, Wageningen University
\(^2\)Unilever R&D
\(^3\)Kellogg Europe

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Scientific debate: from Booth & Nouwen

The regulatory context (EFSA):
• Any claim should not go beyond the demonstrated scientific evidence
• The average consumer must be able to understand the effects expressed in the claim

Three interrelated issues:
1. Are subjective feelings of satiety relevant health-related benefits?
2. Are satiety claims interpreted beyond their literal meaning?
3. Can satiety claims be understood by the average consumer as an addition to other primary behavioural changes required for effective weight control?
Research questions

• To what extent do consumers over-interpret satiety claims to imply weight management claims?

• Do consumers necessarily expect weight control and weight loss related benefits to emerge from products with a satiety claim ("magic bullet" effect) or do they recognise that these claims can only function as part of a broader behavioural repertoire to achieve effective weight control?
Theoretical framework: inference making

Brain is associative network of stored associations / covariances

Means-end chain theory: assumes inference making processes and particularly emphasises the hierarchical level of information processing

Levels of perceived “benefit extraction” used in this study:

- Contains specific ingredients (nutrient claim)
- Fills your stomach (functional benefit)
- Feel full for longer (emotional benefit)
- Controls appetite (functional behavioural consequence)
- Make it through the day (emotional behavioural consequence)
- Controls calorie intake (weight management consequence)
- Lose weight (weight loss consequence)
Claims included in the study

**Satiety-related claims**
- Contains active fibres
- Increases fullness
- Helps to control hunger
- Helps you want to eat less
- Keeps you going between meals

**Control claim**
- Contains B vitamins
Hypotheses

Perceived benefits

- Lose weight
- Controls calorie intake
- Make it through the day
- Controls appetite
- Feel full for longer
- Fills your stomach
- Contains specific ingredients

Claims

- Contains B vitamins
- Contains active fibres
- Increases fullness
- Helps to control hunger
- Helps you want to eat less
- Keeps you going between meals
Hypotheses

Perceived benefits

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Lose weight</th>
<th>Controls calorie intake</th>
<th>Make it through the day</th>
<th>Controls appetite</th>
<th>Feel full for longer</th>
<th>Fills your stomach</th>
<th>Contains specific ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>3</td>
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</tbody>
</table>

Claims
Methodology
Respondents

- Internet survey with 1504 consumers
- 4 countries: U.K., Germany, France & Italy
- Gender: 754 females
- Age: 40.40
- BMI: 25.26

Country differences:
- German participants were heavier and had a higher BMI.
- French participants scored lower on active dieting
Imagine, you encounter a product with the following claim: “Increases fullness”

Contains specific ingredients
Fills your stomach
Feel full for longer
Controls appetite
Make it through the day
Controls calorie intake
Lose weight
Imagine, you encounter a product with the following claim: “Increases fullness”

- Reflects claim well
  - Fills your stomach
  - Feel full for longer
  - Controls appetite

- Does somewhat reflect the claim
  - Contains specific ingredients
  - Make it through the day

- Doesn’t reflect the claim well
  - Controls calorie intake
  - Lose weight
Ranking task

Imagine, you encounter a product with the following claim: “Increases fullness”

Reflects claim well
1. Feel full for longer
2. Fills your stomach
3. Controls appetite

Does somewhat reflect the claim
4. Make it through the day
5. Contains specific ingredients

Doesn’t reflect the claim well
6. Controls calorie intake
7. Lose weight
Rating task

For the claim “increases fullness”, please indicate the extent to which you agree with the following statements regarding the product.

<table>
<thead>
<tr>
<th>Statement</th>
<th>(1) Strongly disagree</th>
<th>(7) Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains specific ingredients</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Fills your stomach</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Feel full for longer</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Controls appetite</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Make it through the day</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Controls calorie intake</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Lose weight</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
Personal responsibility

Please indicate to what extent the communicated feature “increases fullness” is delivered entirely through the product, or is delivered entirely through your personal efforts or requires a certain balance between these two to be obtained.
Dieting behaviour & locus of control

• Prevention of weight gain: “How difficult or easy do you think it is to prevent weight gain?”  5 point scale: very difficult (1) to very easy (5)

• Bodyweight perception: “How would you rate your bodyweight?”  7 point scale: far too thin (1) to far too heavy (7)

• Active dieting: “I am actively trying to keep from gaining weight”  7 point scale: I certainly don’t (1) to I certainly do (7)

• Restrained eating scale of the Dutch Eating Behaviour Questionnaire (van Strien et al., 1986)  5 point scale: never (1), seldom (2), sometimes (3), often (4), very often (5)

• Weight locus of control scale (Saltzer, 1982)  7 point scale: strongly disagree (1) to strongly agree (7)
Data analysis
Claim level analyses

- Per claim
  - For each inferred benefit perception
  - Organise ranks from best fit (1) to least fit (7) (also know “fits well”)

- Compare profiles between claims
  - Including control claim (contains B vitamins)
Individual level analyses

- Individual “overgeneralisation” score
  - Per claim: frequency of higher level association in “fit well” box
  - Across claims: summated score (0-18)

- Per claim and overall:
  - Regress overgeneralisation score on predictors
    - Socio-demographics
    - Country
    - Weight gain and dieting behaviors

- Also for personal responsibility (overall and per claim)
Results
Claim: Contains B vitamins

- Lose weight
- Controls calorie intake
- Make it through the day
- Controls appetite
- Feel full for longer
- Fills your stomach
- Contains specific ingredients

Respondents
Claim: Contains active fibers

- Lose weight
- Controls calorie intake
- Make it through the day
- Controls appetite
- Feel full for longer
- Fills your stomach
- Contains specific ingredients

Respondents

1 2 3 4 5 6 7
Claim: Helps you want to eat less

- **Lose weight**: Controls calorie intake, Make it through the day, Controls appetite
- **Feel full for longer**: Fills your stomach
- **Contains specific ingredients**:
Claim: Keeps you going between meals

- Lose weight
- Controls calorie intake
- Make it through the day
- Controls appetite
- Feel full for longer
- Fills your stomach
- Contains specific ingredients

Respondents
Perceived personal responsibility

Individual differences: participants with a higher score on the weight locus of control scale, scored more in line with expectations on the perceived personal responsibility scale.
### Individual differences model

<table>
<thead>
<tr>
<th>Diet &amp; Weight Variables</th>
<th>Over-interpretation</th>
<th>Personal responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restraint score</td>
<td>0.234**</td>
<td></td>
</tr>
<tr>
<td>Body weight perception</td>
<td>-0.094*</td>
<td></td>
</tr>
<tr>
<td>Prevention weight gain</td>
<td></td>
<td>0.101**</td>
</tr>
<tr>
<td>Weight LoC</td>
<td>-0.56*</td>
<td>-0.115**</td>
</tr>
<tr>
<td>Country</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK vs Germany</td>
<td>0.247**</td>
<td></td>
</tr>
<tr>
<td>UK vs France</td>
<td>0.180**</td>
<td>-0.087*</td>
</tr>
<tr>
<td>UK vs Italy</td>
<td>0.162**</td>
<td>-0.089*</td>
</tr>
<tr>
<td>Socio-demographics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average vs high income</td>
<td>-0.063*</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.112</td>
<td>0.044</td>
</tr>
</tbody>
</table>
Conclusion

- Over-interpretation of satiety claims
  - Only to very limited degree “beyond literal meaning”

- Magic bullet effect?
  - They understand own responsibility / contribution

- Individual differences?
  - Restrained eaters have a higher tendency
  - Other diet & weight variables: no consistent effect
  - UK consumers less likely to overgeneralise
Discussion

- Methodological
  - Ranking (within-subjects) easy and efficient
  - But ratings (between-subjects) show similar pattern

- Over-interpretation is central in policy debate
  - But we are still poor on empirical evidence

- Limitations
  - Four countries only
  - Claims in isolation, not as part of packaging design
  - Only looked at over-interpretation, not under-interpretation
Thank you

- For your attention