



## Assessment of Product Concept Fit Using Free Association Profiling

2008



Presenter:  
**Lori Kruse**  
Principle Consultant  
InsightsNow, Inc



# Outline

Problem Statement

Traditional Approach

Alternate Approach/Study Objectives

- Methodology

Data/Presentation of Results

Summary/Recommendations

Questions



## Problem Statement

A concept has been developed by Marketing and R&D has developed some prototypes

Is there a good fit between the concept and the product?

Will the consumer be delighted or disappointed when they buy this product, if they were exposed to the concept?

What kind of images or emotions are elicited when the consumer sees the concept, or tries the product?



## Typical Concept-Product Methodology

Expose concept to respondents and ask purchase intent, expected product liking, associated attribute questions (typically pulled directly from concept)

- Agree/disagree statements such as “this product would taste delicious”, “this product would relax me”

Respondent receives product and is asked purchase intent, product liking, if product meets expectations, product attributes and concept attributes

Analyze results for drop in purchase intent, liking and attribute changes from concept to product

Methodology focuses on functional aspects of concept and product





## Alternate Approach/Study Objectives

To investigate the use of Free Association Profiling in addressing the problem of understanding concept-product fit.

Used Instant Cappuccino as test concept and prototypes.

### Specific objectives:

- To understand consumer language and expectations based on the concept alone
- To determine characteristics of an ideal Instant Cappuccino
- To understand how different Instant Cappuccino prototypes fit with the concept and ideal product
- To go beyond functional product characteristics – looking at images, memories, benefits and emotions



## Free Association Profiling

How can we understand imagery, memories, or emotions elicited by product or concept?

It is difficult to construct questions to obtain these additional characteristics directly so need to go about it in a different way

- Rather than ask questions directly – let respondent come up with their own language around all aspects of concept and product – going beyond functional properties



## Summary of Methodology

Free Association (FA) is a technique used to allow consumers to use their own words or phrases when evaluating products or concepts.

- No preconceived attributes or limitations of a structured questionnaire

FA is done on an individual respondent basis so that each respondent uses their unique words throughout the evaluation process.

- Data collection for this process was computerized

The end result of FA is an understanding of how products are differentiated based on consumer elicited attributes

Free Association has been used to obtain a “sensory profile” of products using trained or experienced panelists – focusing on product attributes.

Statistical analysis using Generalized Procrustes Analysis (GPA) was done to understand how words used by different respondents are related, as well as how the coffee products evaluated relate to the words or phrases in various categories.

- GPA involves rotation and scaling of data to bring individual respondent data into a common space



## Summary of Methodology

Respondents generated attribute terms based on Instant Cappuccino concept

- Product Characteristics
- Emotions
- Images
- Memories
- Perceived Benefits
- Other (added descriptors)

Respondents rated their “ideal” product on concept generated terms

- Terms not generated from the concept could be added by the respondent

Respondents rated 4 instant coffee prototypes on concept generated terms

- Terms could also be added at this point

Descriptive analysis was conducted on the 4 prototypes using consensus flavor profiling

Free Association sessions were held in April 2008 to obtain consumer language around each concept where n=14



Typical applications would use 25-30 respondents





# Concept

Make a delicious cup of rich and creamy cappuccino in a variety of silky smooth flavors.

Perfect to relax with and maybe even to dream by.

Try all our delicious drinks – in a wide variety of flavors to indulge your senses.

**CAPPUCCINO**  
*Flavors*

Make a delicious cup of rich and creamy cappuccino in a variety of silky smooth flavors. Perfect to relax with and maybe even to dream by. Try all our delicious drinks - wide variety of flavors to indulge your senses.

*The French Vanilla Collection*

**Regular**  
Refreshing, creamy vanilla taste in a base of light coffee.

**Decaffeinated**  
Rich, creamy vanilla and without the caffeine.

**Fat Free**  
Rich, creamy vanilla in light coffee with low calories.

**Carb-Wise**  
Luscious, creamy vanilla with 90% less sugar.

*English Toffee*

*White Chocolate Caramel*

*Double Mocha*

Caramelized buttery nutty taste with a hint of coffee.

Smooth and creamy white chocolate taste with a hint of delicious caramel.

Pleasant, sweet with delicious cocoa flavor and a hint of coffee.

These products are certified by the Union of Orthodox Rabbis. The "D" on the package indicates that it is a dairy product containing milk.



## Details of Method

Instructions: Please read the product description and imagine yourself using the product. Then, type all of the words and/or phrases that come to mind after reading this description.

Think in terms of the following categories:

- Product Characteristics = What you think the product will look like, feel like, smell like...
- Images = Pictures that are created in your mind, such as destinations/places, rooms of a house...
- Memories = Memories of events, situations, people...
- Emotions = Gives feeling of happiness, excitement, sadness...
- Perceived Benefits = What you think this product will do for you if you use it...
- Other = Anything else that comes to mind that does not fit the previous categories

Respondent generates terms based on reading concept.



## Details of Method

Next respondent is asked to think about their ideal Instant Cappuccino product and rate each attribute they generated using a rating scale where 1=no association, 10=strong association

If they had additional attributes that applied to the ideal, they could add them and rate them

Then respondents were presented with 4 prototypes and rated each prototype using their attributes and 10 point scale

No Association									Strong Association
1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



## Prototypes Tested

 Decaffeinated/Sugar Free Mocha (265)

 Hazelnut accent flavor (134)

 English Toffee flavor (703)

 Mocha Chocolate (972)

All were presented as Instant Cappuccino products- specific flavor not identified



\* Six ounces of hot water was added to three teaspoons of Instant Cappuccino



# Concept Generated Terms

## Product Characteristics

Creamy (9)  
 Sweet (9)  
 Hot (6)  
 Watery (4)  
 Rich (3)  
 Smooth (3)  
 Warm (3)  
 Frothy (3)  
 Brown (2)  
 Coffee (2)  
 Coffee smell (2)  
 Delicious (2)  
 Thick (2)  
 Very Sweet (2)  
 Artificial  
 Authentic  
 Black  
 Cheap  
 Chocolate  
 Dark chocolate  
 Hot cocoa  
 Milk smell  
 Creamer  
 Different  
 Foamy  
 Hyper from caffeine  
 Too sweet & not enough flavor  
 Sugary  
 Knock off  
 Looks watered down  
 Watery brown  
 Thin  
 Lumps at bottom  
 Not rich in flavor  
 Nutty  
 Powdery  
 Vanilla  
 Yummy  
 Smells more like cocoa vs. espresso  
 Won't have the same foam as picture

## Images

Camping (3)  
 Fireplace (3)  
 Comfortable chair (2)  
 Coffee Shop (2)  
 Kitchen(2)  
 At my table looking out the window  
 Den  
 Reading room  
 Family room/Living room  
 Dorm room  
 College café  
 Cabin  
 Christmas  
 Starbucks  
 Seattle  
 Northwest  
 Mountain  
 Snow  
 McDonald's  
 Denny's restaurant  
 Bistro  
 Downtown bus station  
 Grocery store  
 Sipping on coffee  
 My favorite mug  
 Talking to friends  
 Frothy  
 Thick  
 Reading  
 Inviting  
 Night time/evening  
 Cold and wintery  
 Foreign country  
 Spilling coffee in a tippy  
 Styrofoam cup  
 Drinking while watching TV at night  
 At work during break to get revved up

## Memories

Friends (3)  
 Mother (2)  
 Family  
 Child  
 Camping  
 Oregon Coast  
 Cabin on Mt. Bachelor  
 Drinking cappuccinos for breakfast  
 Seattle Coffee downtown  
 Coffee shop in college  
 Hair salon  
 At home  
 Laughing  
 Talking  
 Cold morning  
 Drinking this product to feel warm  
 Relaxing  
 Drinking warm beverages after skiing  
 Winter  
 In the lodge after skiing when in college  
 Church classes  
 In my dorm room in college  
 Late nights studying  
 College care package  
 Christmas in front of the fire

## Emotions

Calm (4)  
 Relaxing (3)  
 Satisfying (3)  
 Happy (2)  
 Excited (2)  
 Content (2)  
 Disappointment (2)  
 Revved up  
 Invigorated  
 Energizing  
 Comfort  
 Warm and fuzzy all over  
 Delight  
 Relief  
 Not stressed  
 Desire  
 Contempt  
 Low expectations  
 Sickly

## Perceived Benefits

Energizing (3)  
 Satisfy my sweet tooth (2)  
 Low-calorie (2)  
 Make me feel better (2)  
 Good when I get tired of tea (adds variety)  
 Replace typical dessert  
 Smile and say MMMM  
 Keep me focused  
 Filling  
 Satisfy me  
 Make me ill  
 Make me full  
 Get fat  
 Make me sweat  
 Warm me up inside

Over 130 attributes





# Concept Generated Terms

Product Characteristics	Images	Memories	Emotions	Perceived Benefits
<p><b>Creamy (9)</b> Sweet (9) Hot (6) Watery (4) <b>Rich (3)</b> <b>Smooth (3)</b> Warm (3) Frothy (3) Brown (2) Coffee (2) Coffee smell (2) <b>Delicious (2)</b> Thick (2) Very Sweet (2) Artificial Authentic Black Cheap Chocolaty Dark chocolate Hot cocoa Milk smell Creamer Different Foamy Hyper from caffeine Too sweet &amp; not enough flavor Sugary Knock off Looks watered down Watery brown Thin Lumps at bottom Not rich in flavor Nutty Powdery Vanilla Yummy Smells more like coca vs. espresso Won't have the same foam as picture</p>	<p>Camping (3) Fireplace (3) Comfortable chair (2) Coffee Shop (2) Kitchen(2) At my table looking out the window Den Reading room Family room/Living room Dorm room College café Cabin Christmas Starbucks Seattle Northwest Mountain Snow McDonald's Denny's restaurant Bistro Downtown bus station Grocery store Sipping on coffee My favorite mug Talking to friends Frothy Thick Reading Inviting Night time/evening Cold and wintery Foreign country Spilling coffee in a tippy Styrofoam cup Drinking while watching TV at night At work during break to get revved up</p>	<p>Friends (3) Mother (2) Family Child Camping Oregon Coast Cabin on Mt. Bachelor Drinking cappuccinos for breakfast Seattle Coffee downtown Coffee shop in college Hair salon At home Laughing Talking Cold morning Drinking this product to feel warm Relaxing Drinking warm beverages after skiing Winter In the lodge after skiing when in college Church classes In my dorm room in college Late nights studying College care package Christmas in front of the fire</p>	<p>Calm (4) <b>Relaxing (3)</b> Satisfying (3) Happy (2) Excited (2) Content (2) Disappointment (2) Revved up Invigorated Energizing Comfort Warm and fuzzy all over Delight Relief Not stressed Desire Contempt Low expectations Sickly</p>	<p>Energizing (3) Satisfy my sweet tooth (2) Low-calorie (2) Make me feel better (2) Good when I get tired of tea (adds variety) Replace typical dessert Smile and say MMMM Keep me focused Filling Sate me Make me ill Make me full Get fat Make me sweat Warm me up inside</p>

**CONCEPT**  
 Make a **delicious** cup of **rich** and **creamy** cappuccino in a variety of silky **smooth** flavors.  
 Perfect to **relax** with and maybe even to dream by.  
 Try all our **delicious** drinks –in a wide variety of flavors to indulge your senses.



# Concept Generated Terms

Product Characteristics	Images	Memories	Emotions	Perceived Benefits
Creamy (9) Sweet (9) Hot (6) Watery (4) Rich (3) Smooth (3) Warm (3) Frothy (3) Brown (2) Coffee (2) Coffee smell (2) Delicious (2) Thick (2) Very Sweet (2) Artificial Authentic Black <b>Cheap</b> Chocolaty Dark chocolate Hot cocoa Milk smell Creamer Different Foamy Hyper from caffeine <b>Too sweet &amp; not enough flavor</b> Sugary Knock off <b>Looks watered down</b> <b>Watery brown</b> Thin <b>Lumps at bottom</b> <b>Not rich in flavor</b> Nutty Powdery Vanilla Yummy Smells more like coca vs. espresso <b>Won't have the same foam as picture</b>	Camping (3) Fireplace (3) Comfortable chair (2) Coffee Shop (2) Kitchen(2) At my table looking out the window Den Reading room Family room/Living room Dorm room College café Cabin Christmas Starbucks Seattle Northwest Mountain Snow McDonald's Denny's restaurant Bistro Downtown bus station Grocery store Sipping on coffee My favorite mug Talking to friends Frothy Thick Reading Inviting Night time/evening Cold and wintery Foreign country Spilling coffee in a tippy Styrofoam cup Drinking while watching TV at night At work during break to get revved up	Friends (3) Mother (2) Family Child Camping Oregon Coast Cabin on Mt. Bachelor Drinking cappuccinos for breakfast Seattle Coffee downtown Coffee shop in college Hair salon At home Laughing Talking Cold morning Drinking this product to feel warm Relaxing Drinking warm beverages after skiing Winter In the lodge after skiing when in college Church classes In my dorm room in college Late nights studying College care package Christmas in front of the fire	Calm (4) Relaxing (3) Satisfying (3) Happy (2) Excited (2) Content (2) <b>Disappointment (2)</b> Revved up Invigorated Energizing Comfort Warm and fuzzy all over Delight Relief Not stressed Desire <b>Contempt</b> <b>Low expectations</b> <b>Sickly</b>	Energizing (3) Satisfy my sweet tooth (2) Low-calorie (2) Make me feel better (2) Good when I get tired of tea (adds variety) Replace typical dessert Smile and say MMMM Keep me focused Filling Satisfy me <b>Make me ill</b> Make me full <b>Get fat</b> Make me sweat Warm me up inside

Some of the terms show skepticism or low expectations

Based on previous experience

Respondents recruited as "coffee drinkers"



## Terms Added After Concept


Ideal	Decaf	Mocha	Hazelnut	English Toffee
Fat Free	Bitter	Tastes Artificial	Tastes Artificial	Tastes Artificial
Bitter	Artificial	Chocolate	Bitter	Watery
Rich Flavor	Sweetener	Chemical	Terrible (E)	Bitter
Roasted	Chocolate	Bitter	Soapy Bubbles (I)	No Flavor
Nutty	Nasty Sweet Film	Totally Gross	Toffee	
	Rich Flavor	Marshmallow	Strong Coffee	
	Coffee Taste	Lucky Charm	Bad	
	Thick	Cereal (I)	Nutty	
		Strong Odor	Dirt	
		No Flavor	Too Light	

Only a few terms added for ideal

Terms added are per individual

Most added terms are product characteristics – shows mindset is more analytical but some emotions come in product characteristics too (Nasty Sweet Film)



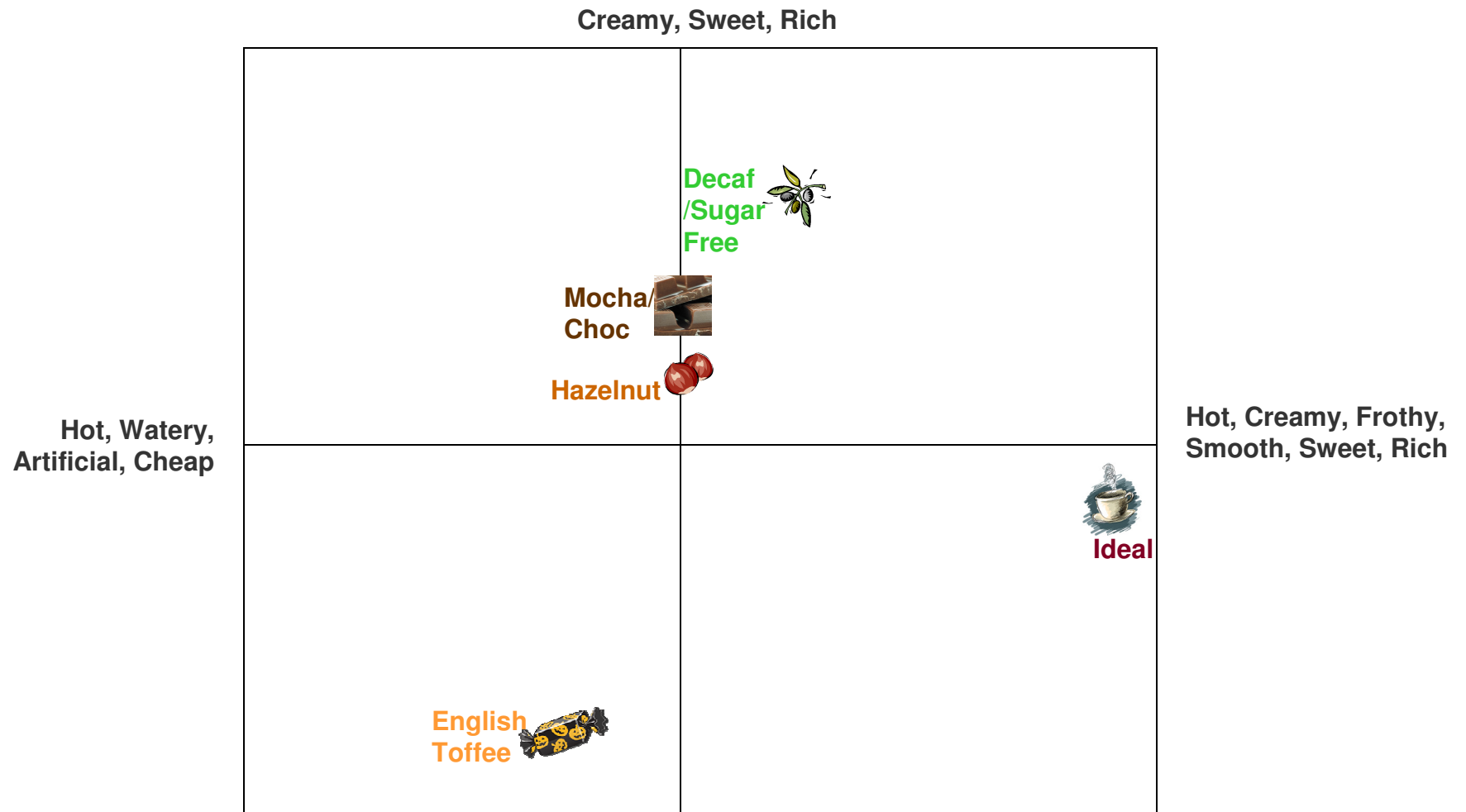


Words - so innocent  
and powerless as they  
are, as standing in a  
dictionary, how potent  
for good and evil they  
become in the hands  
of one who knows how  
to combine them.

Nathaniel Hawthorne

**GPA Analysis**  
with all descriptors

# Product Characteristics

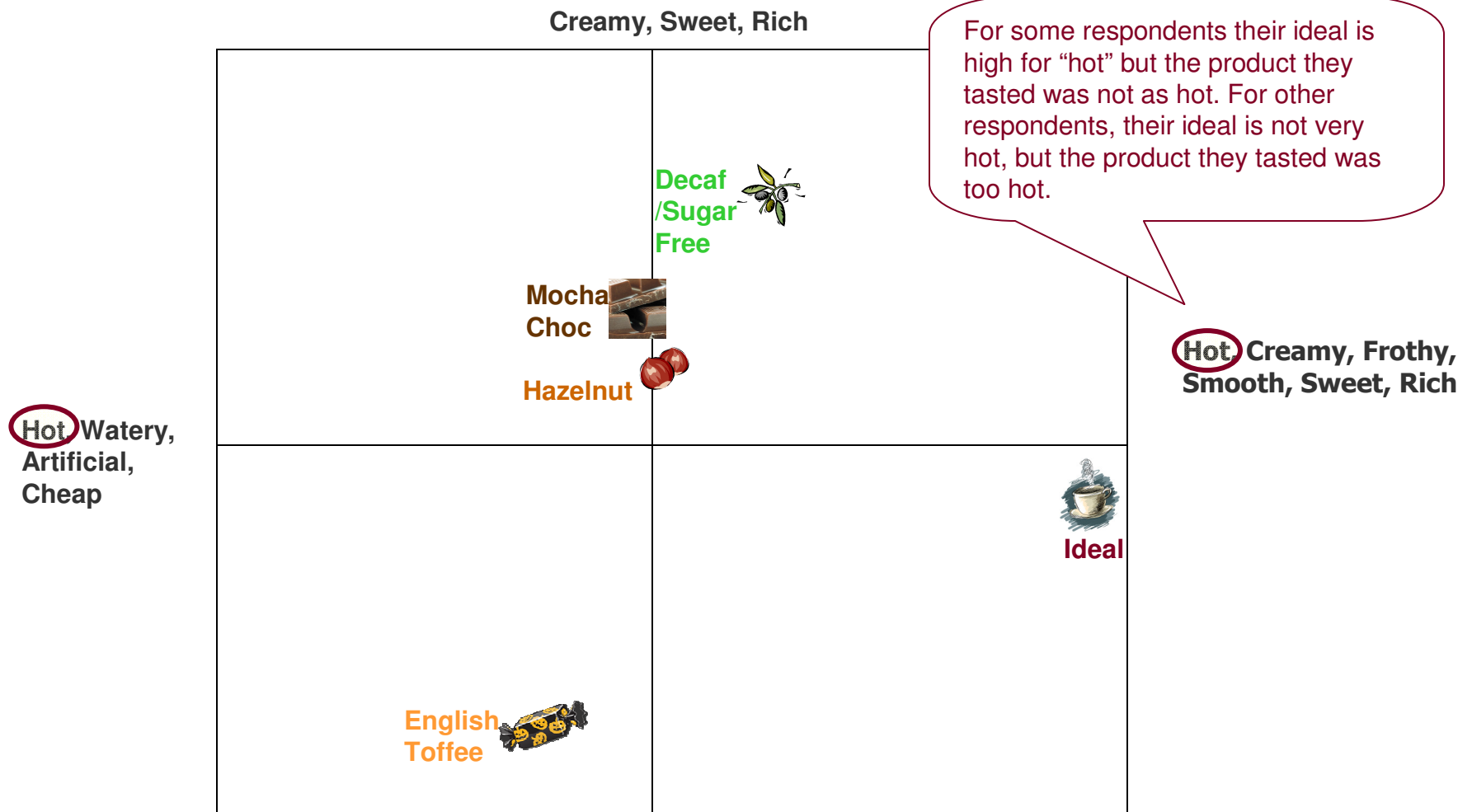


\*=terms added after concept





# Product Characteristics

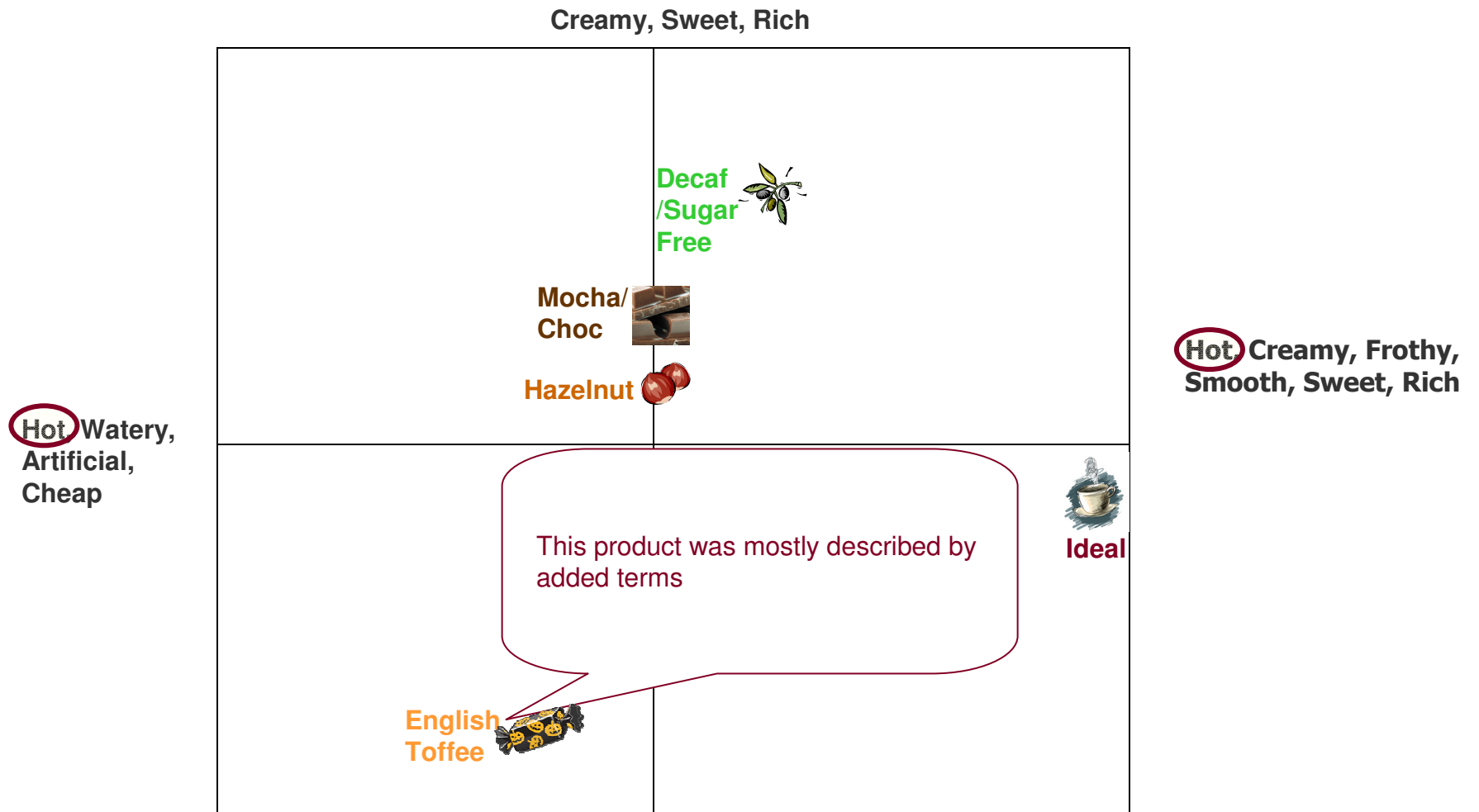


\*=terms added after concept

Dark Chocolate,  
Chocolate\*,  
Chemical\*, Bad\*



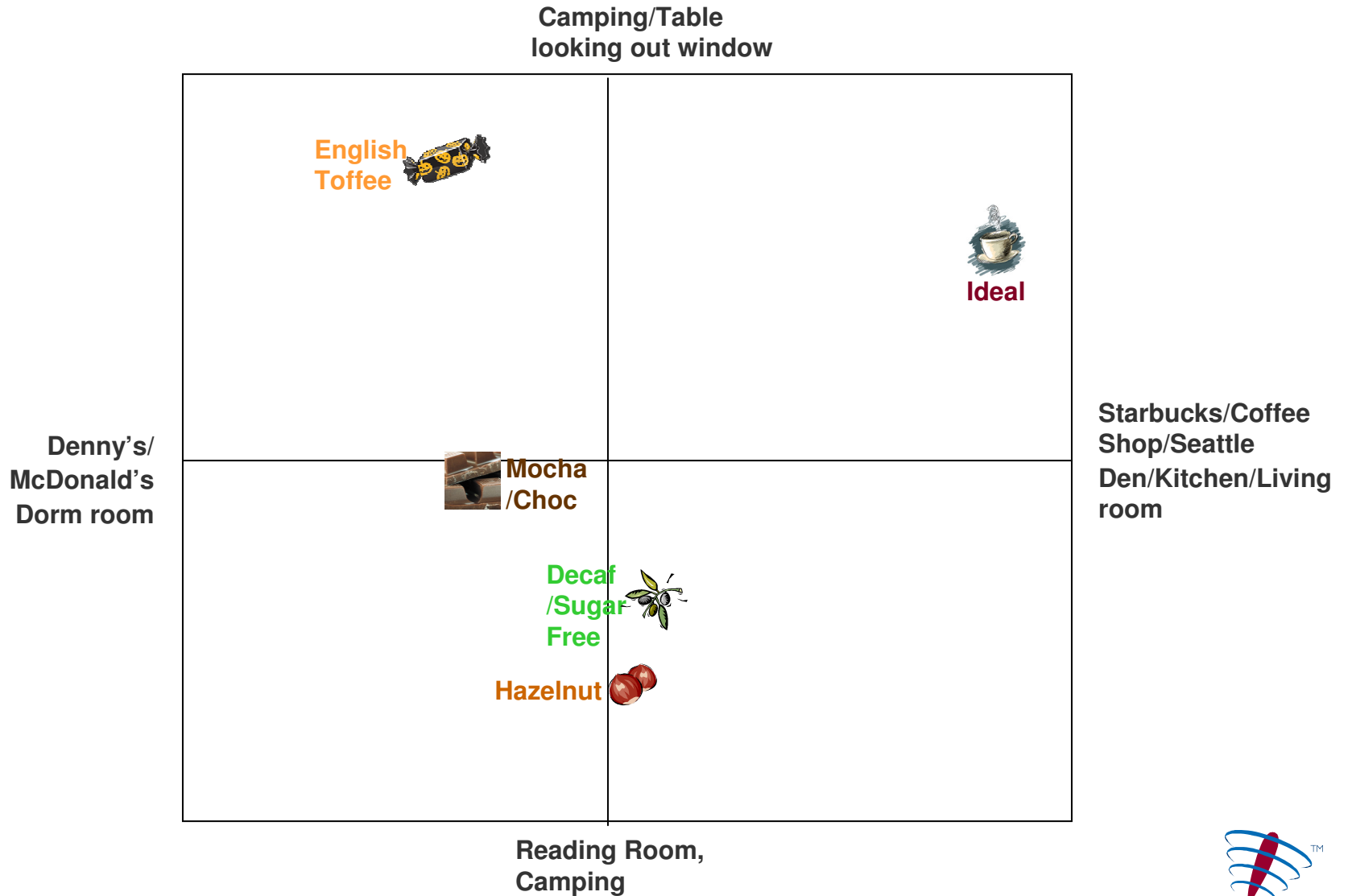
# Product Characteristics



\*=terms added after concept



# Images



# Memories

Christmas  
in front of fire

English  
Toffee



Hazelnut



Ideal

College care package  
Dorm room

Oregon  
Coast/Vacation  
Talking/Laughing  
Home/Coffee shop in  
college

Mocha/  
Choc

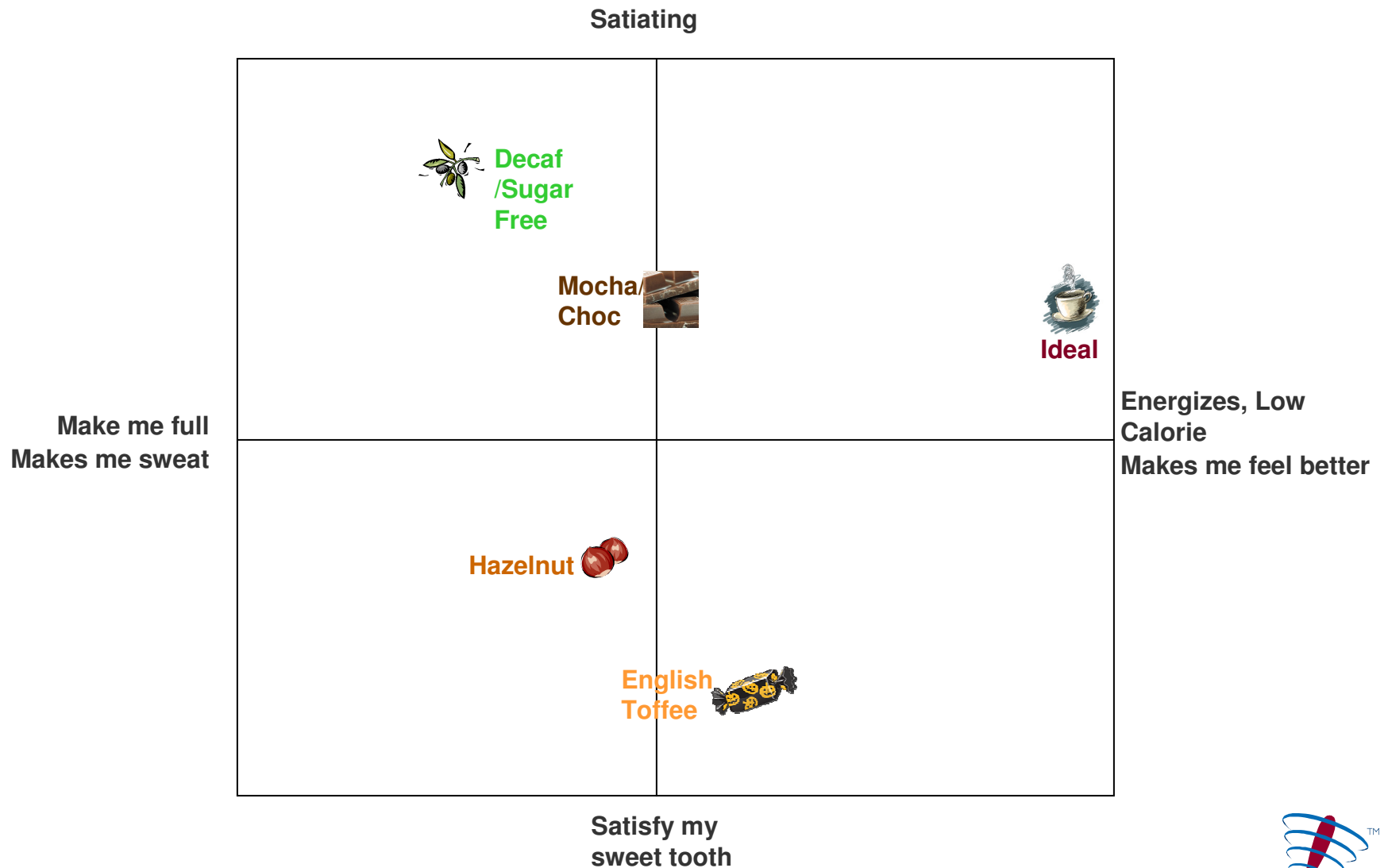


Decaf  
/Sugar  
Free

Winter

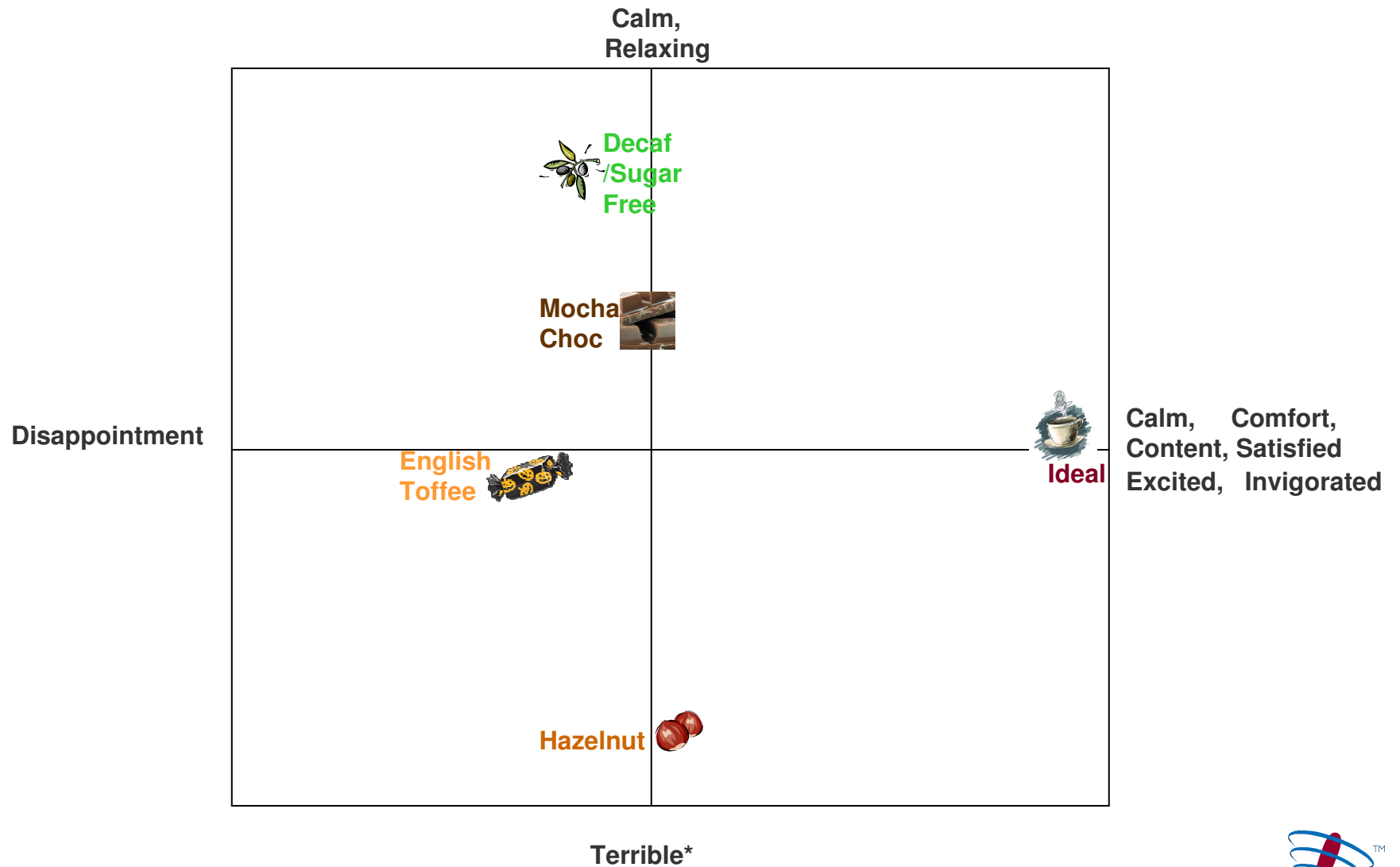


# Perceived Benefits





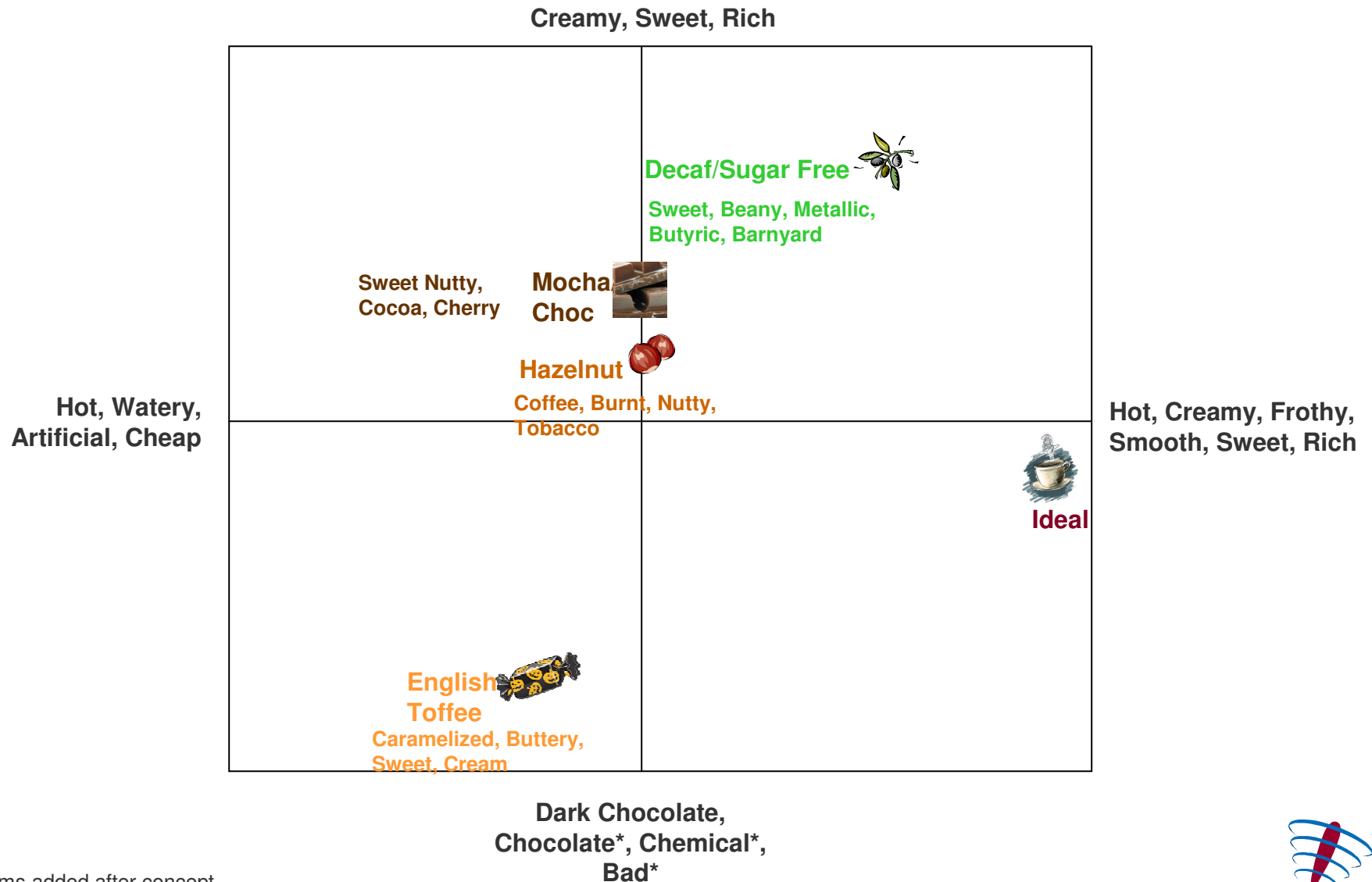
# Emotions



\*=terms added after concept



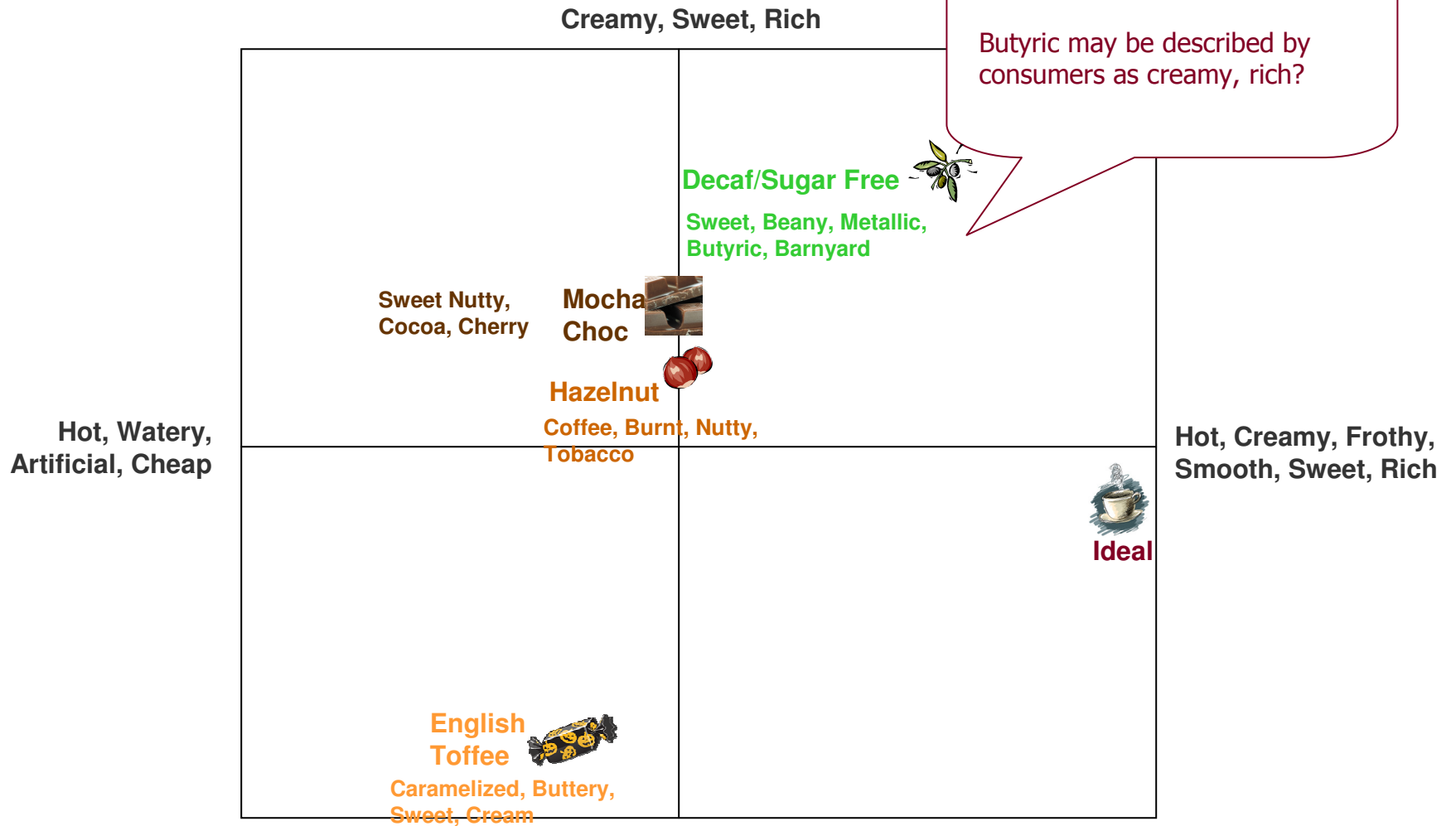
# Product Characteristics with Descriptive Analysis



\*=terms added after concept



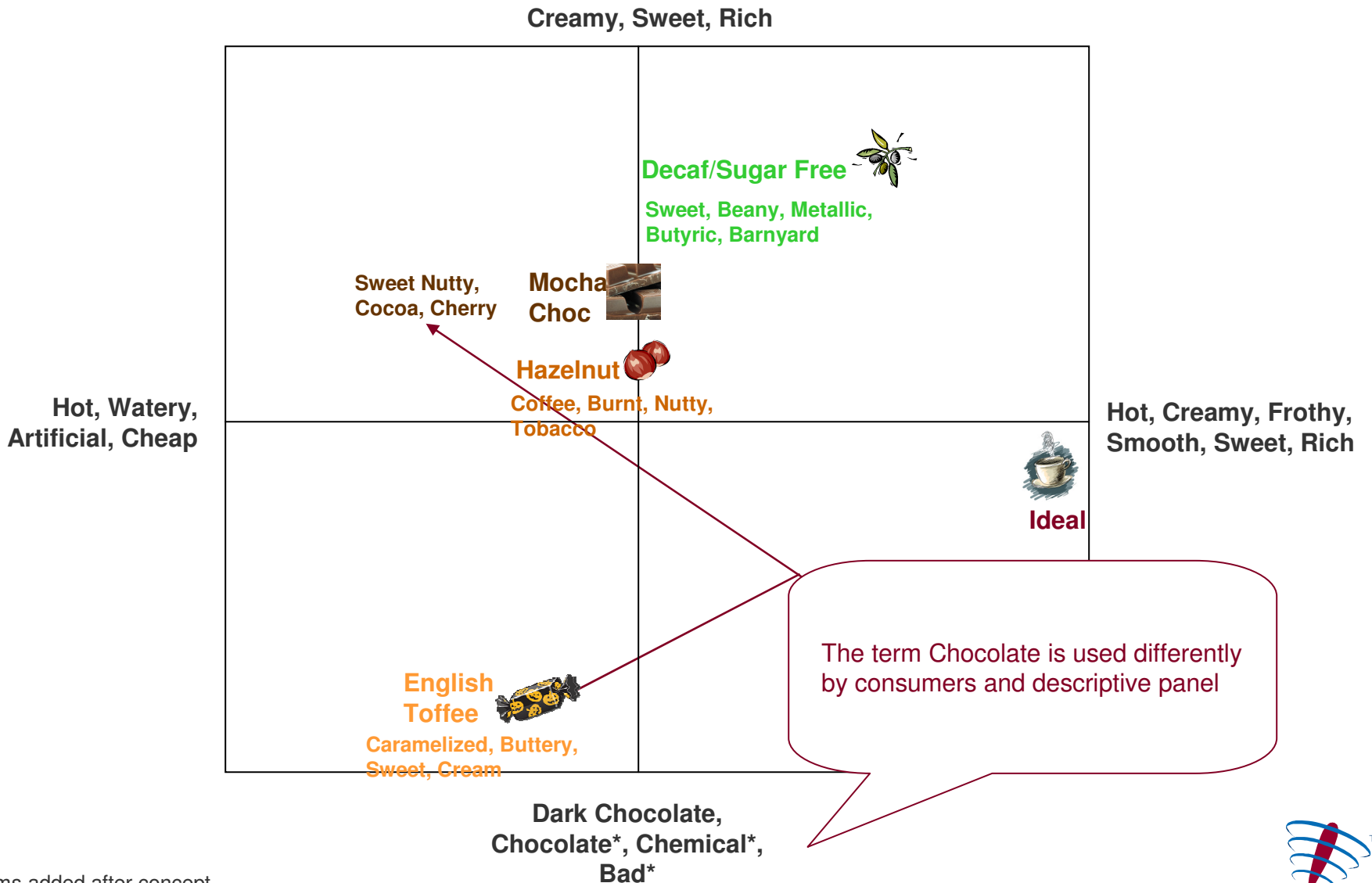
# Product Characteristics with Descriptive Analysis



\*=terms added after concept








# Product Characteristics with Descriptive Analysis



\*=terms added after concept



# Summary of Product Attributes

	 <b>Ideal product</b>	 <b>Decaf/Sugar Free</b> (sweet, beany, metallic, butyric, barnyard)	 <b>Mocha</b> (sweet, nutty, cocoa, cherry)	 <b>Hazelnut</b> (coffee, burnt, nutty, tea/tobacco)	 <b>English Toffee</b> (caramelized, buttery, sweet)
<b>Product</b>	Hot, Creamy, <b>Frothy</b> , <b>Smooth</b> , Sweet, Rich	Creamy, Sweet, Rich	Creamy, Sweet, Rich, Hot, Watery, Artificial, Cheap	Creamy, Sweet, Rich, Hot, Watery, Artificial, Cheap	Hot, Watery, Artificial, Cheap, Dark Chocolate /Chocolate*, Chemical*, Bad*
<b>Images</b>	Starbucks/Coffee Shop/Seattle, Den/Kitchen/Living room	Reading Room, Camping	Reading Room, Camping	Reading Room, Camping	Denny's/McDonalds, Dorm room, Camping, Table looking out window
<b>Memories</b>	Oregon Coast Vacation, Talking/Laughing, Home/Coffee shop	Winter	Winter	College care package, Dorm Room, Christmas in front of fire	College care package, Dorm Room
<b>Emotions</b>	Calm, Comfort, Content, Satisfied, Excited, Invigorated	Calm, Relaxing	Calm, Relaxing, Disappointment	Terrible*	Disappointment
<b>Perceived Benefits</b>	Energizes, Low Calorie, Makes me feel better	Satiating		Satisfy my sweet tooth, makes me full, makes me sweat	Satisfy my sweet tooth



## Summary

Respondents were able to elicit product, image, memories, emotive and perceived benefit attributes based on reading a concept.

The ideal product may be described as:

- Hot, Creamy, Frothy, Smooth, Sweet, Rich (product)
- Starbucks/Coffee Shop/Seattle, Den/Kitchen/Living room (images)
- Oregon Coast/Vacation, Talking/Laughing, Home/Coffee shop in college (memories)
- Calm, Comfort, Content, Satisfied, Excited, Invigorated (emotions)
- Energizes, Low Calorie, Makes me feel better (perceived benefits)

The prototypes tested were not associated with the ideal product. Instead, they were characterized by:

- Watery, Artificial, Cheap (product)
- Camping, McDonald's, Denny's (images)
- Winter, College care package, Dorm room (memories)
- Calm, Relaxing, Disappointment, (emotions)
- Satisfies sweet tooth, satiating (perceived benefits).



## Summary

This methodology demonstrated how it is possible to go beyond functional characteristics of concepts and products.

- Respondents went beyond the written concept in developing terms
- Respondents were able to move outside of the typical analytical mode to generate meaningful attributes outside of product characteristics

Additional insight was obtained that could be used to modify the concept, to include applicable images and memories.

- The concept could also be expanded with images of people enjoying the product with others and perhaps outdoor scenery with mountains, cabins in the background

The results may be used to suggest changes in the prototypes:

- The products need to be creamy, frothy, smooth, and rich in order to fit with the images, emotions and benefits of the ideal product





## Potential Next Steps

### Other categories could be explored using Free Association

- Social context of product usage
- Include category to describe who else would be with you when using this product, what occasions you would use the product for.
- Or conduct the research in a social setting so that actual context is included.

Thanks to Greg Stucky, Natosha Simpson and Mike Perozzi from InsightsNow, Inc.

Questions?

Conversation would be vastly improved by the constant use of four simple words: I do not know. - Andre Maurois





**InsightsNow, Inc. | 1600 SW Western Blvd. | Suite #350 | Corvallis, OR 97333**

**541.757.1404 | Fax 541.757.1402 | [www.InsightsNow.com](http://www.InsightsNow.com)**

