Emotion measurement for products:
the current state of the art

Dr. Herb Meiselman
Herb Meiselman Training and Consulting Services - Rockport, MA, USA
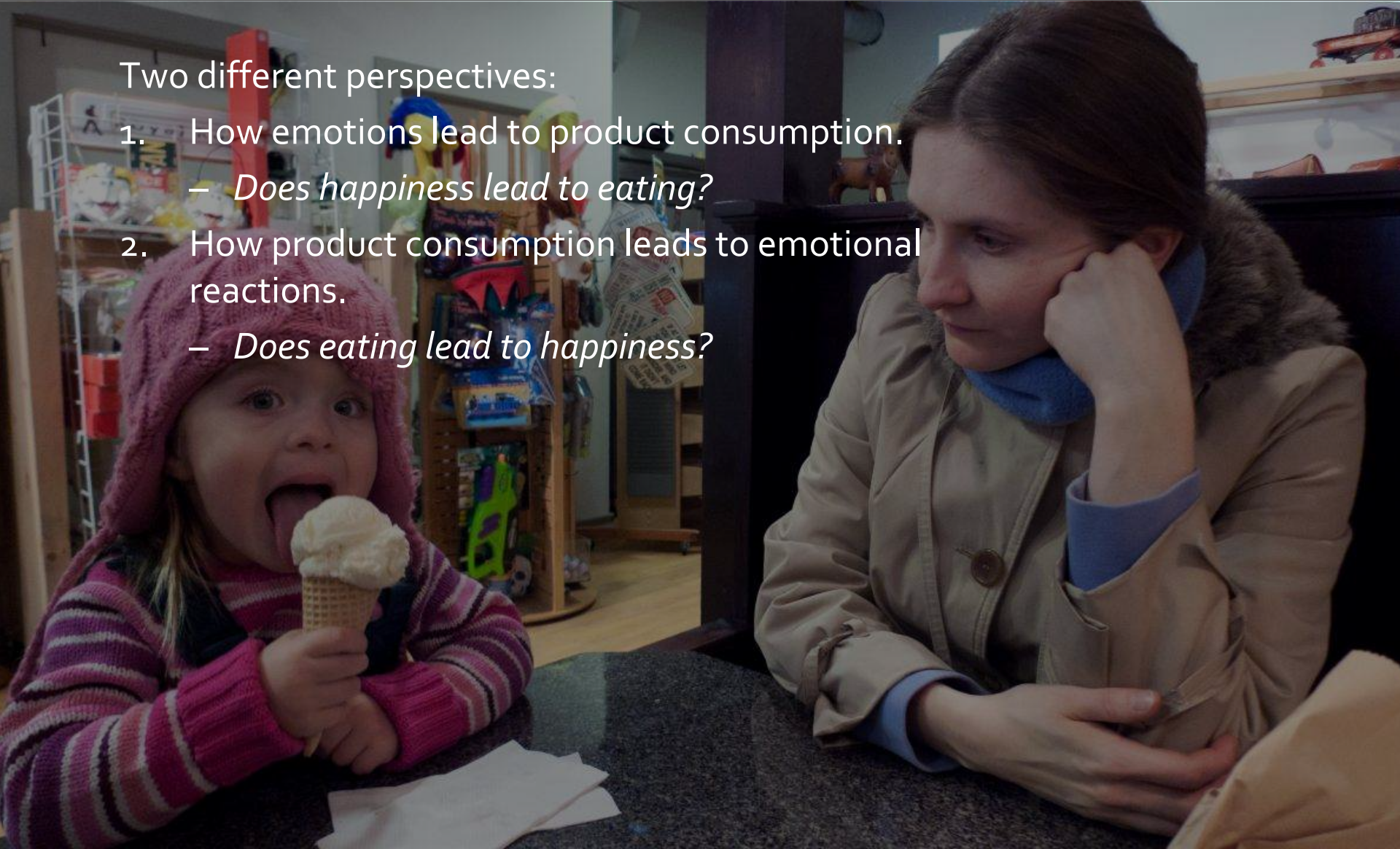herb@ herbmeiselman.com

herb@herbmeiselman.com

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Growing interest in emotions

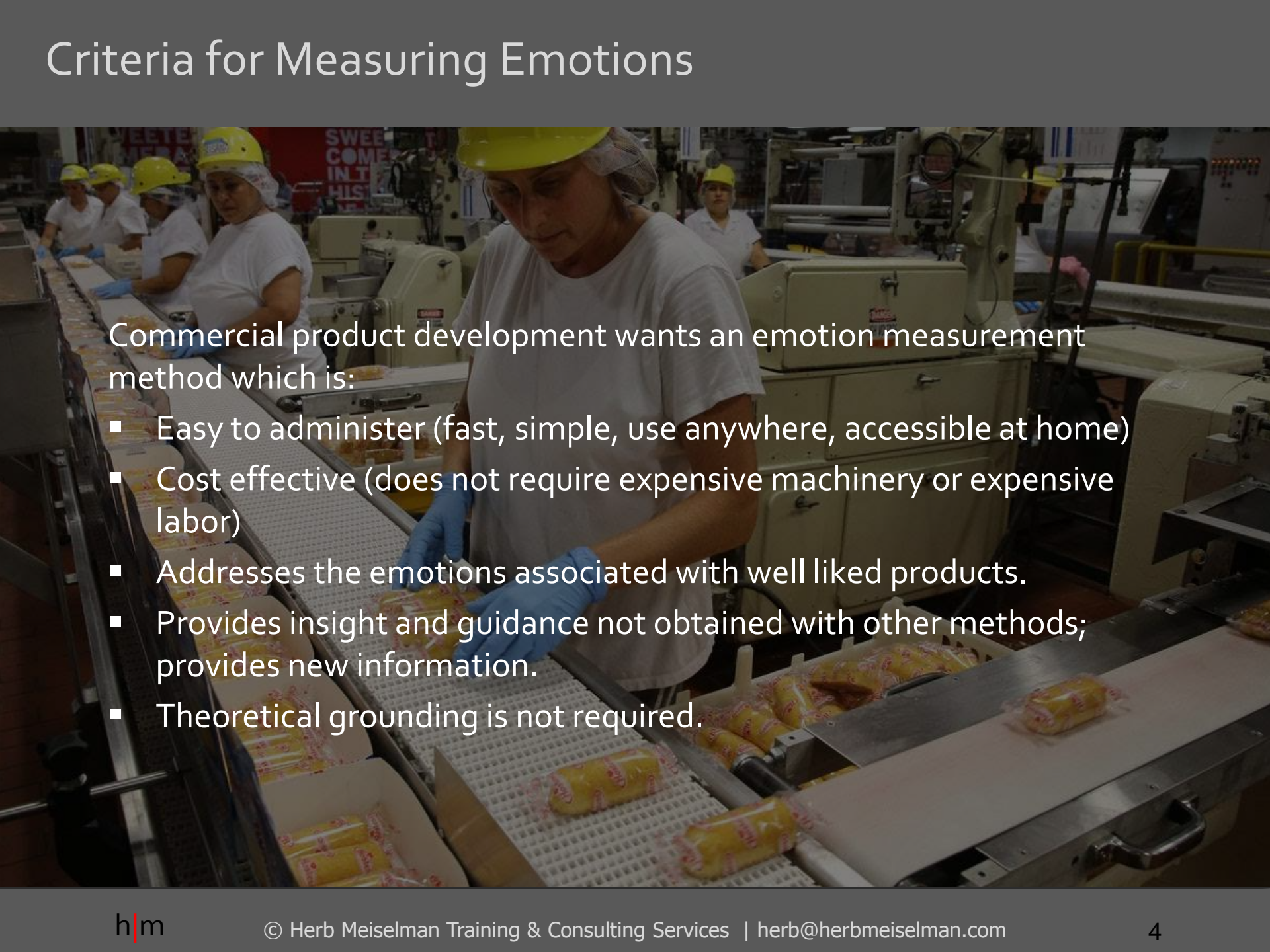Two different perspectives:

1. How emotions lead to product consumption.
   - *Does happiness lead to eating?*

2. How product consumption leads to emotional reactions.
   - *Does eating lead to happiness?*

No Standards

- There are no standard methods for measuring emotional responses in the context of products
- This lack of standard methods is almost unique in the field of sensory and consumer research.
- The background of the field is in clinical psychology, making it very negative.

Criteria for Measuring Emotions

Commercial product development wants an emotion measurement method which is:
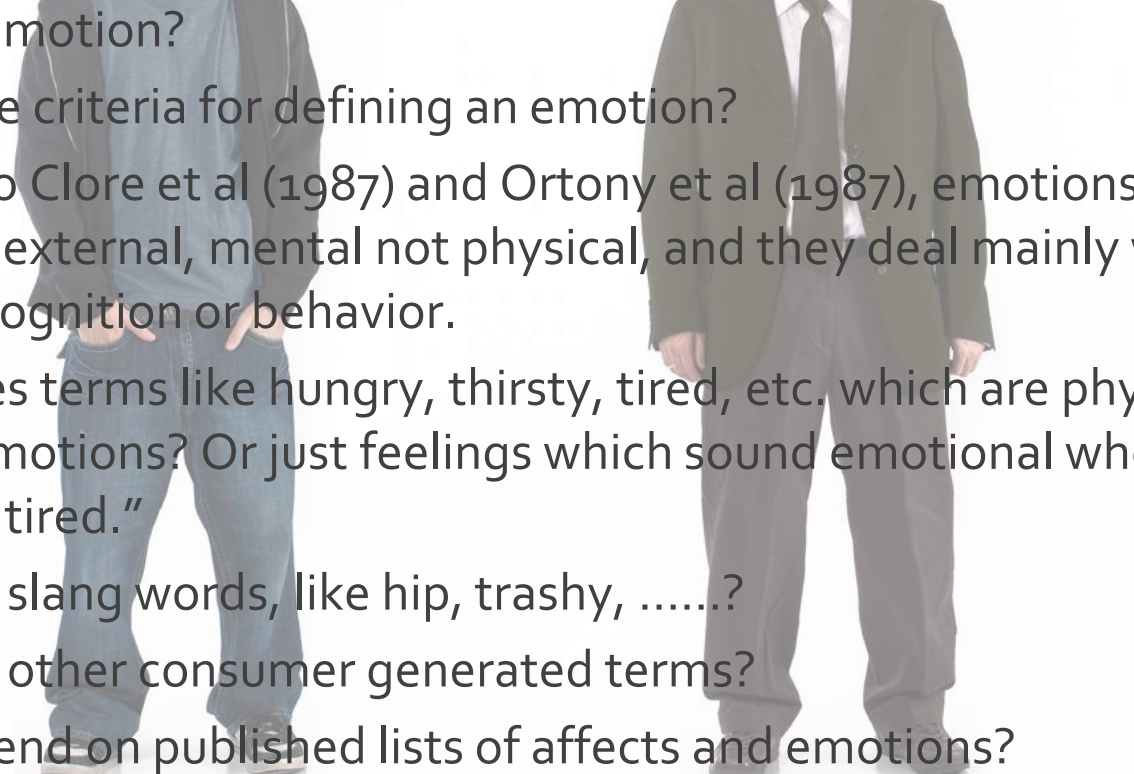
- Easy to administer (fast, simple, use anywhere, accessible at home)
- Cost effective (does not require expensive machinery or expensive labor)
- Addresses the emotions associated with well liked products.
- Provides insight and guidance not obtained with other methods; provides new information.
- Theoretical grounding is not required.

Measuring Emotions:

Measuring Emotions –

- Defining emotion – consumer or professional
- Positive and negative emotions
- Large or small numbers of emotions
- Method: Questionnaire or facial or physiological or behavioral.
- Internet studies of emotions
- When to test emotions: before, during or after a product
- Emotions and Health and Wellness
- Cross cultural and global perspective: Does everyone globally have the same feelings and express them the same way?

Defining emotion – consumer or professional?

- What is an emotion?

- What are the criteria for defining an emotion?

- According to Clore et al (1987) and Ortony et al (1987), emotions are internal not external, mental not physical, and they deal mainly with affect, not cognition or behavior.

- This removes terms like hungry, thirsty, tired, etc. which are physical. Are these emotions? Or just feelings which sound emotional when one says, "I feel tired."

- What about slang words, like hip, trashy, ……?

- What about other consumer generated terms?

- Can we depend on published lists of affects and emotions?

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Emotion and mood

Some basic terms:

- Traits – enduring parts of personality.
  (Ex: food neophobia, reluctance to try novel foods)
- <u>Affective behaviors (feelings):</u>
- <u>Attitudes</u> – evaluative comments
  (Ex: I like cola drinks)
- <u>Emotions</u> – brief, intense, focused on a referent
  (Ex. Anxiety)
- <u>Moods</u> – more enduring, build up gradually, diffuse, not focused on a referent.
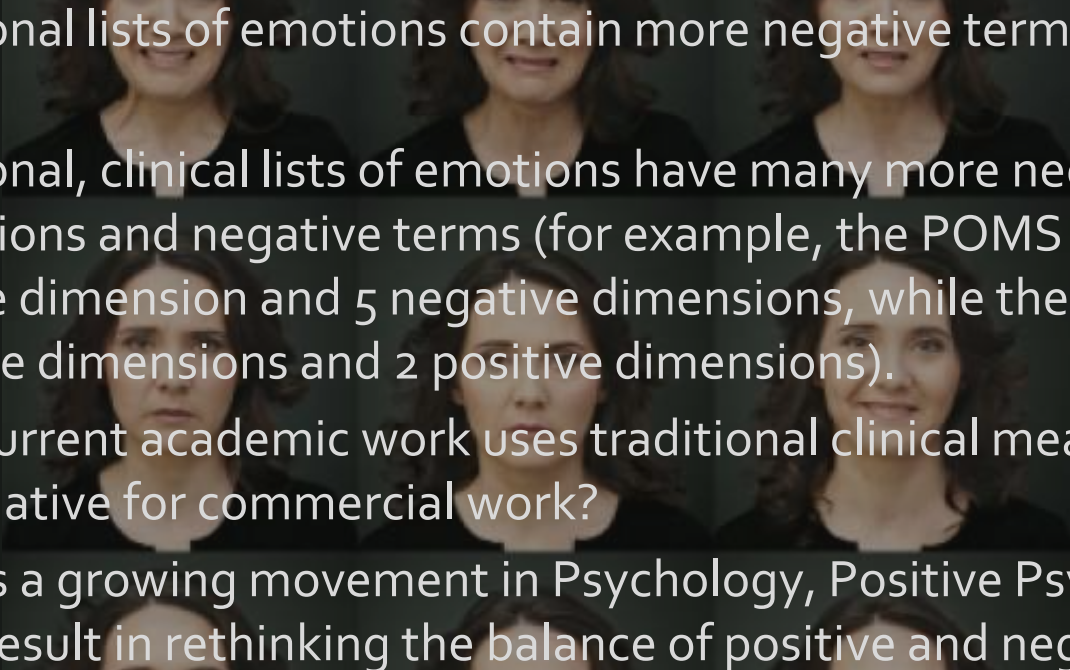 (Ex: I feel happy)

There are many lists and organizations of emotions.

- **Laros and Steenkamp (2005)** list 173 negative and 143 positive emotions drawn from the literature, and further list 39 "basic emotions" also drawn from the literature.
- **Ortony, Clore and Foss (1987)** list 261 emotion terms. Starting with a list of 585 "emotion" words, they first identified 307 affective terms, and then 261 emotions which met criteria of being internal, mental, and affective.
- **The Linguistic Inquiry and Word Count (LIWC) (2001)** used in on line research, contains 2290 words in 74 categories including 615 emotional/affective terms including 251 positive emotions, 345 negative emotions.
- **The French Emotional Evaluation List (FEEL) (2012)** contains 835 feeling words in French and English.

Do current commercial methods limit emotion terms to lists of emotions?

EMOTIONS - Laros & Steenkamp							
	L&S	GEOS	ScentMove	EsSense	Nestle	Ital.Wine	Thomson
Positive	140						
included		15	10	19	21	10	12
missing		11	4	15	4	2	11
Negative	173						
included		5	3	4	10	2	19
missing		4	1	1	1	2	17
EMOTIONS - Ortony & Clore							
included		14	9	16	25	9	24
missing		22	9	23	11	7	35
note: some words not identical							

Positive and Negative Emotions

- Traditional lists of emotions contain more negative terms than positive terms.
- Traditional, clinical lists of emotions have many more negative dimensions and negative terms (for example, the POMS has only one positive dimension and 5 negative dimensions, while the MAACL has 3 negative dimensions and 2 positive dimensions).
- Much current academic work uses traditional clinical measures; are they too negative for commercial work?
- There is a growing movement in Psychology, Positive Psychology, which might result in rethinking the balance of positive and negative emotions.

Positive and Negative Emotions

- **Desmet and Schifferstein (2008) showed a hedonic asymmetry**, a predominantly positive attitude toward most consumer products.

- This becomes especially clear when research focuses on **product users**, as done in industry, rather than convenience samples, as often done in academia.

- To date, all newer **commercial emotion questionnaires have more positive emotions than negative emotions.**

- **Many facial and physiological measures work better with negative emotions**; i.e. they discriminate different negative emotions, but do not discriminate different positive feelings.

Eating is basically a positive experience
Are all consumer products positive?

Study 1. When participants described their recollected past food experiences, all pleasant emotions were reported to be experienced more often than all unpleasant emotions (Desmet and Schifferstein, 2008)
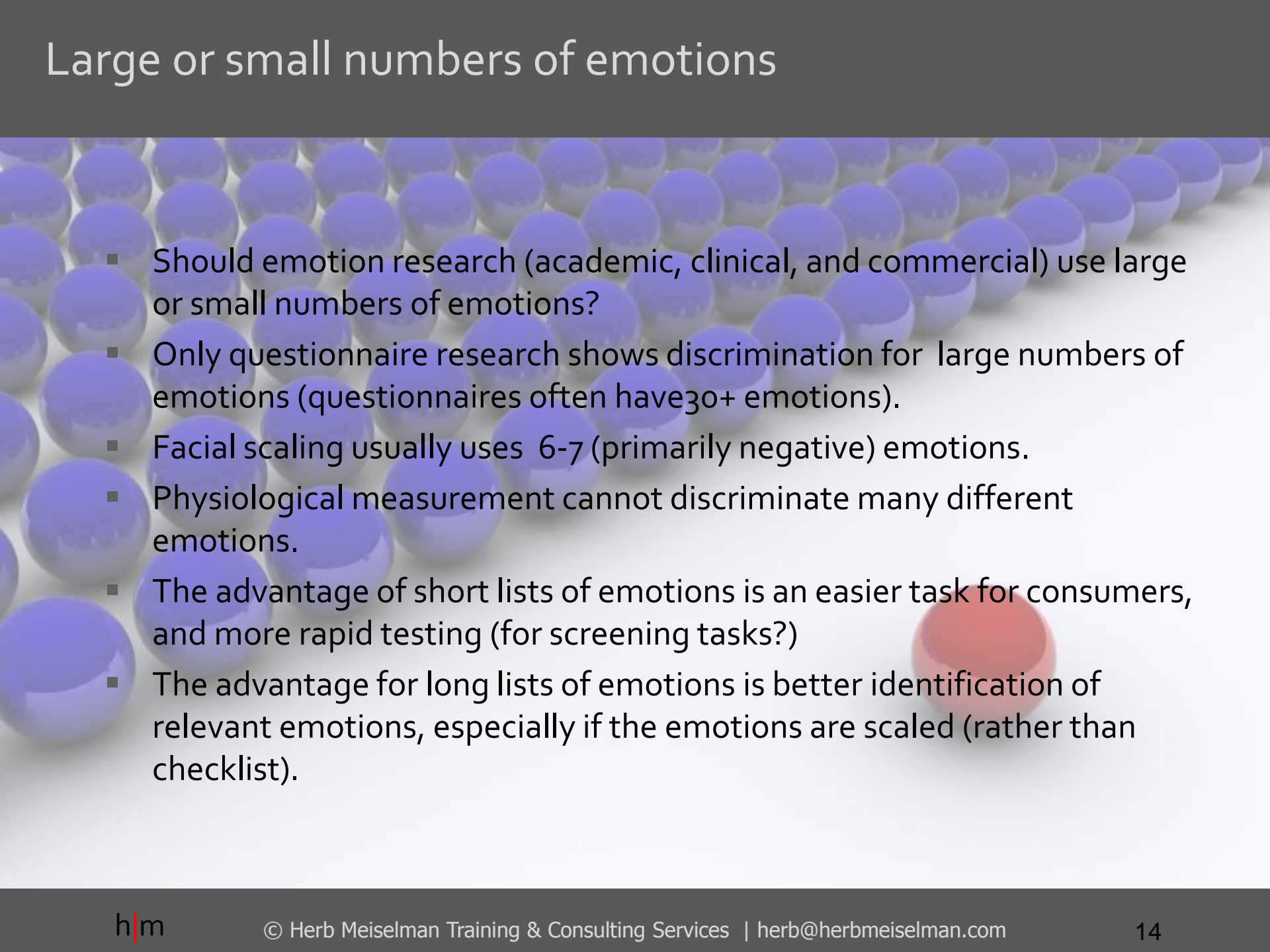
Table 1
Mean relevance ratings and mean number of examples given for 22 emotion types in relation to tasting or eating food

Pleasant emotions $M = 3.31$				Unpleasant emotions $M = 1.98$			
Emotion	M	SD	M # examples	Emotion	M	SD	M # examples
Satisfaction	4.38	0.73	1.31	Boredom	2.52	0.94	0.98
Enjoyment	3.93	0.88	1.07	Disappointment	2.52	0.86	0.95
Desire	3.60	1.13	1.19	Dissatisfaction	2.38	0.85	1.00
Amusement	3.52	0.99	1.48	Disgust	2.10	0.93	1.00
Love	3.29	1.13	1.26	Unpleasant surprise	2.05	0.73	0.93
Stimulation	3.07	1.26	0.93	Shame	2.02	1.00	0.88
Pleasant surprise	3.05	1.17	1.02	Contempt	1.90	0.98	0.79
Relief	3.05	0.82	0.98	Fear	1.71	0.92	0.88
Admiration	3.00	0.99	0.93	Sadness	1.66	0.85	0.67
Hope	2.81	1.25	0.95	Anger	1.60	0.77	0.71
Pride	2.71	1.11	0.86	Jealousy	1.31	0.60	0.45

A balance of positive and negative emotions: PANAS

- **Negative Affect (10) afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, distressed**

- **Positive Affect (10) active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, strong**

Large or small numbers of emotions

- Should emotion research (academic, clinical, and commercial) use large or small numbers of emotions?
- Only questionnaire research shows discrimination for large numbers of emotions (questionnaires often have 30+ emotions).
- Facial scaling usually uses 6-7 (primarily negative) emotions.
- Physiological measurement cannot discriminate many different emotions.
- The advantage of short lists of emotions is an easier task for consumers, and more rapid testing (for screening tasks?)
- The advantage for long lists of emotions is better identification of relevant emotions, especially if the emotions are scaled (rather than checklist).

Expanded PANAS-X Scale

General Dimension Scales

- Negative Affect (10) afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, distressed
- Positive Affect (10) active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, strong

Basic Negative Emotion Scales

- Fear (6) afraid, scared, frightened, nervous, jittery, shaky
- Hostility (6) angry, hostile, irritable, scornful, disgusted, loathing
- Guilt (6) guilty, ashamed, blameworthy, angry at self, disgusted with self, dissatisfied with self
- Sadness (5) sad, blue, downhearted, alone, lonely

Basic Positive Emotion Scales

- Joviality (8) happy, joyful, delighted, cheerful, excited, enthusiastic, lively, energetic
- Self-Assurance (6) proud, strong, confident, bold, daring, fearless
- Attentiveness (4) alert, attentive, concentrating, determined
- *Other Affective States*
- Shyness (4) shy, bashful, sheepish, timid
- Fatigue (4) sleepy, tired, sluggish, drowsy
- Serenity (3) calm, relaxed, at ease
- Surprise (3) amazed, surprised, astonished

Note. The number of terms comprising each scale is shown in parentheses.

GEOS: 6 dimensions, 36 terms
ScentMove™ : 6 dimensions/scales, 18 terms

- n=7- "**Sensuality**" - Desire, Romantic, Sensual, In love, Excited, Admiration, Sexy

- n=5 - "**Relaxation**" - Relaxed, Soothed, Reassured, Light, Serene

- n=6 - "**Pleasant feeling**" - Pleasant, Well-being, Pleasantly surprised, Feeling awe, Attracted, Happiness

- n=7 - "**Refreshment**" - Revitalized, Energetic, Refreshed, Stimulated, Invigorated, Shivering, Clean

- n=3 - "**Sensory pleasure**"- Nostalgic, Mouthwatering, Amusement

- n=8 - "**Unpleasant feeling**" - Dirty, Unpleasant, Disgusted, Unpleasantly surprised, Dissatisfaction, Sickening, Irritated, Angry

- **Sensuality** – Romantic, Desire, In love

- **Relaxation** – Serene, Relaxed, Reassured

- **Pleasant feeling** – Happiness, Well-being, Pleasantly surprised

- **Refreshment** – Energetic, Invigorated, Clean

- **Sensory pleasure** - Nostalgic, Amusement, Mouthwatering

- **Unpleasant feeling** – Disgusted, Irritated, Unpleasantly surprised

EsSense Profile[R]:39 terms for describing emotions

Most are positive. Can we reduce the list to 25?
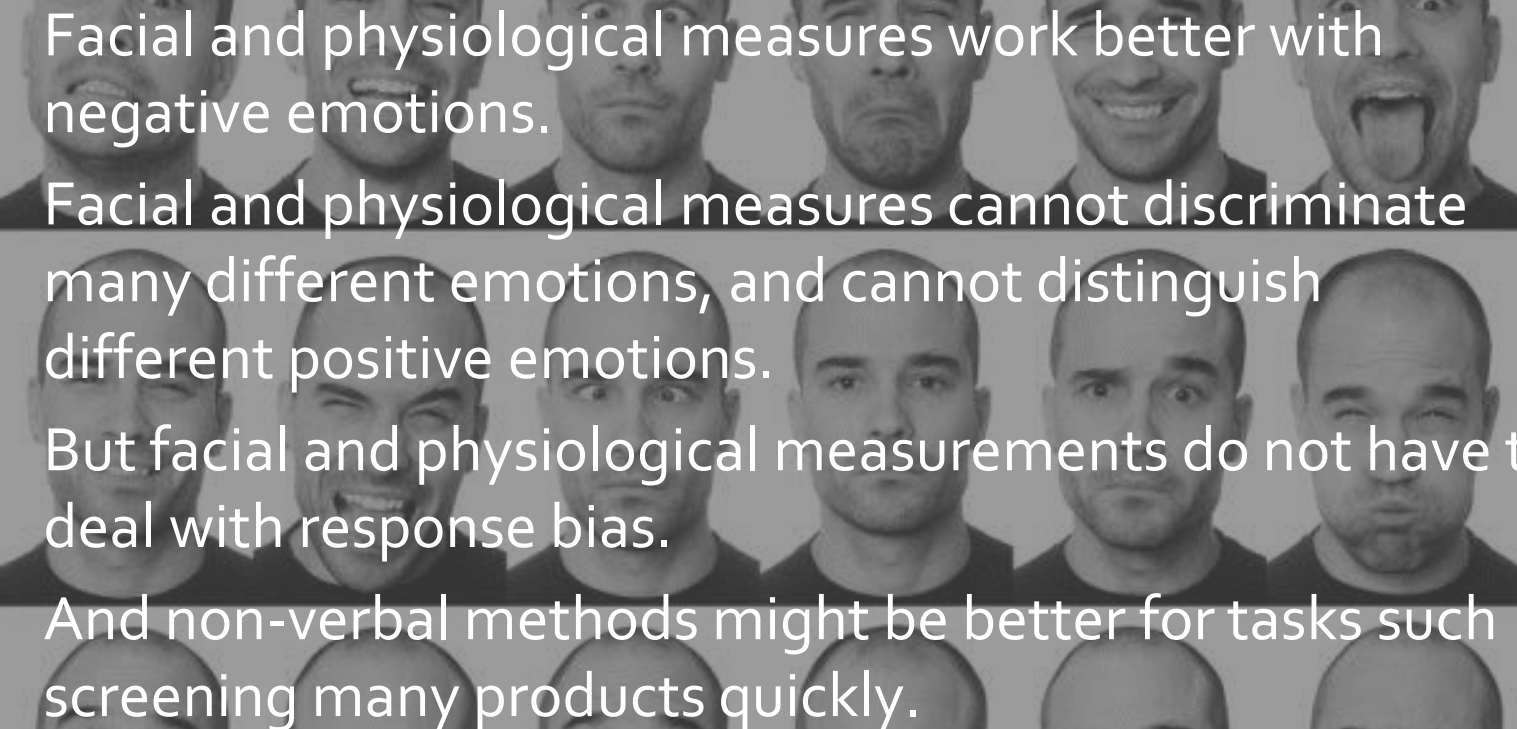
Active	Glad	Pleasant
Adventurous	Good	Polite
Affectionate	Good-natured	Quiet
Aggressive	Guilty	Satisfied
Bored	Happy	Secure
Calm	Interested	Steady
Daring	Joyful	Tame
Disgusted	Loving	Tender
Eager	Merry	Understanding
Energetic	Mild	Warm
Enthusiastic	Nostalgic	Whole
Free	Peaceful	Wild
Friendly	Pleased	Worried

EsSense25: A reduced version of EsSense Profile
## Nestrud, M.A., Meiselman, H.L., King S.C., Lesher L.L. and Cardello, A.V

EsSense Profile	EsSense25	EsSense Profile	EsSense25
Active	Active	Loving	Loving
Adventurous	Adventurous	Merry	
Affectionate		Mild	Mild
aggressive	Aggressive	Nostalgic	Nostalgic
Bored	Bored	Peaceful	
Calm	Calm	Pleasant	Pleasant
Daring		Pleased	
Disgusted	Disgusted	Polite	
Eager	Enthusiastic	Quiet	
Energetic		Satisfied	Satisfied
Enthusaistic		Secure	Secure
Free	Free	Steady	
Friendly		Tame	Tame
Glad		Tender	
Good	Good	Understanding	Understanding
Good Natured	Good Natured	Warm	Warm
Guilty	Guilty	Whole	
Happy	Happy	Wild	Wild
Interested	Interested	Worried	Worried
Joyful	Joyful		

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- Facial and physiological measures work better with negative emotions.
- Facial and physiological measures cannot discriminate many different emotions, and cannot distinguish different positive emotions.
- But facial and physiological measurements do not have to deal with response bias.
- And non-verbal methods might be better for tasks such screening many products quickly.
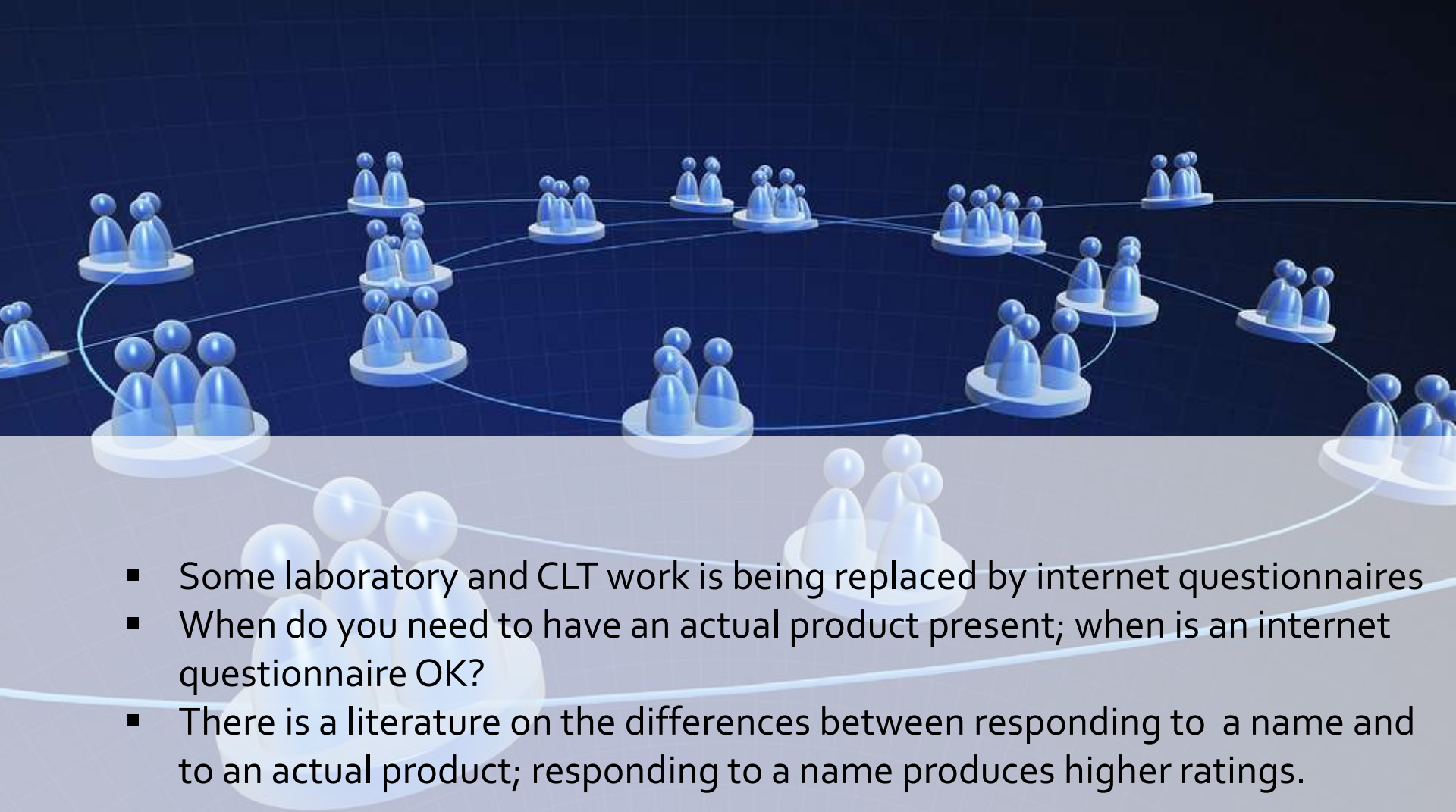
- Some laboratory and CLT work is being replaced by internet questionnaires
- When do you need to have an actual product present; when is an internet questionnaire OK?
- There is a literature on the differences between responding to a name and to an actual product; responding to a name produces higher ratings.

Mining Social Media: n = 509,000,000!

- Text analysis of Twitter messages provides a detailed <u>measure of individuals' spontaneous affective expressions across the globe</u>.

- We <u>measured PA (positive affect) and NA (negative affect) using Linguistic Inquiry and Word Count (LIWC),</u> a prominent lexicon for text analysis. LIWC contains lists of 2290 words or word stems that measure 64 behavioral and psychological dimensions, including PA and NA...

- We analyzed changes in hourly, daily, and seasonal affect at the individual level in <u>84 identified countries</u>. <u>In contrast to the self-report methodology used in offline studies, these measures were not prompted by an experimenter, or recollected after the fact</u>. Rather, they were directly obtained from comments composed by the individuals in real time, and are therefore less vulnerable to memory bias and experimenter demand effects.

- 509 million messages from <u>2.4 million individuals world-wide</u>

- Reference: Golder, S.A. and Macy, M.W. (2011) Science, Vol. 333 no. 6051 pp. 1878-1881

- Reference: J. W. Pennebaker, M. E. Francis, R. J. Booth, (2001) LIWC (Erlbaum, Mahwah, NJ)

LIWC (Linguistic Inquiry and Word Count)

LIWC 2001			
Dimension	Abbrev.	Examples	#words
II. Psychological Processes			
Affective/Emotional	affect	happy, ugly,bitter	615
Positive Emotions	posemo	happy,pretty,good	261
positive feelings	posfeel	happy,joy,love	43
optimism and energy	optim	certainty,pride,win	69
Negative Emotions	negemo	hate,worthless,enemy	345
anxiety or fear	anx	nervous,afraid,tense	62
anger	ang	hate,kill,pissed	121
sadness or depression	sad	grief,cry,sad	72
LIWC dictionary contains 2290 words in 74 categories.			

Fig. 1 Hourly changes in individual affect broken down by day of the week (top, PA; bottom, NA).
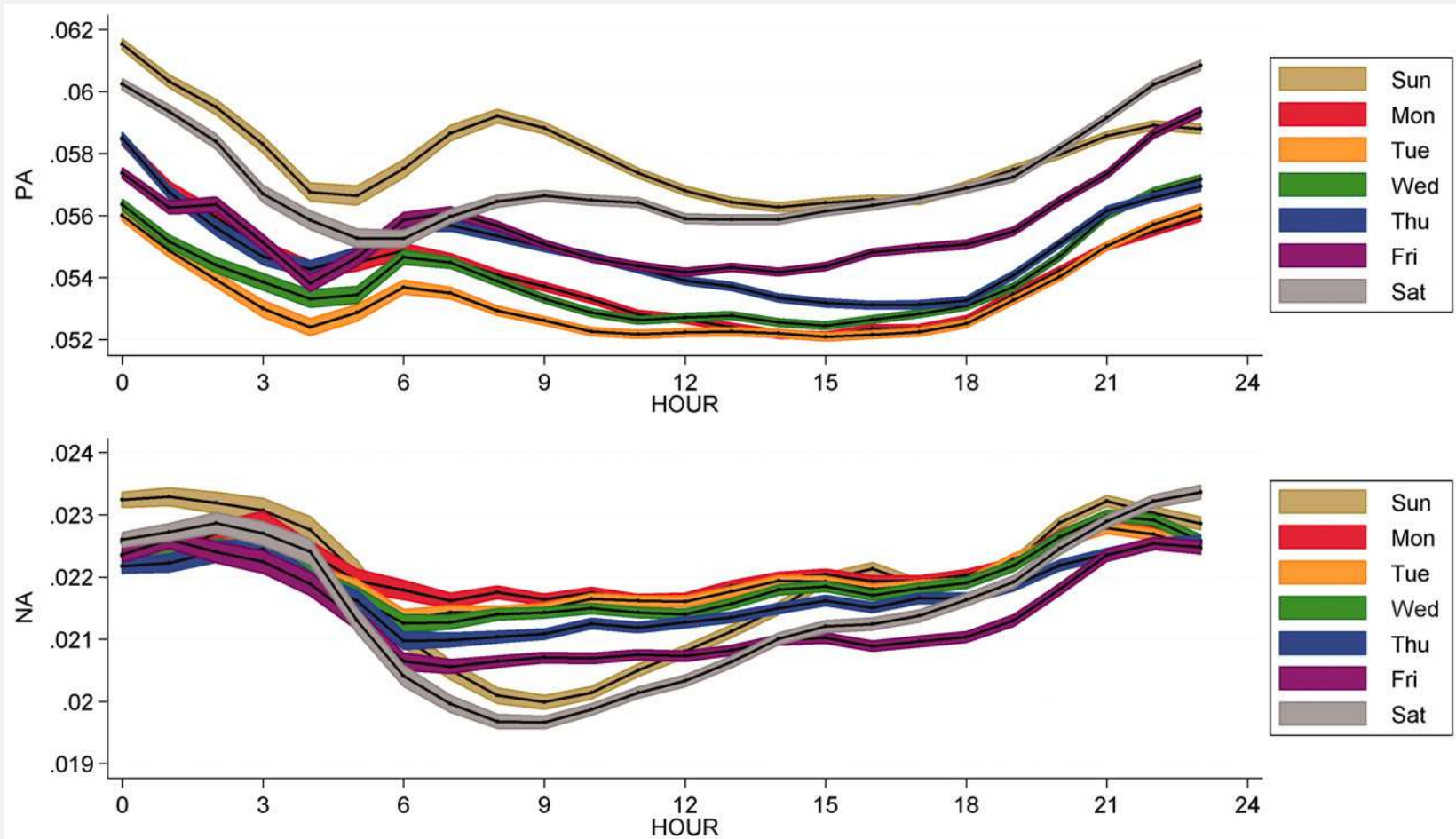
Fig. 2 Hourly changes in individual affect in four English-speaking regions.
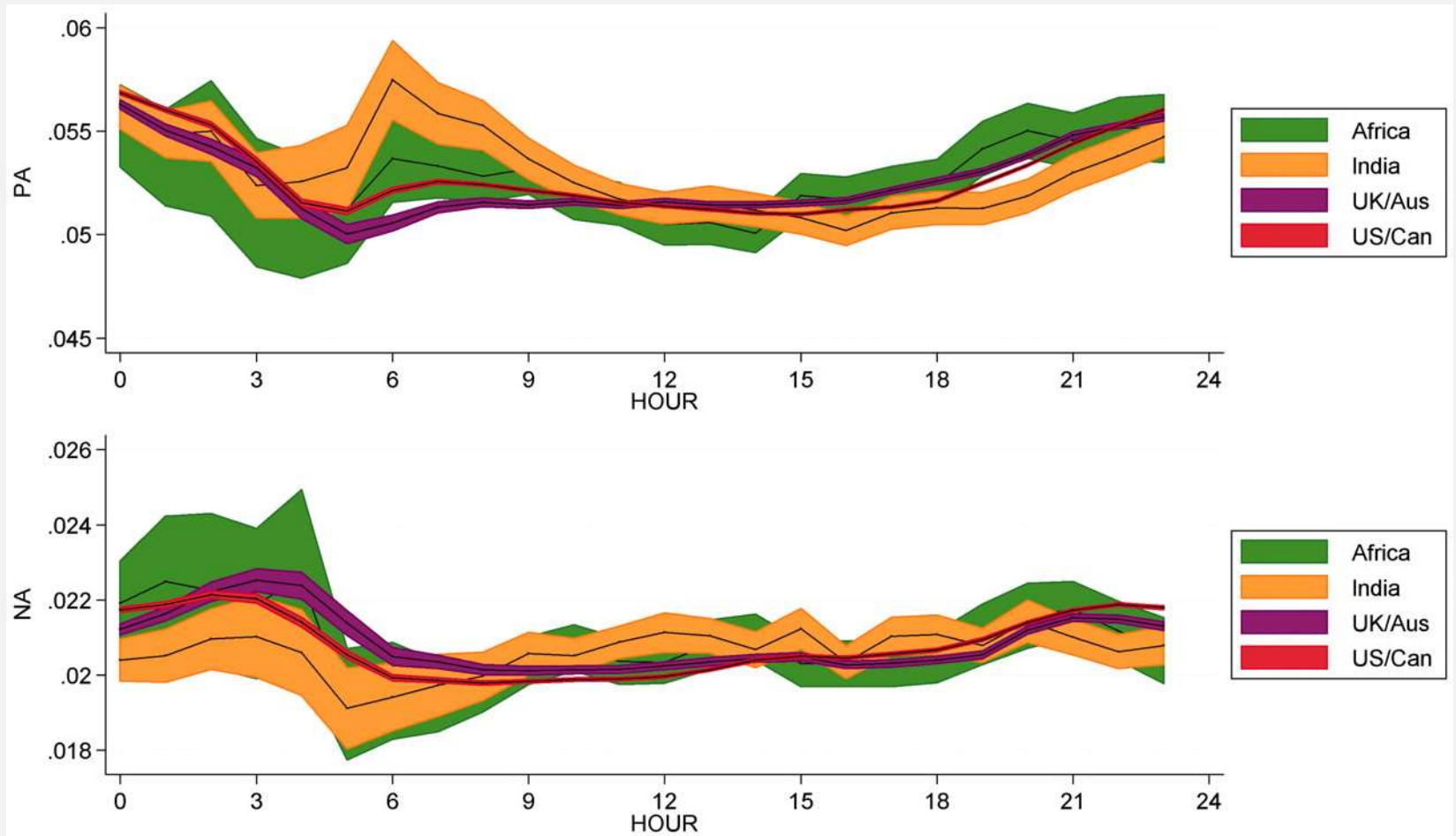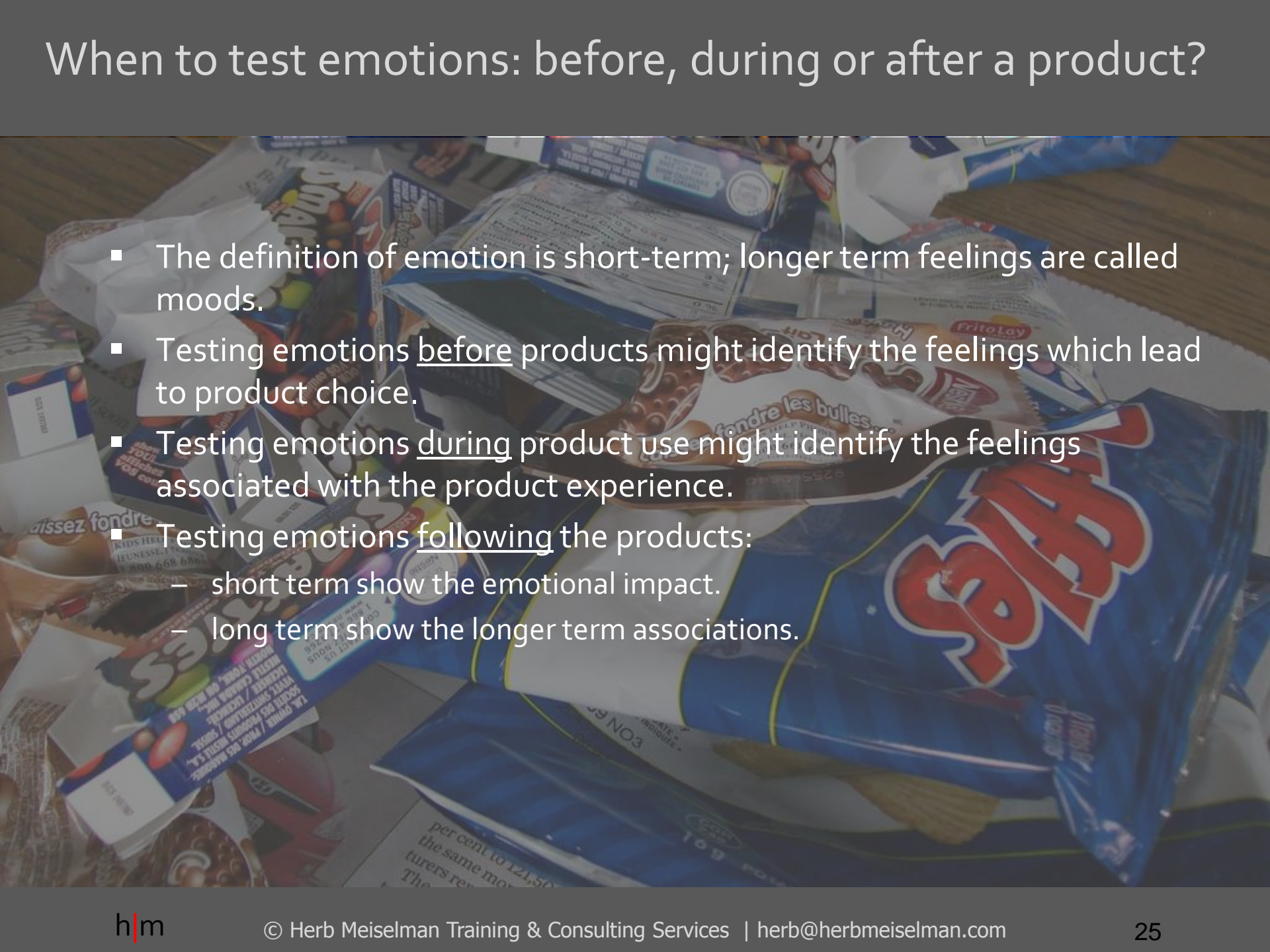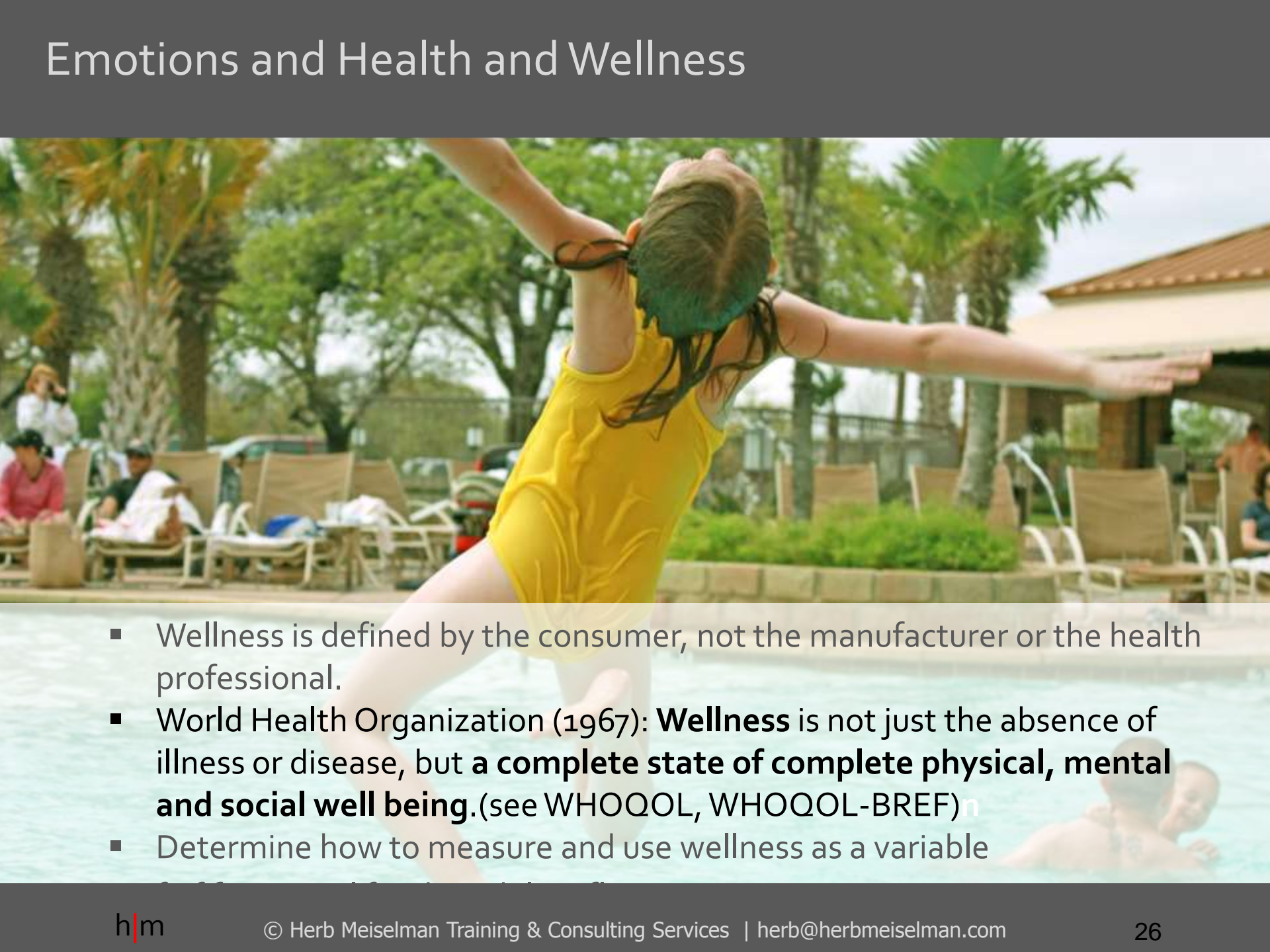
When to test emotions: before, during or after a product?

- The definition of emotion is short-term; longer term feelings are called moods.
- Testing emotions <u>before</u> products might identify the feelings which lead to product choice.
- Testing emotions <u>during</u> product use might identify the feelings associated with the product experience.
- Testing emotions <u>following</u> the products:
  - short term show the emotional impact.
  - long term show the longer term associations.

- Wellness is defined by the consumer, not the manufacturer or the health professional.
- World Health Organization (1967): **Wellness** is not just the absence of illness or disease, but **a complete state of complete physical, mental and social well being**.(see WHOQOL, WHOQOL-BREF)n
- Determine how to measure and use wellness as a variable

Dimensions of Wellness

- **social** (interaction with others and interdependence; skills comfort with others)

- **emotional** (awareness and control/acceptance of feelings),

- **physical** (physical activity, nutrition, lifestyle, acceptance of one's state)

- **intellectual** stimulating intellectual activity, knowledge, personal growth)

- **spiritual** (most well defined and explored; finding meaning and purpose in life and in relation to others)

- less frequently cited: **psychological** (optimism), **occupational** (attitudes towards work), and **environmental**(balance between home and work, and impact on environment)

Roscoe, L.J. (2009) Wellness: A Review of Theory and Measurement for Counselors, Journal of Counseling and Development, 87, 216-226.

Wellness: Subjective Well-Being Measures

There tends to be more agreement about <u>the measurement of subjective well-being</u>, and the balance between positive and negative affect, and life satisfaction.

1. <u>Affect</u> being measured using positive and negative affect measures including the <u>Positive and Negative Affect Scales</u> (Watson, Clark, & Tellegen, 1988)

2. <u>Life satisfaction</u> being measured by the <u>Satisfaction with Life Scale</u> (Diener, Emmons, Larsen, & Griffin, 1985P

Reference:P. Alex Linley, John Maltby, Alex M. Wood, Gabrielle Osborne, Robert Hurling (2009) Personality and Individual Differences 47, 878–884

User-Type

● Significant PANAS differences exist between user-types in Korea (PA) and Germany (PA and NA), varying across samples. Users tended to rate PA higher in both countries; German non-users rated NA higher. See Fig. 3.
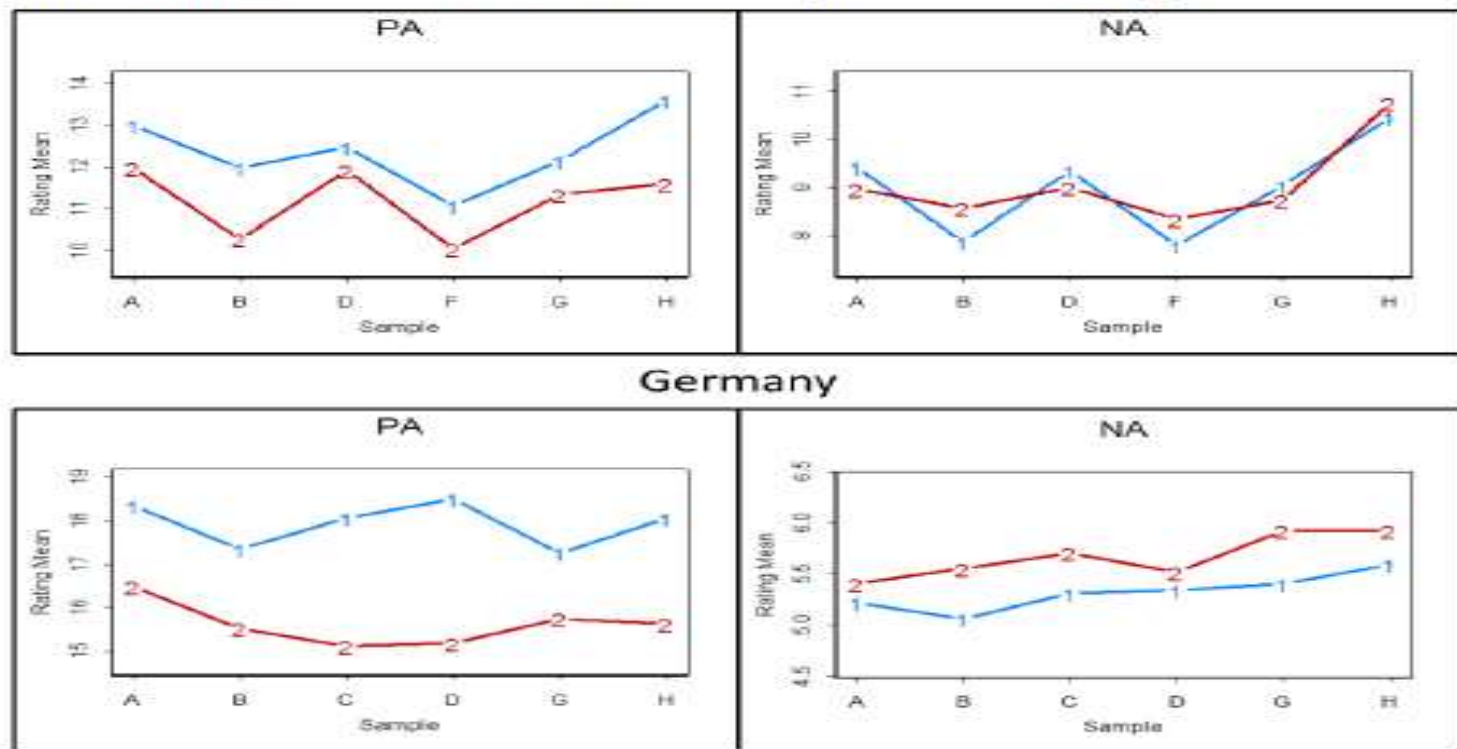
Sample Size: Korea –N=40 users and 40 non-users; Germany-N=32 users and 27 non-users

Fig. 3. Rating means (6 samples) for users (1) and non-users (2)

McCormick Wellness Questionnaire – 5 Dimensions
Presented at Eurosense 2012 by King et al

Emotional	Intellectual	Social	Physical	Spiritual
Affectionate	Accomplished	Accepted	Active	Comforted
Calm	Alert	Approachable	Energetic	Compassionate
Happy	Attentive	Concerned/others	Fatigued	Fulfilled
Loved	Creative	Connected	Healthy	Grateful
Relaxed	Curious	Disconnected	Invigorated	Joyful
Sad	Focused	Friendly	Refreshed	Peaceful
Satisfied	Stimulated	Lonely	Resilient	Unfulfilled
Secure	Stressed	Sociable	Rested	Uninspired
Tense	Uninterested	Supported	Tired	Whole

McCormick Wellness Questionnaire

Please indicate 'in the past month', to what extent have you felt …?
(Where 1 = not at all … 5 = extremely, or CATA)

Compassionate	Friendly	Attentive	Concern/others	Tired
Loved	Uninterested	Accepted	Energetic	Satisfied
Disconnected	Refreshed	Resilient	Unfulfilled	Peaceful
Accomplished	Joyful	Sad	Calm	Stimulated
Healthy	Relaxed	Whole	Alert	Supported
Fulfilled	Lonely	Affectionate	Connected	Uninspired
Secure	Focused	Approachable	Tense	Active
Fatigued	Sociable	Invigorated	Grateful	Comforted
Curious	Rested	Stressed	Creative	Happy

Wellness terms randomized between and within dimensions

Cross cultural and global perspective:

- Develop evaluation methods which work globally.
- Develop consumer language which spans cultures and countries.
- Identify consumer issues which are global.

Measuring Emotions: Does everyone have the same feelings and express them in the same way?

- Cross-cultural or global studies of emotions.

- Two distinct questions:

- 1. does everyone feel the same feelings and emotions?

- 2. does everyone express those feelings and emotions in the same way?

- Experience with hedonic measurement suggests that there are large cultural differences.

- Americans and Latins *might* be more willing to express stronger emotions than Asians.

The International Positive and Negative Affect Schedule Short Form (I-PANAS-SF)

- Question: Thinking about yourself and how you normally feel, to what extent do you generally feel:

- Upset
- Hostile
- Alert
- Ashamed
- Inspired
- Nervous
- Determined
- Attentive
- Afraid
- Active

- Interval measure: *never* 1 2 3 4 5 *always*

Thompson, E.R (2007) Development and validation of an internationally reliable short-form of the positive and negative affect schedule (PANAS). Journal of Cross-Cultural Psychology, Vol. 38 No. 2, 227-242

Swiss - GEOS:
Published 36 terms, 6 dimensions

2. Disgust

3. Sensuality

dirty
disgusted
unpleasant
unpleasantly surprised
irritated, angry
dissatisfaction
sickening

pleasant
well-being
pleasantly surprised
feeling awe
happiness
attracted

desire
romantic
sensual
in love
excited
admiration
sexy

1. Well-being

CH

6. Sensory Pleasure

nostalgic
mouthwatering
amusement

energetic
refreshed
revitalized
stimulated
invigorated
shivering
clean

light
relaxed
soothed
reassured
serene

4. Soothing

5. Energy

The underlined terms were selected for ScentMove™ Geneva

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2. Disgust

3. Sensuality

1. Well-being

dirty
sick
unpleasantly surprised
uncomfortable
disgusted
unpleasant
nauseous
repelled

pleasantly surprised
in a good mood

desire
in love
romantic
sensual
to feel intimacy
sexy
attracted
lustful

UK

7. Hunger Thirst

salivating
famished
thirsty

nostalgic
sentimental

relaxed
soothed
comforted
dreamy
drowsy
meditative
peaceful
protected

clean
energetic
refreshed
revitalized
rejuvenated
stimulated

6. Soothing

4. Nostalgia

5. Energy
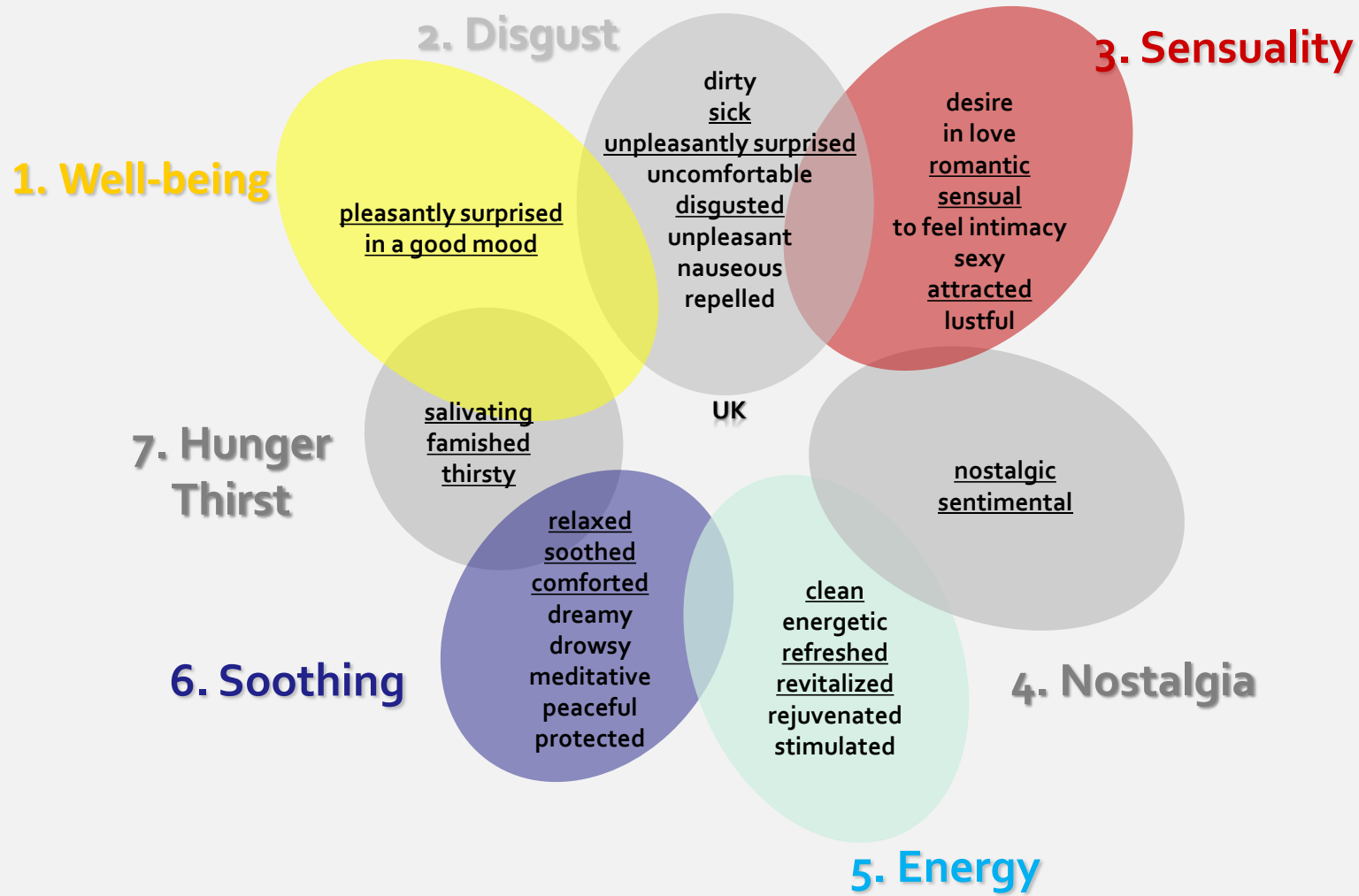
The underlined terms were selected for ScentMove™ UK

Singapore Emotion and Odor Scale
36 terms, 7 dimensions

2. Sensuality

desire
in love
romantic
sensual
sexually aroused
sexy
admiration
adoring
charmed

3. Well-being

pleasant
relaxed
well being
pleasantly surprised
comforted
happiness

1. Energy

energetic
refreshed
revitalized

SG

sad
angry
boredom
depressed
stressed

7. Negative feelings

sick
disgusted
dirty
unpleasantly surprised
unpleasant
uncomfortable
horrible
irritated

religious feeling
spiritual feeling

amusement
fascinated
interesting

6. Spirituality

4. Disgust

5. Intellectual Stimulation

The underlined terms were selected for ScentMove™ Singapore

ScentMove™ Scales from 3 countries:

ScentMove™ Scales		Geneva	Liverpool	Singapore	
well being		x	x	x	
sensuality		x	x	x	
disgust		x	x	x	
soothing		x	x		
sensory pleasure		x			
energy		x	x	x	
nostalgia			x		
hunger-thirst			x		
intellectual stimulation				x	
spirituality				x	
negative feelings				x	

Table 4

Proposed universal Emotion and Odor Scale (UniGEOS) with nine affective categories and 25 affective terms in four languages. N is the number of geographic areas (out of the seven studied) in which the term appears.

English	French	Chinese	Portuguese
1. Unpleasant feelings			
Disgusted (N = 7)	Dégoûté	厌恶的	Enojado
Irritated (N = 6)	Irrité	恼怒的	Irritado
Unpleasantly surprised (N = 6)	Désagréablement surpris	不愉快的意外惊喜	Desagradavelmente surpreso
2. Happiness/Delight			
Happy (N = 6)	Heureux	幸福的	Feliz
Pleasantly surprised (N = 5)	Agréablement surpris	惊喜的	Agradavelmente surpreso
Well-being (N = 3)	Bien-être	安宁	Bem-estar
3. Sensuality/Desire			
Desire (N = 7)	Désir	渴望	Desejo
Romantic (N = 7)	Romantique	浪漫的	Romântico
Sensual (N = 6)	Sensuel	肉欲的	Sensual
4. Energy			
Refreshed (N = 7)	Rafraîchi	恢复精神的	Refrescado
Energetic (N = 6)	Energique	精力充沛的	Energético
Revitalized (N = 5)	Revitalisé	恢复生机的	Revitalizado
5. Soothing/Peacefulness			
Relaxed (N = 7)	Relaxé	得到安宁的	Relaxado
Comforted (N = 5)	Réconforté	宽慰的	Confortado
Soothed (N = 4)	Apaisé	受安慰的	Sossegado
6. Hunger/Thirst			
Mouth-watering (N = 5)	Salivant	令人垂涎欲滴的	Com água na boca
Thirsty (N = 3)	Assoiffé	口渴的	Sedento
Famished (N = 2)	Affamé	极饥饿的	Faminto
7. Interest			
Amusement (N = 3)	Amusement	娱乐	Diversão
Interesting (N = 2)	Captivant	有趣的	Interessante
Impressed (N = 1)	Impressionné	印象深刻的	Impressionado
8. Nostalgia			
Sad (N = 3)	Triste	伤心的	Triste
Melancholic (N = 1)	Mélancolique	忧郁的	Melancólico
Nostalgic (N = 3)	Nostalgique	怀旧的	Nostálgico
9. Spirituality			
Spiritual feeling (N = 1)	Sentiment spirituel	精神感觉	Sentimento espiritual

Available data

N = 1 284 consumers   France (159)   UK (158)   Italy (153)   Germany (171)

USA (159)   Brazil (171)   Japan (160)   China (153)

11 boards (4 negative & 7 positive emotions)

Initial list of 35 emotions:

Amusement	Irritation	Enthusiasm	Nostalgia	Worry	Fear	Dissatisfaction
Anger	Optimism	Stimulation	Envy / jealousy	Surprise	Desire	Pride
Trust	Excitation	Ill at ease / Discomfort	Tenderness	Sadness	Nervousness	Vitality
Delight / Enchantment	Curiosity	Joy / Happiness	Disgust	Calm / serenity	Fascination	Sensitivity
Interest	Satisfaction	Shame	Boredom	Exasperation / Cross	Bother / upset	None of these

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Low cultural impact on the board "Surprise"

B.Surprise	France	Italy	Germany	UK	USA	Brazil	Japan	China
Surprise	81	85	75	80	86	77	74	76
Joy / Happiness	36	35	38	37	39	36	36	30
Delight / Enchantment	34	29	26	42	42	25	18	44
Curiosity	24	36	36	23	28	30	25	45
Amusement	34	31	40	22	25	26	23	12
Excitation	15	22	17	30	31	15	33	41
Fascination	21	8	33	25	30	24	2	11
Enthusiasm	18	29	36	12	23	19	2	8
Interest	16	18	29	19	19	13	15	14
Satisfaction	16	14	12	8	4	15	4	18

Surprise

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Cultural impact on the board "Anger"

Board "Anger" (%)	France	Italy	Germany	UK	USA	Brazil	Japan	China
Anger	75	62	77	75	77	63	58	54
Irritation	55	69	59	52	60	65	20	52
Exasperation / Cross	72	46	47	59	42	52	77	27
Bother / Upset	52	47	37	41	56	26	39	41
Nervousness	64	73	28	16	24	20	10	60
Worry	16	31	22	30	27	27	11	46
Dissatisfaction	16	21	39	30	33	36	18	5
Ill at ease / Discomfort / Embarrassment	5	15	18	13	21	4	28	6
Boredom	4	4	2	4	1	47	3	32
Disgust	3	3	1	13	24	6	16	17

Anger Exasperation / Cross Irritation Nervousness

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Main emotions

Secondary emotions

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Words used by Spanish and English speaking respondents - emotions related to beverages

Internet testing:

- Indicate relevance of each of 66 words on list
- Applicability to beverages, including:
  - Favourite beverage
  - Least liked alcoholic beverage
- 6 countries (600 respondents in each)
  - UK, USA, New Zealand, Australia
  - Spain, Mexico (with appropriate gender form)
- Native speakers
- Male/Female: 50/50
- Up to age 55

Reference: van Zyl & Meiselman, Pangborn 2013

Favourite Beverage: English
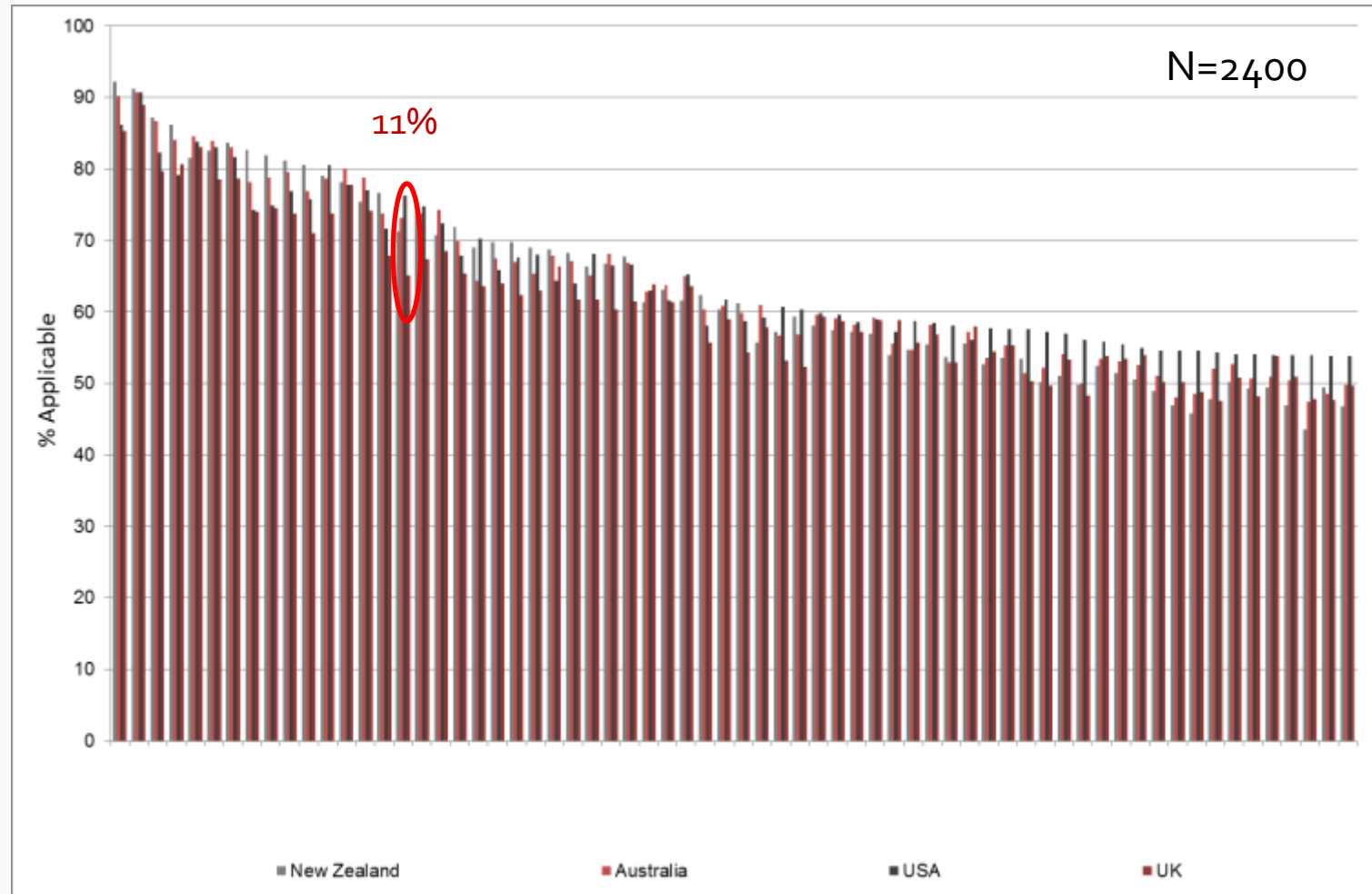
Favourite Beverage: Spanish
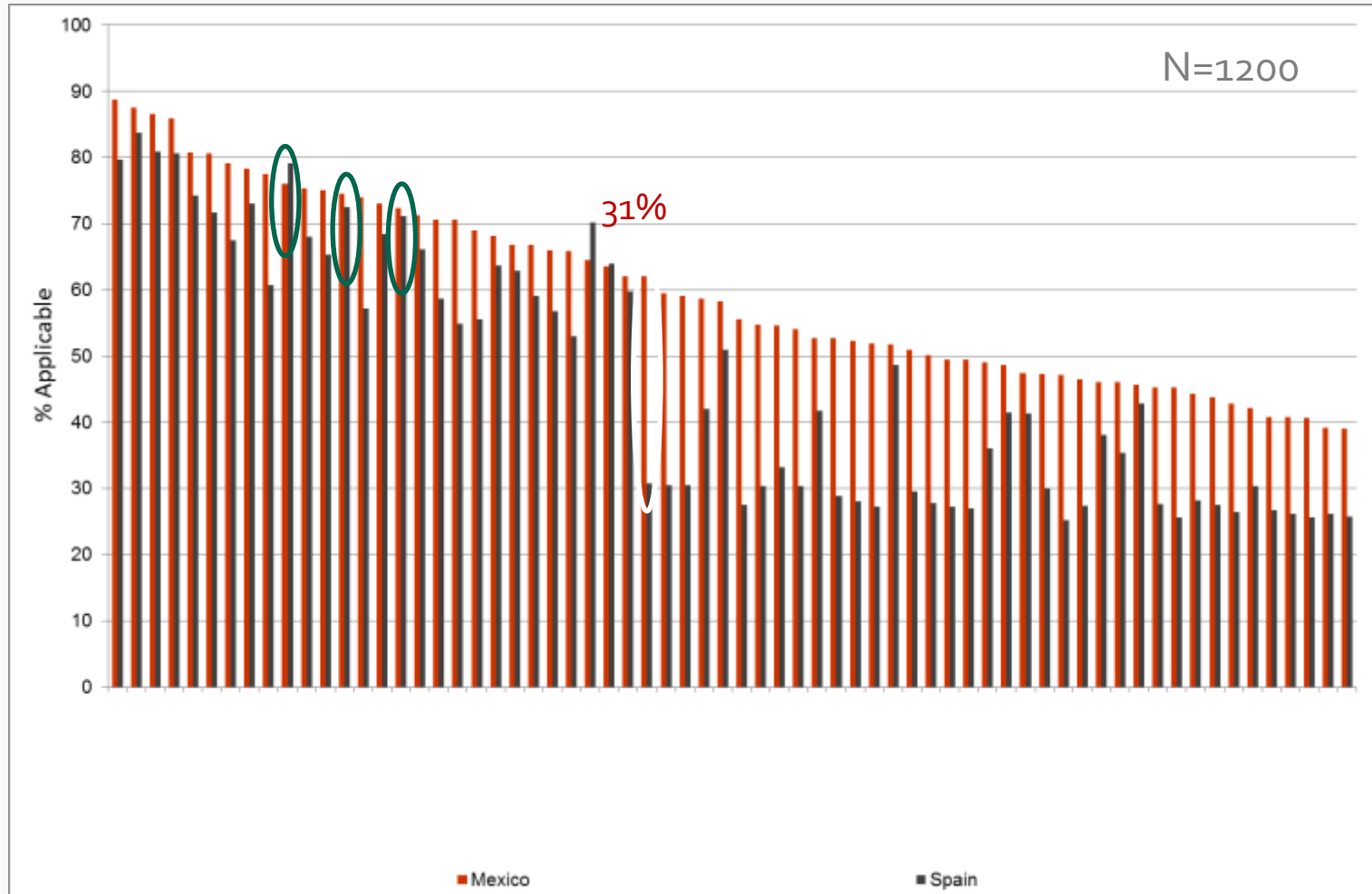
Emotion measurement: products and emotions

Recent method development:

- Geneva Emotion and Odor Scale (GEOS), ScentMove^{TM}, and UniGEOS from University of Geneva and Firmenich
- EsSense Profile^R from McCormick
- Italian wine and emotions from University of Verona
- Nestle
- Moskowitz Idea Map
- Thomson, MMR SensoEmotional Optimization of Products & Brands
- Facial Scaling (Noldus)
- Animated Cartoon figures (PrEmo)
- Other non-verbal measures
- Physiological measurement

Measuring Emotions:

Measuring Emotions –

- Defining emotion – consumer or professional
- Positive and negative emotions
- Large or small numbers of emotions
- Method: Questionnaire or facial or physiological or behavioral.
- Internet studies of emotions
- When to test emotions: before, during or after a product
- Emotions and Health and Wellness
- Cross cultural and global perspective: Does everyone globally have the same feelings and express them the same way?

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