Sensory Marketing and Sensory Science: Finding the Common Ground

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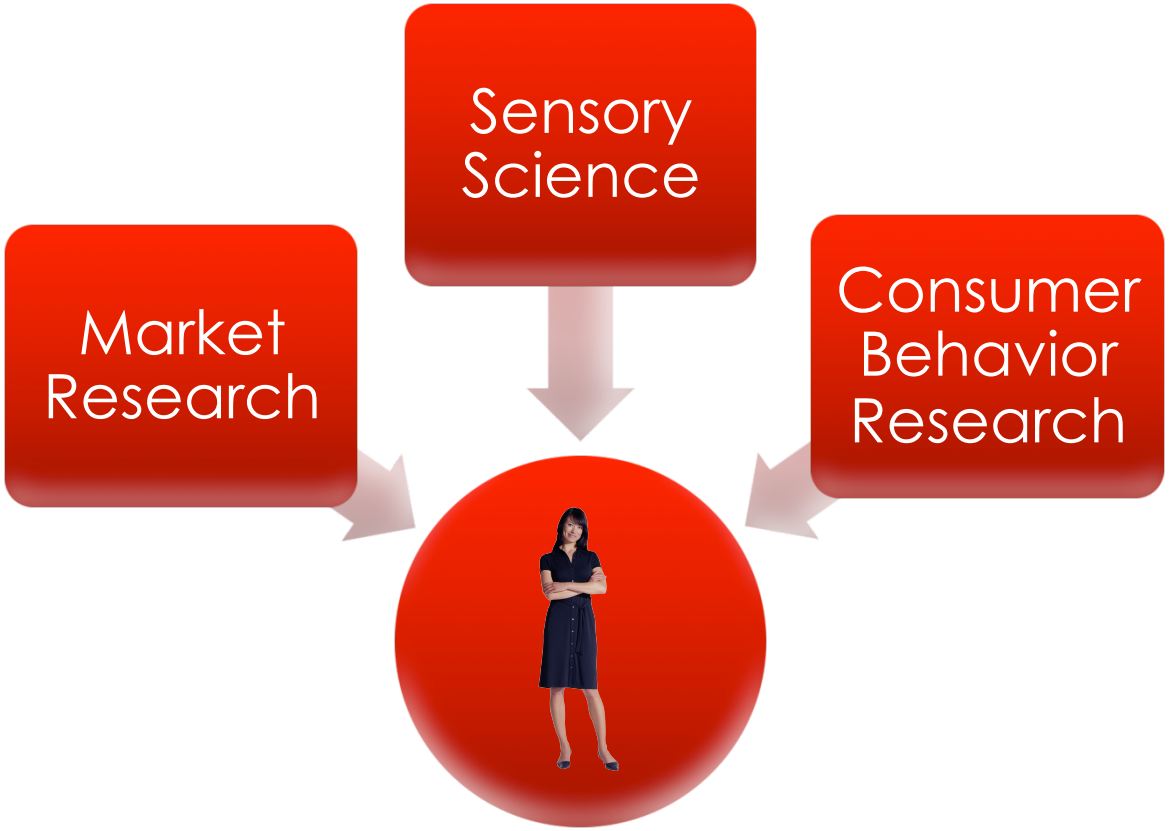
Overlapping Interests



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Overlapping Interests

How do we make it "best"?

Sensory Science

Market Research

Consumer Behavior Research



What would be "best" for this product?

How is "best" biased?

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Overlapping Interests

How do we make it "best"?

Sensory Science

Chemistry, biology, physiology + psychology

Market Research

What would be "best" for this product?

Marketing + statistics



Consumer Behavior Research

How is "best" biased?

Economics +psychology, sociology

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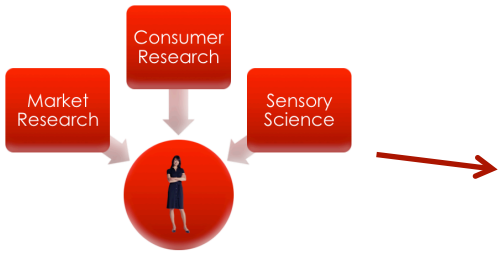

Sensory Marketing

Marketers' attempts to appeal to all five senses to generate product expectations (in store, in ad) and enhance the consumer experience (at home, during use)

- Interest has grown in last 5 years
- Focus has moved beyond the visual….
  - Golf ball and flooring samples at Home Depot
    - Increases salience/importance of under-appreciated product attributes (thickness → sound-proof)
    - Reduces uncertainty prior to purchase
    - Engages the consumer/is fun
    - Increases likelihood of repeat visit to retailer



Consider all the senses



My initial focus

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My initial focus

Scent ? Memory

- Does scent enhance consumer memory?
- Why?
- When?



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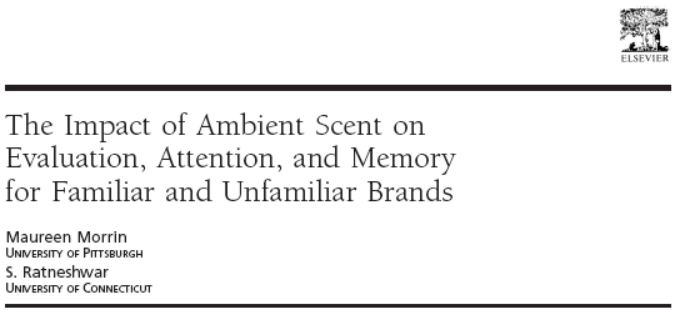
Scenting the atmosphere

- Does a pleasant ambient scent improve consumers' ability to remember brand names and packaging?

5 min. delay

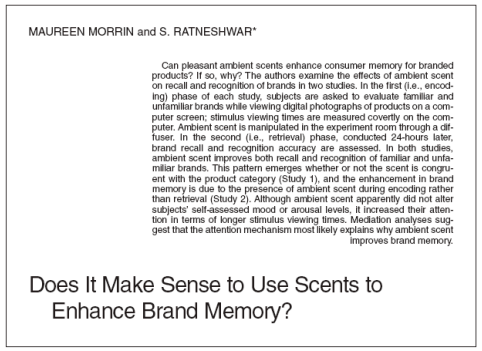

ELSEVIER

The Impact of Ambient Scent on Evaluation, Attention, and Memory for Familiar and Unfamiliar Brands

Maureen Morrin
University of Pittsburgh
S. Ratneshwar
University of Connecticut

Journal of Business Research (2000)

24 hr. delay


MAUREEN MORRIN and S. RATNESHWAR*

Can pleasant ambient scents enhance consumer memory for branded products? If so, why? The authors examine the effects of ambient scent on recall and recognition of brands in two studies. In the first (i.e., encoding) phase of each study, subjects are asked to evaluate familiar and unfamiliar brands while viewing digital photographs of products on a computer screen; stimulus viewing times are measured covertly on the computer. Ambient scent is manipulated in the experiment room through a diffuser. In the second (i.e., retrieval) phase, conducted 24-hours later, brand recall and recognition accuracy are assessed. In both studies, ambient scent improves both recall and recognition of familiar and unfamiliar brands. This pattern emerges whether or not the scent is congruent with the product category (Study 1), and the enhancement in brand memory is due to the presence of ambient scent during encoding rather than retrieval (Study 2). Although ambient scent apparently did not alter subjects' self-assessed mood or arousal levels, it increased their attention in terms of longer stimulus viewing times. Mediation analyses suggest that the attention mechanism most likely explains why ambient scent improves brand memory.

Does It Make Sense to Use Scents to Enhance Brand Memory?

Journal of Marketing Research (2003)

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Stimuli example





1 o 9 liking score (RT captured)

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Scenting products

Q: Does a product infused with scent improve consumers' ability to remember brand attributes?

Product Scent and Memory

ARADHNA KRISHNA
MAY O. LWIN
MAUREEN MORRIN

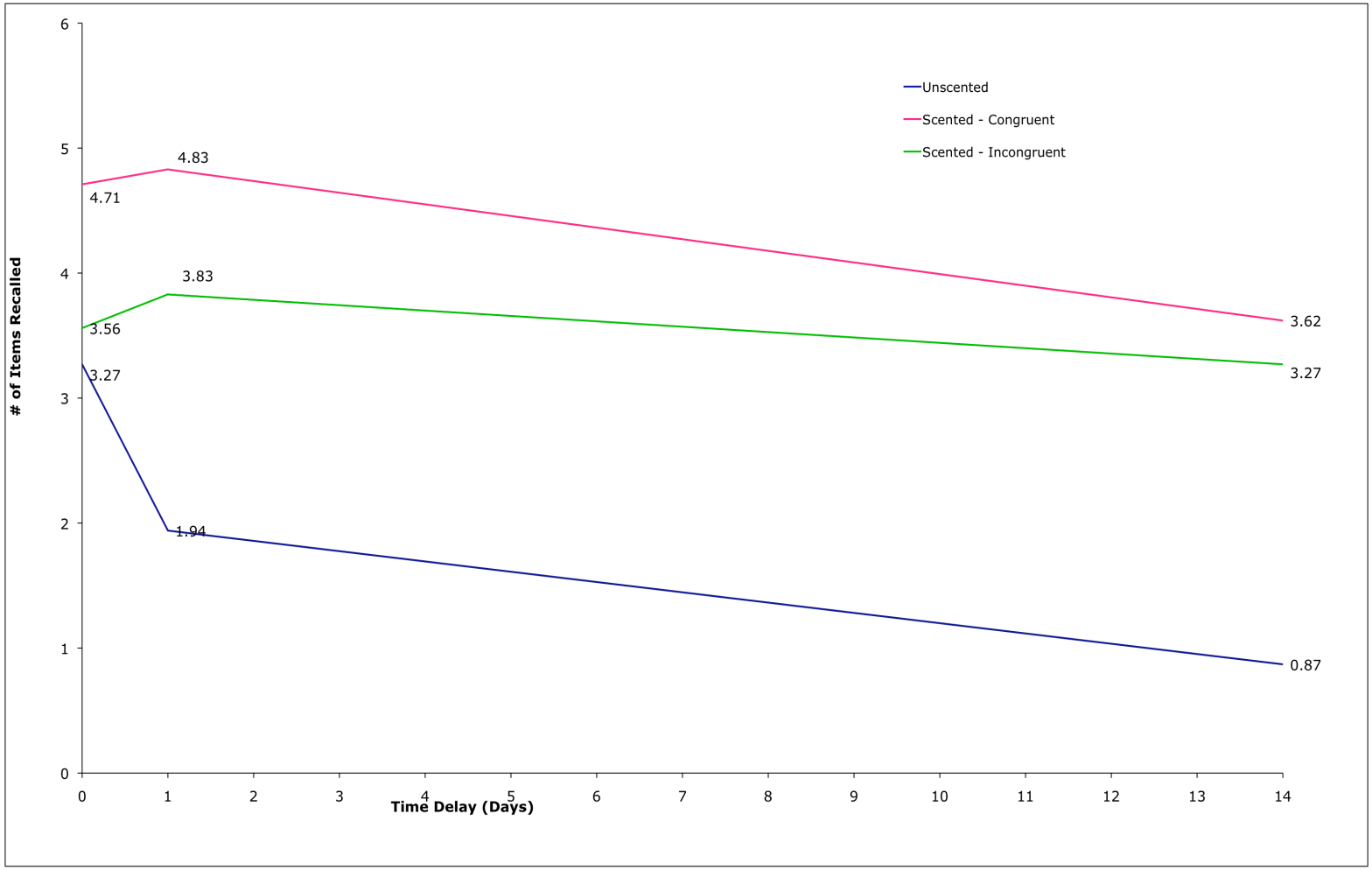
Scent research has focused primarily on the effects of ambient scent on consumer evaluations. We focus instead on the effects of product scent on consumer memories. For instance, if a pencil or a facial tissue is imbued with scent (vs. not), recall for the brand's other attributes increases significantly—with the effects lasting as much as 2 weeks after exposure. We also find that product scent is more effective than ambient scent at enhancing memory for product information. We suggest that this may be because, with product (ambient) scent, scent-related associations are focused on a single object (are diffused across multiple objects) in the environment. In support, we find that the memory effects are driven by the number of product/scent-related associations stored in long-term memory. The results suggest that, although ambient scent has received the bulk of attention from researchers and managers in recent years, greater focus on product scent is warranted.





Journal of Consumer Research (2010)

Product memory over time



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Scenting direct mailers

ELSEVIER

Available online at www.sciencedirect.com
ScienceDirect
Journal of Consumer Psychology 20 (2010) 317–326

Journal of CONSUMER PSYCHOLOGY

Exploring the superadditive effects of scent and pictures on verbal recall: An extension of dual coding theory☆

May O. Lwin [a,1], Maureen Morrin [b,*,1], Aradhna Krishna [c,1]

[a] Nanyang Technological University, Singapore
[b] Rutgers University, Camden, NJ, USA
[c] University of Michigan, Ann Arbor, MI, USA

Received 25 February 2009; revised 17 March 2010; accepted 4 April 2010
Available online 7 May 2010

Abstract

This research extends the dual coding theory of memory retrieval (Paivio 1969, 2007) beyond its traditional focus on verbal and pictorial information to olfactory information. We manipulate the presence or absence of olfactory and pictorial stimuli at the time of encoding (study 1) or retrieval (study 2) and measure the impact on verbal recall. After a time delay, scent enhances recall of verbal information, and scent-based retrieval cues potentiate the facilitative effect of pictures on recall. These results cannot be attributed merely to increased elaboration at the time of exposure.
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Keywords: Dual coding theory; Sensory; Scent; Pictures; Memory





Journal of Consumer Psychology (2010)

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Scenting movie theatre ads

Journal of Consumer Behaviour, *J. Consumer Behav.* (2012)
Published online in Wiley Online Library (wileyonlinelibrary.com) **DOI:** 10.1002/cb.1368

Movie theater commercials: The impact of scent and pictures on brand evaluations and ad recall

MAY O. LWIN[1] and MAUREEN MORRIN[2]*
[1]*Wee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore, 637718*
[2]*Rutgers School of Business, Rutgers University, 227 Penn St., Camden, NJ 08102, USA*

ABSTRACT

We utilize a novel advertising context—commercials seen in a simulated movie theater setting while ambient scent is emitted into the atmosphere—to explore the effects of multisensory cues on brand evaluation and advertising recall. Although both pictorial and olfactory cues enhance brand evaluations and ad recall overall, we find that olfactory (vs pictorial) cues generate more positive feelings toward the brand and enhance recall to a greater extent. We also find that, after a long time delay, re-experiencing the scent activates pictures' ability to facilitate recall. Theoretical and managerial implications are discussed. Copyright © 2012 John Wiley & Sons, Ltd.

PROOF

Journal of Consumer Behaviour (2012)























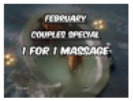



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Scenting the mall

Person-Place Congruency

The Interactive Effects of Shopper Style and Atmospherics on Consumer Expenditures

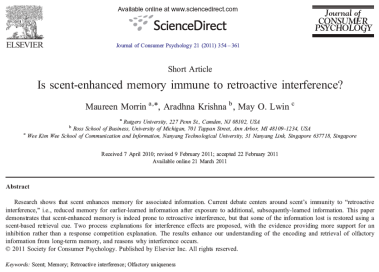
Journal of Service Research (2005)

Maureen Morrin
Rutgers University

Jean-Charles Chebat
HEC–Montreal

Testing the limits

Q: Are scent—based associations immune to interference?



Available online at www.sciencedirect.com
ScienceDirect
Journal of Consumer Psychology 21 (2011) 354–361

Short Article

Is scent-enhanced memory immune to retroactive interference?

Maureen Morrin [a,*], Aradhna Krishna [b], May O. Lwin [c]

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[b] Ross School of Business, University of Michigan, 701 Tappan Street, Ann Arbor, MI 48109-1234, USA
[c] Wee Kim Wee School of Communication and Information, Nanyang Technological University, 31 Nanyang Link, Singapore 637718, Singapore

Received 7 April 2010; revised 9 February 2011; accepted 22 February 2011
Available online 21 March 2011

Abstract

Research shows that scent enhances memory for associated information. Current debate centers around scent's immunity to "retroactive interference," i.e., reduced memory for earlier-learned information after exposure to additional, subsequently-learned information. This paper demonstrates that scent-enhanced memory is indeed prone to retroactive interference, but that some of the information lost is restored using a scent-based retrieval cue. Two process explanations for interference effects are proposed, with the evidence providing more support for an inhibition rather than a response competition explanation. The results enhance our understanding of the encoding and retrieval of olfactory information from long-term memory, and reasons why interference occurs.
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Keywords: Scent; Memory; Retroactive interference; Olfactory uniqueness

Journal of Consumer Psychology (2011)

Pamplona



- *Comes in handy tubes of different sizes*
- *Is a non-greasy cream that absorbs easily into the skin*
- *Leaves your skin feeling soft and healthy*
- *Is formulated with Aloe Vera and other natural plant extracts*
- *Contains Vitamin E to fight aging*
- *Is great for people whose skin peel often*

Ceville



- *Eliminates discoloration of the skin*
- *Contains sunscreens to give great protection against the sun*
- *Is suitable for all skin types*
- *Is made entirely with Swiss Pride*
- *Contains Vitamin C*
- *Moisturizes skin*

A: No, but they remain accessible



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Other sensory studies…

Merely *imagining* a scent increases desire, salivation, and consumption

APPENDIX B
FIGURE B1
ADVERTISING STIMULUS USED IN STUDY 2



Feel Like a Chocolate Cake?

APPENDIX C
FIGURE C1
ADVERTISING STIMULUS USED IN STUDY 3

Tastee® Brand
Cookies



Feel Like Eating a Freshly Baked Cookie?

Look for these soon in a store near you.

Smellizing Cookies and Salivating: A Focus on Olfactory Imagery

ARADHNA KRISHNA
MAUREEN MORRIN
EDA SAYIN

The concept of olfactory imagery is introduced and the conditions under which imagining what a food smells like (referred to here as "smellizing" it) impacts consumer response are explored. Consumer response is measured by: salivation change (studies 1 and 2), actual food consumption (study 3), and self-reported desire to eat (study 4). The results show that imagined odors can enhance consumer response but only when the consumer creates a vivid visual mental representation of the odor referent (the object emitting the odor). The results demonstrate the interactive effects of olfactory and visual imagery in generating approach behaviors to food cues in advertisements.

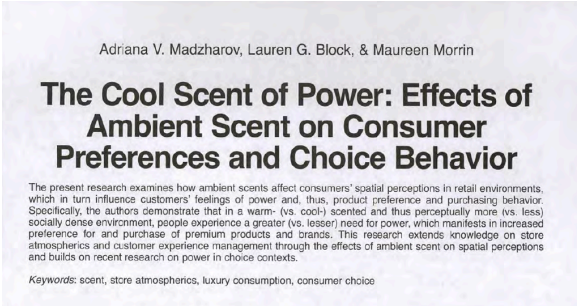
Journal of Consumer Research (2014)

Smelling a "warm" scent creates desire for luxury brands









Adriana V. Madzharov, Lauren G. Block, & Maureen Morrin

The Cool Scent of Power: Effects of Ambient Scent on Consumer Preferences and Choice Behavior

The present research examines how ambient scents affect consumers' spatial perceptions in retail environments, which in turn influence customers' feelings of power and, thus, product preference and purchasing behavior. Specifically, the authors demonstrate that in a warm- (vs. cool-) scented and thus perceptually more (vs. less) socially dense environment, people experience a greater (vs. lesser) need for power, which manifests in increased preference for and purchase of premium products and brands. This research extends knowledge on store atmospherics and customer experience management through the effects of ambient scent on spatial perceptions and builds on recent research on power in choice contexts.

Keywords: scent, store atmospherics, luxury consumption, consumer choice

Journal of Marketing (2015)

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Holding a firmer cup makes water taste better

Does Touch Affect Taste? The Perceptual Transfer of Product Container Haptic Cues

ARADHNA KRISHNA
MAUREEN MORRIN*

We develop a conceptual framework regarding the perceptual transfer of haptic or touch-related characteristics from product containers to judgments of the products themselves. Thus, the firmness of a cup in which water is served may affect consumers' judgments of the water itself. This framework predicts that not all consumers are equally affected by such nondiagnostic haptic cues. Results from four studies show that consumers high in the autotelic need for touch (general liking for haptic input) are less affected by such nondiagnostic haptic cues compared to consumers low in the autotelic need for touch. The research has many implications for product and package design.

Journal of Consumer Research (2008)





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Seeing graspable objects increases liking of nongraspable targets

(with Virginie Maille and Ryann Reynolds-McIlnay; invited for 2nd round at JMR)

Advertising Stimuli in Study 2

(Non-Motor-Fluent; Motor-Fluent; Control)



Darker products are more harmed by messy appearance on shelf

(with Ryann Reynolds-McIlnay and Jens Nordfelt, under 2nd round at *JMR*)
Due to brightness contrast



Dark messy (on left)/Bright neat



Dark neat (on left)/Bright messy



Bright neat (on left) /Dark messy



Bright messy (on left)/Dark neat

Figure 3

Study 2: Field Study Example of Sweater Display



Notes: The three bright color cardigans are marked with a red X. The two dark color cardigans are marked with a white X.

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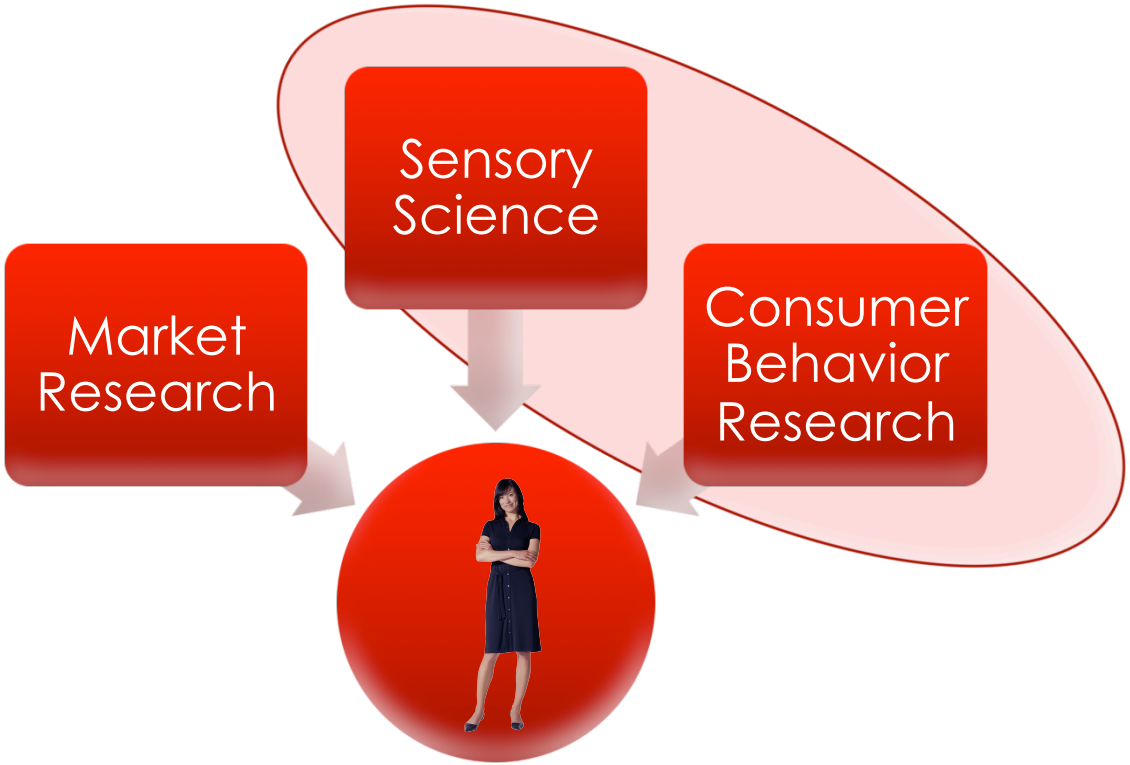
Bridging the gap



Bridging the gap

Consumer Behavior Research

- TYPICAL GOAL: Find a surprising/non intuitive result (usually an "irrational" or biased aspect of decision making) driven by sensory inputs or impacting sensory experiences
  - E.g., **Non-blind taste test**
- TYPICAL SETTING: in lab, using hypothetical scenarios, imagined consumption

Sensory Science

- TYPICAL GOAL: Explain how sensory inputs impact appearance, texture, smell, taste, liking of product, or discriminate, to aid in product development/quality control
  - E.g., **Blind taste test**
- TYPICAL SETTING: in lab with actual product consumption

Bridging the gap

- SUBJECTS: **undergraduates** or **Mturkers** (but moving toward field studies with actual shoppers)
- MEASURES: self-reported persuasion, **purchase intent,** willingness to pay; **amount consumed**, as well as non-conscious measures
- ANALYSIS: **regression** & ANOVA with moderators, mediators

Motto might be: "Perception is reality"

- SUBJECTS: trained **experts** or naive consumers
- MEASURES: self-reported **liking** (hedonics), intensity, **discrimination**, satiation
- ANALYSIS: main effects, **dimension reduction** (factor analysis etc), quantitative and qualitative

Motto might be: "Seeking objective reality"

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Bridging the gap

- What CB researchers can adopt from sensory scientists:
  - Move toward food products, with focus not only on over- but under-consumption (and policy implications)
    - Incorporate measures such as number of bites or swallows, exposure time in mouth (dynamics of in-mouth perceptions)
  - Tap into carefully crafted sensory lexicons (e.g., texture: crunchy vs crispy vs crackly vs hard)
  - Use 'real' people as subjects (vs. undergrads, Mturkers)
  - Consider traits such as neophobia, PROP sensitivity

- What sensory scientists can adopt from CB researchers:
  - Broaden product focus (tourism, financial services, tech devices)
  - Explore the notion of sensory pleasure and its role in product liking
    - As concern for health and wellness are assuming more importance (i.e., impact of cognitive goals)
    - Sensory pleasure associated with sin (esp for dieters) – when does pleasure backfire?
  - Analytics (e.g., explore process explanations)

Going forward: Examine how sensory experience changes across stages of consumption

- **Kim, van Hout, & Lee (JSS 2015)** found that the consumer lexicon describing kitchen cleansers changes across stages of use:



Utilitarian?
(determines trial?)

Hedonic?
(determines repeat purchase/loyalty?)

- **Thompson, Hamilton & Rust (JMR 2005)** found that an electronics device with lots of features chosen in store leads to lower satisfaction during use at home ("feature fatigue";change in attribute weights from capability to usability, over time)

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Develop implicit measures of emotions from sensory input

- In CB: Are PAD, PANAS scales adequate?
  - E.g., Feel relieved, refreshed, tidy, energized, etc

Explore impact of technology on sensory experience

- Recent research: consumer confessions judged less harshly if heard or seen vs read
  - How are new technologies causing sensory deprivation which impacts our judgment and behavior
  - How might firms exploit these effects

Thank you!
(maureen.morrin@temple.edu)