



# Beauty Is In The Mind of The Beholder

**Melinda Knuth, PhD**  
**Assistant Professor**  
**North Carolina State University**

# Behavioral economics

be·hav·ior·al ec·o·nom·ics

*noun*

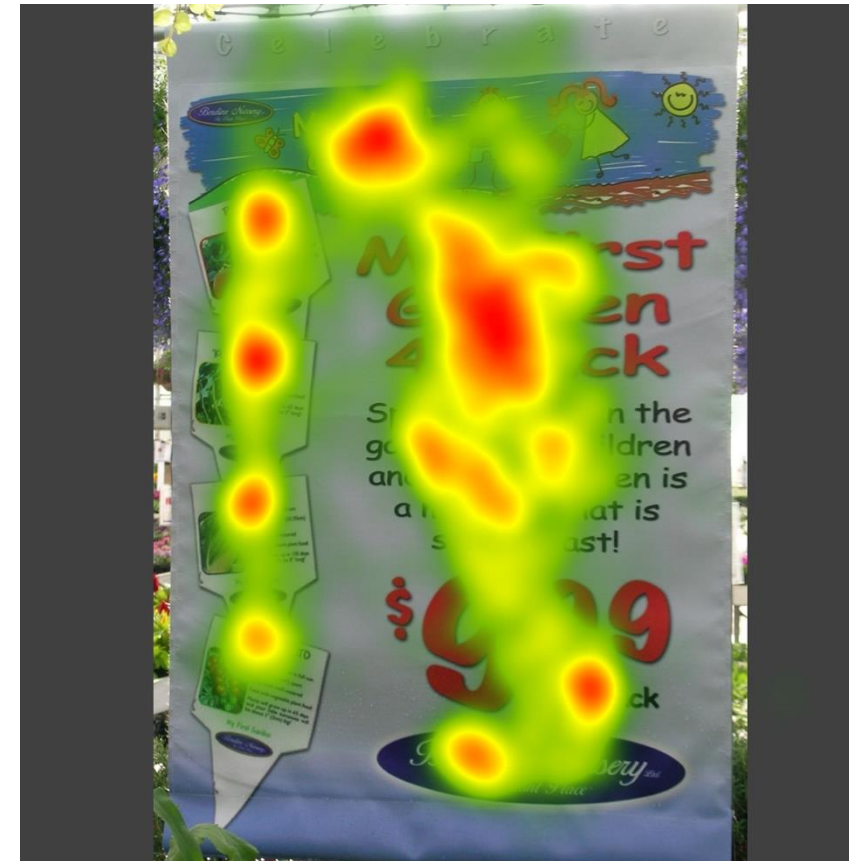
a method of economic analysis that applies psychological insights into human behavior to explain economic decision-making



# Vocabulary

---

- Attention: Attention is the process by which stimuli are selected and integrated for cognitive processing (Phaf et al., 1990)
- Arousal refers to the “degree to which the person feels excited, stimulated, alert or active in the situation” (Donovan and Rossiter, 1982)
- Eye-tracking Measures: ET technology has made it possible to see exactly what a customer is looking at, for how long, and in what sequence.
  - Time to first fixation (TFF)
  - Total fixation duration (FD)
  - Fixation counts (FC)



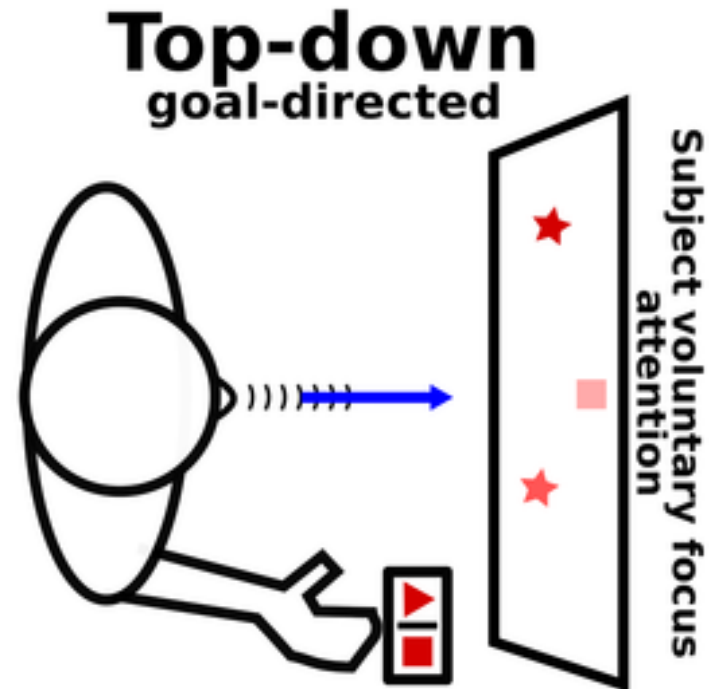
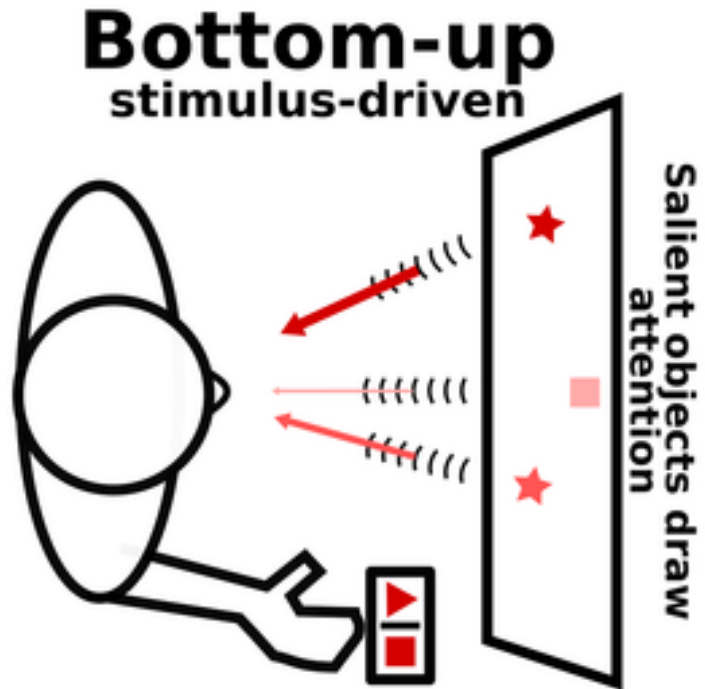
# The Retail Environment

# The Retail Environment

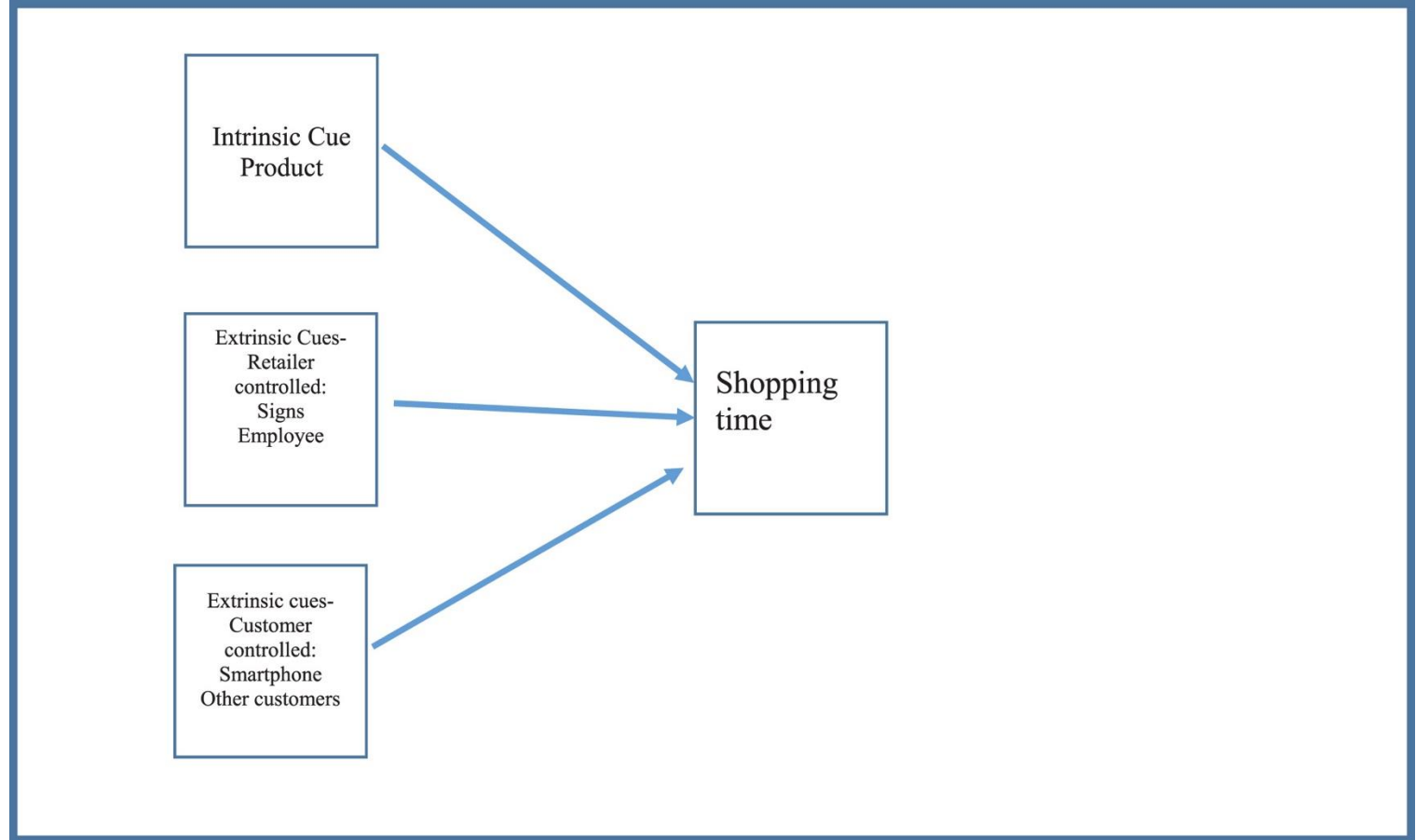
- Attract visual attention
  - Purchase intent
  - Actual purchases
- 70% of buying decisions are made at point of purchase (Ståhlberg and Maila, 2012)
- Most used cues within the retail space are **price** and **brand**
  - Brands save the shopper valuable cognitive energy and time
  - Consumers have a trade off with their utilities and money



# Cognitive Processing



# Influences During Purchase



# Finding Product: Wayfinding

- Customers unfamiliar with a store layout allocate more attention to in-store signage during the navigation stage of the search process
- Consumers familiar with the store layout attend more to in-store signage during the decision-making stage (Otterbring et al., 2014)
- Task specification and set up
  - Consumers who are just browsing (from afar) do so vertically (Harwood and Jones, 2014)
  - Consumers process displays easier horizontally when up close (Deng et al., 2016)





12% of total  
shopping  
experience time

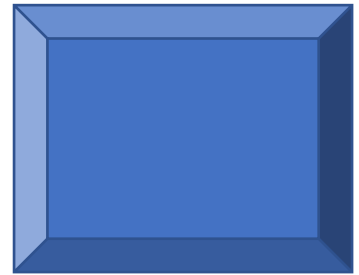
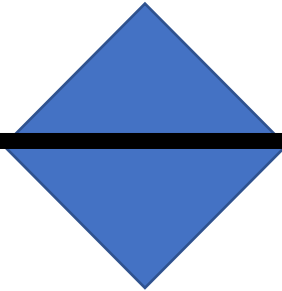
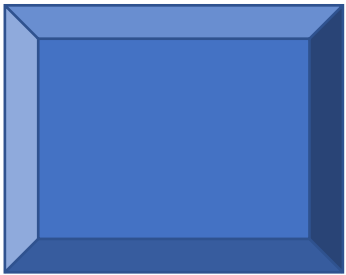
Spending time  
looking at and  
touching products  
translates directly  
to purchasing  
intention

# Signage Design



# Sign

**Plant (73%)**  
**Price (16%)**  
**Production-orientation (11%)**



Color, Size, Discount

\$13.99

Color, Size, Discount

**\$13.99**

# Color, Size, Discount

\$13.99

20% Off

Buy 3 get one  
free

\$2.80

# Color, Size, Discount

\$13.99

20% Off



Location on shelving: Most Expensive, Choice Product

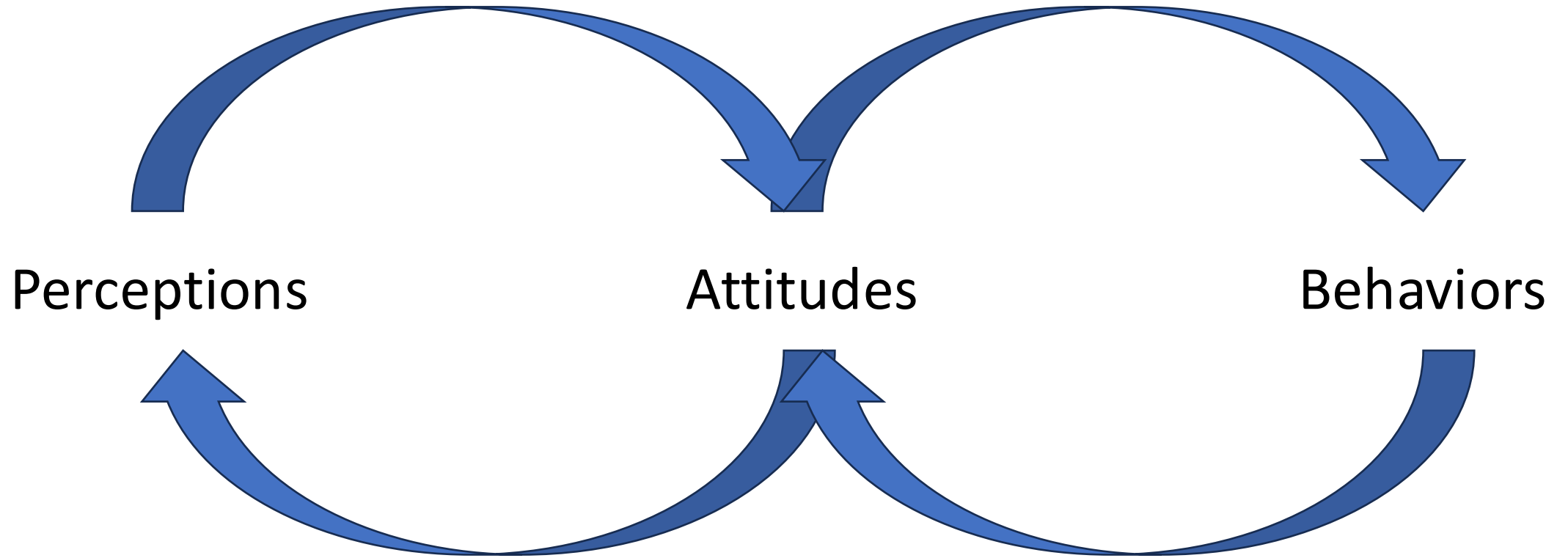


Location on shelving: Less expensive, but still considered choice



Location on shelving: Bargain products, Non-branded

# Decision-Making Process



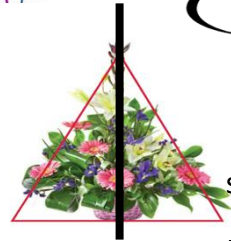


Perceptions

# Experiment 1 Design: Discrete Choice



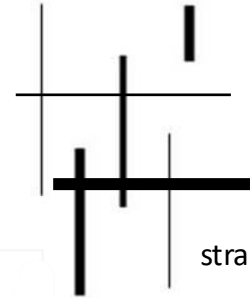
oblique



symmetric



asymmetric

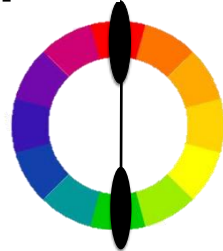


straight

polychromatic



complementary



analogous



monochromatic



rose



alstroemeria

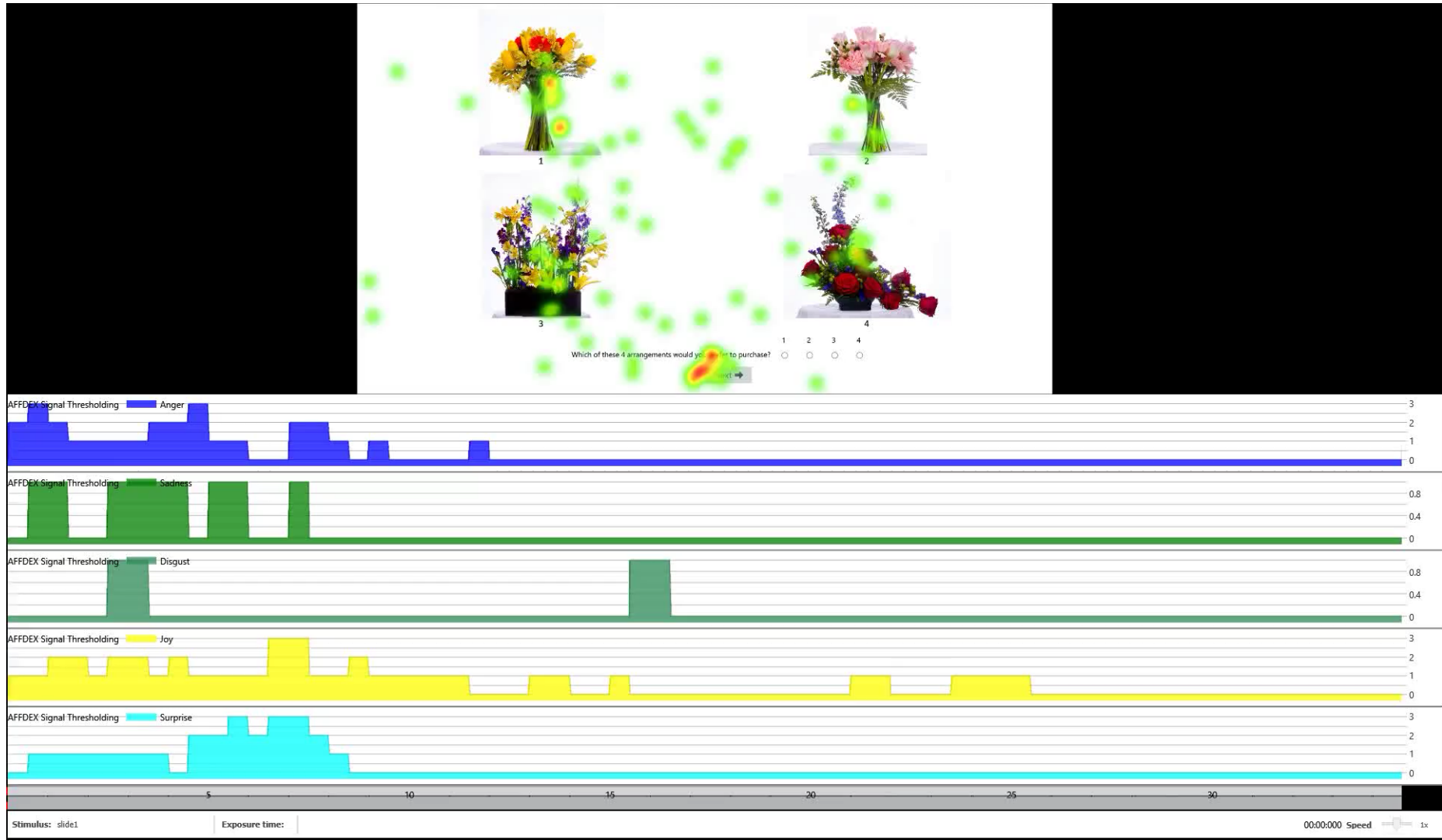


chrysanthemum



carnations





Aggregate heat map

# Eye-tracking with Floral Design

- Curved Light > Straight Line FC & TFD
- Symmetry > Asymmetry FC & TFD
- Polychromatic had > TTFF however...
  - Analogous garnered more total time and FC
- No difference in time spent looking at flowers but the consumers liked the rose arrangements the best



# Benefits Messaging (Hall and

Knuth, 2020; 2021; Knuth et al. 2023)

- Consumers buy benefits, not features
- Focus on what the products can do for the consumer
- **Physiological**
- Physical
- Social
- Environmental
- Economic



Gift  
ing vs.  
Self  
Purchasing

---

# MOTIVATION

---

## INTRINSIC



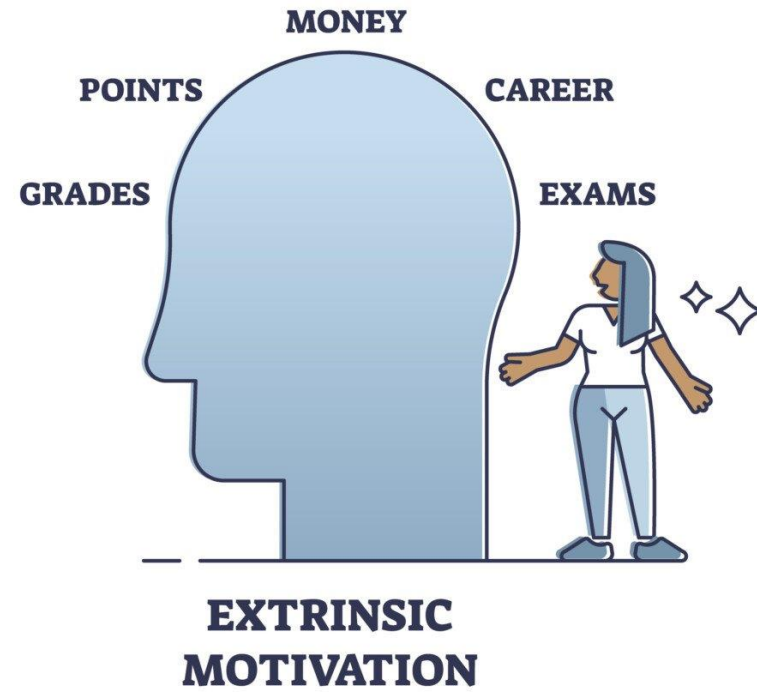
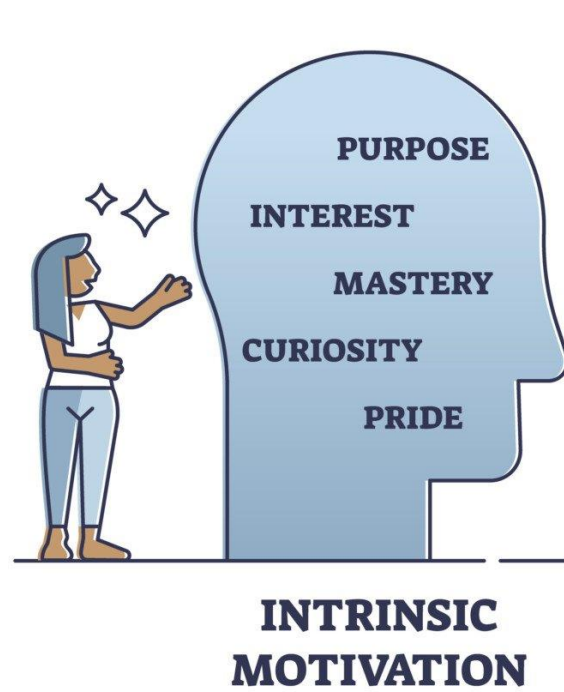
Behavior that is triggered from within a person. In other words, the person is **rewarding herself**.

vs.

## EXTRINSIC



Behavior that is driven by **external rewards** (given by others), such as money, grades, and praise.



# Gift-giving vs. Self-Purchasing

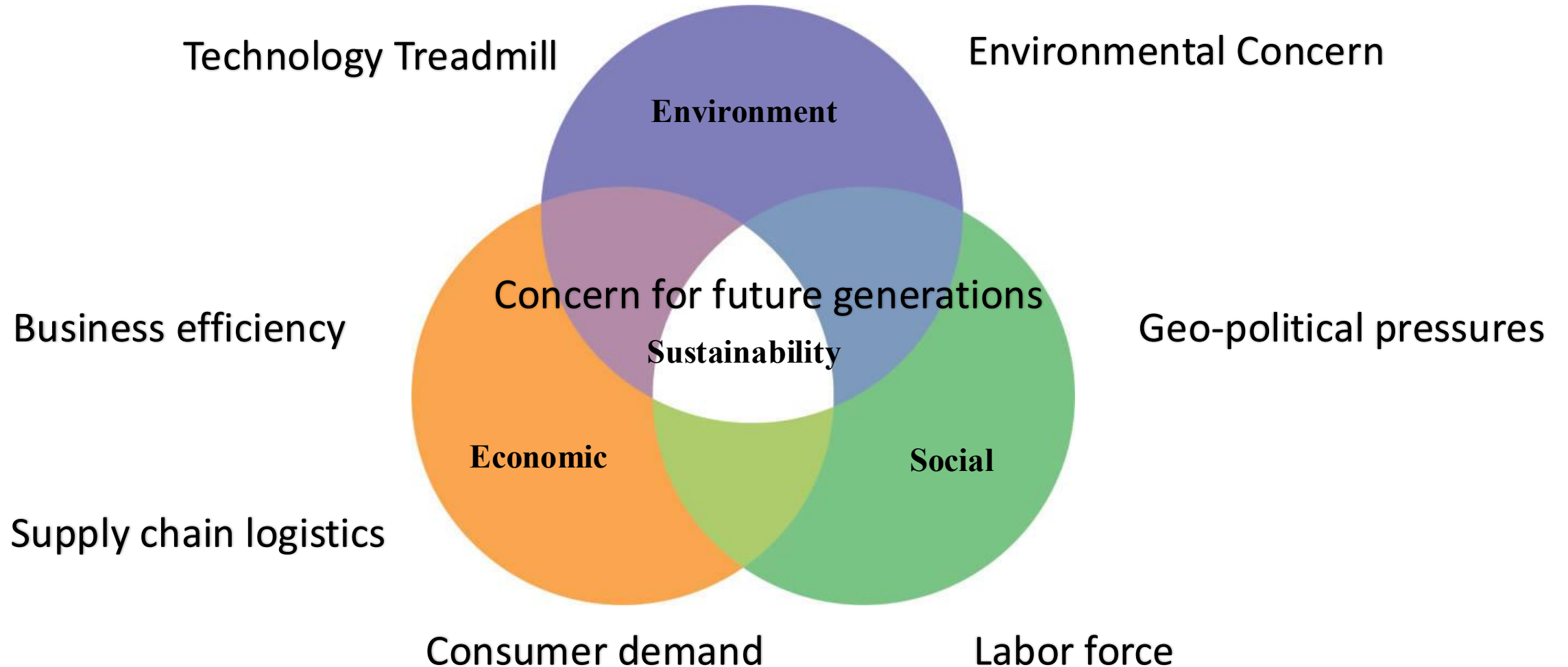
- Emotional and social wellbeing
- This is where we see higher expenditures with gift-giving
  - Self-guilt in buying for self
    - Self-Esteem
  - This is changing somewhat with social norms
- Higher end brands, "Prestige", can lead to high self-esteem
  - Associated with high end brand
  - Social cues of wealth and prestige
- When consumers feel constrained, they are less interested in self-gifting
  - This is driven by a belief that feeling constrained will hamper their ability to derive the emotional well-being benefits of self-gifting.





Attitudes

# Driving Forces of Sustainability



Consumers  
are in the  
driver's seat

## Change and Disruption in the Floral Industry

Dr. Melinda Knuth

Assistant Professor, North Carolina State University

Dr. Charlie Hall

Ellison Chair in International Floriculture, Department of Horticultural Sciences, Texas A&M University

Dr. Marco Palma

Professor and Director of Human Behavior Lab, Department of Agricultural Economics, Texas A&M University



Asociación Colombiana de Exportadores de Flores



**Ellison Chair in International Floriculture**

Teaching, Research, Extension and Service

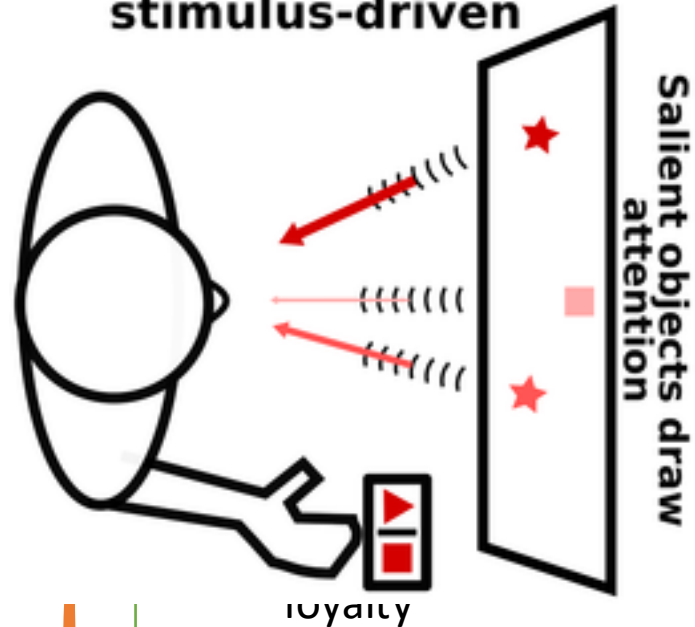
# Why do consumers become dissatisfied?

Haters Project, Melinda's Version

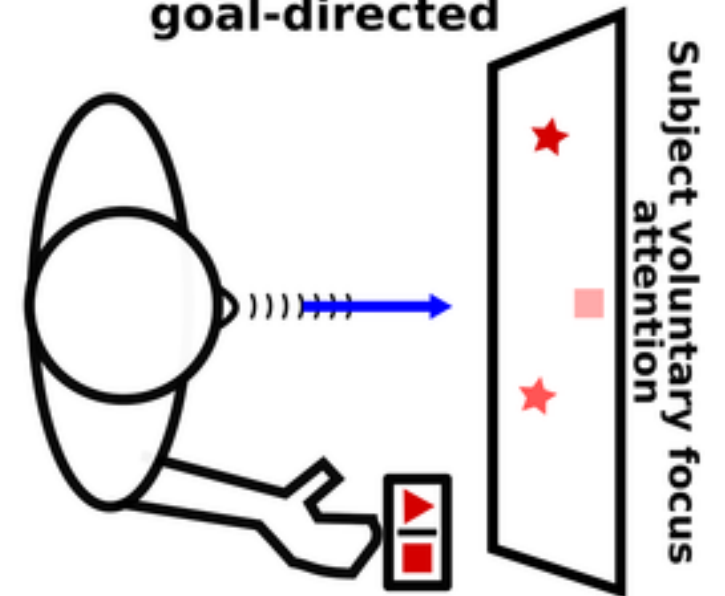
Top-down factors

- Demographics will influence

**Bottom-up**  
stimulus-driven



**Top-down**  
goal-directed



- Need to be both to repurchase

<b>Variable</b>	<b>Means or %</b>
First-time Plant Buyers (0-1)	<b>Detractors = 35.34%</b> <b>Promoters = 20.38%</b>
Recommendations <i>from</i> Friends (1-7)	<b>Detractors = 3.15</b> <b>Promoters = 3.67</b>
Impulse Buying (0-1)	Detractors = 1.50 Promoters = 1.42
In-store Buying (0-1)	Detractors = 45% Promoters = 51%
Plant Quality (1-7)	<b>Detractors = 4.22</b> <b>Promoters = 4.76</b>
Pleasure with Purchase Success (1-7)	<b>Detractors = 4.89</b> <b>Promoters = 6.48</b>
Purchase Outcome Desirability (1-7)	<b>Detractors = 4.93</b> <b>Promoters = 6.54</b>
How likely are you to buy a plant from that seller again? (1-10)	<b>Detractors = 4.67</b> <b>Promoters = 10.31</b>
How likely are you to write a positive review for that seller? (1-10)	<b>Detractors = 4.13</b> <b>Promoters = 9.18</b>

# What sets Haters apart and how to fix it



Education is key, especially for first time buyers



Impulse purchasing and in-store versus online make no difference on satisfaction and delight

It's about the outcome of the purchase  
Quality of the purchase



A great way to tell if they are loyal and happy is if they will recommend to others/make online review.

Behaviors



# Social Media Use


- **Age and ...**
  - Online shopping = -0.276
  - Following a floral retailer or grower -0.486
  - # of social media accounts = -0.569
  - First time buyer = -0.454
- **First time buying and ...**
  - Buying flowers online = 0.404
  - Following a floral grower or retailer = 0.509
  - # of social media accounts = 0.544



# Purchase comparison of online and in-store floral purchasers

- Online plant buyers:
  - 73% of their plants online (27% in-store)
  - 54% of online plant buyers bought no plants in the store.
- ▶ In-store plant buyers:
  - ▶ 89.6% of their plants in-store (10.4% online)
  - ▶ Only 8% of the bought no plants online.



A man with short dark hair, wearing a light blue button-down shirt, is sitting and looking at a silver laptop. He is in a well-lit room with green plants in the background. The image is semi-transparent, serving as a background for the text.

# Demographics: online v. in-store floral purchasers

- Age: 42 v. 47 years old
  - Younger people shopping online
- Gender: 10% female v. 89% female
  - More males shopping online
- Income: \$127K v. \$65K
  - More affluent consumers shopping online

## Demographics: online v. in-store plant purchasers

- Adults in household: 2.00 v. 2.03
  - Not a significant difference
- Children in household: 1.85 v. 0.50
  - More parents shopping online
- Percent Caucasian: 23.3% v. 89.9%
  - More ethnically diverse online audience





**+ Line**



**+ Filler**



**+ Unique**





# Beauty Is In The Mind of The Beholder

**Melinda Knuth, PhD**  
**Assistant Professor**  
**North Carolina State University**