

VII Workshop de Marketing-ACEDE (29 & 31 Enero 2024)

Nuevas Perspectivas en el Estudio del Comportamiento del Consumidor

Ana Valenzuela
Baruch College, CUNY, USA
& ESADE, Barcelona

A bit about me

- ★ Professor of Marketing at ESADE, Barcelona & Baruch College, CUNY.
- ★ Consumer Psychology Researcher using Experimental Methods.
- ★ Founding Member of the Decision Lab at ESADE.

Some of my Insights



Surprising
Promotional Incentives



Beliefs in Karma
and WOM



Haptic Feedback
through Tech Gadgets
increases Compliance



Swiping affects
Product
Attachment



Metabeliefs
about
Retailer Strategies
affect Inferences

A bit on Methodology.....

Experimentation is the Next Great Business Transformation



“Our success is a function of how many experiments we do per year, per month, per week, per day.”

Jeff Bezos



“Our company culture encourages experimentation and free flow of ideas.”

Larry Page



“One of the things I’m most proud of, and I think what is the key to our success, is this testing framework we’ve built.”

Mark Zuckerberg



“Instead of saying ‘I have an idea,’ what if you said ‘I have a new hypothesis, let’s go test it.’”

Satya Nadella

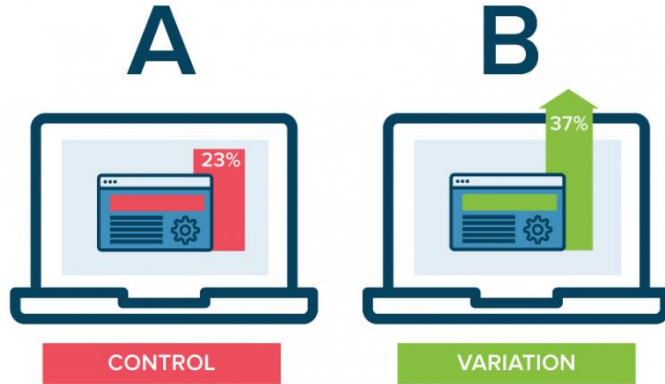


What is testing?

A method for improving performance and learning about your consumer through controlled experiments.



In an A/B test, the following occurs:



- We begin with an idea of what we would like to test and a hypothesis for why we think this change will perform better for our key goal
- In the experiment, visitors are shown two different versions of an experience, and their engagement with each is measured
- Whichever version performs best for the predetermined goal is then implemented, until a new hypothesis is tested



ANNIE SPRATT/UNSPLASH.COM

EXPERIMENTATION

The Surprising Power of Online Experiments

by Ron Kohavi and Stefan Thomke

FROM THE SEPTEMBER–OCTOBER 2017 ISSUE

⌂ Loading...

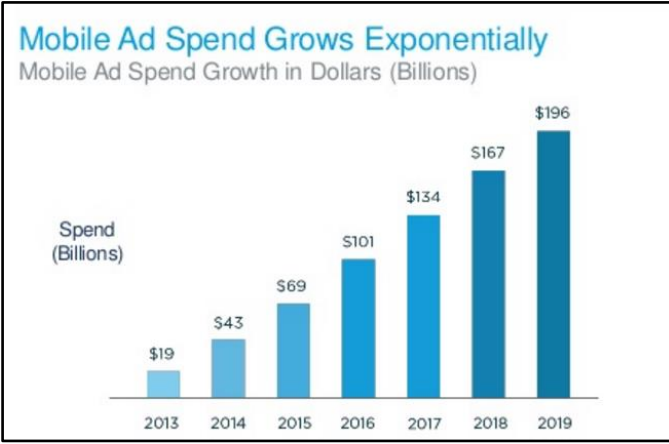
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Technology-Augmented Choice: How Digital Innovations Are Transforming Consumer Behavior



- E-commerce transactions on touch devices, such as tablets and smartphones, growing 3x faster than US e-commerce overall.
- ChatGPT has 180 million users and 1.5 billion visits per month.
- U.S. installed base of smart speakers hit 66 million in 2020 = 252 million adults using voice-assistants in their homes or cars.

How do these new modalities affect behavior?

Consumer Technology Interactions

**Consumer-Product
Interactions**



**Retail and Service
Atmospherics**



**Marketing
Communications**

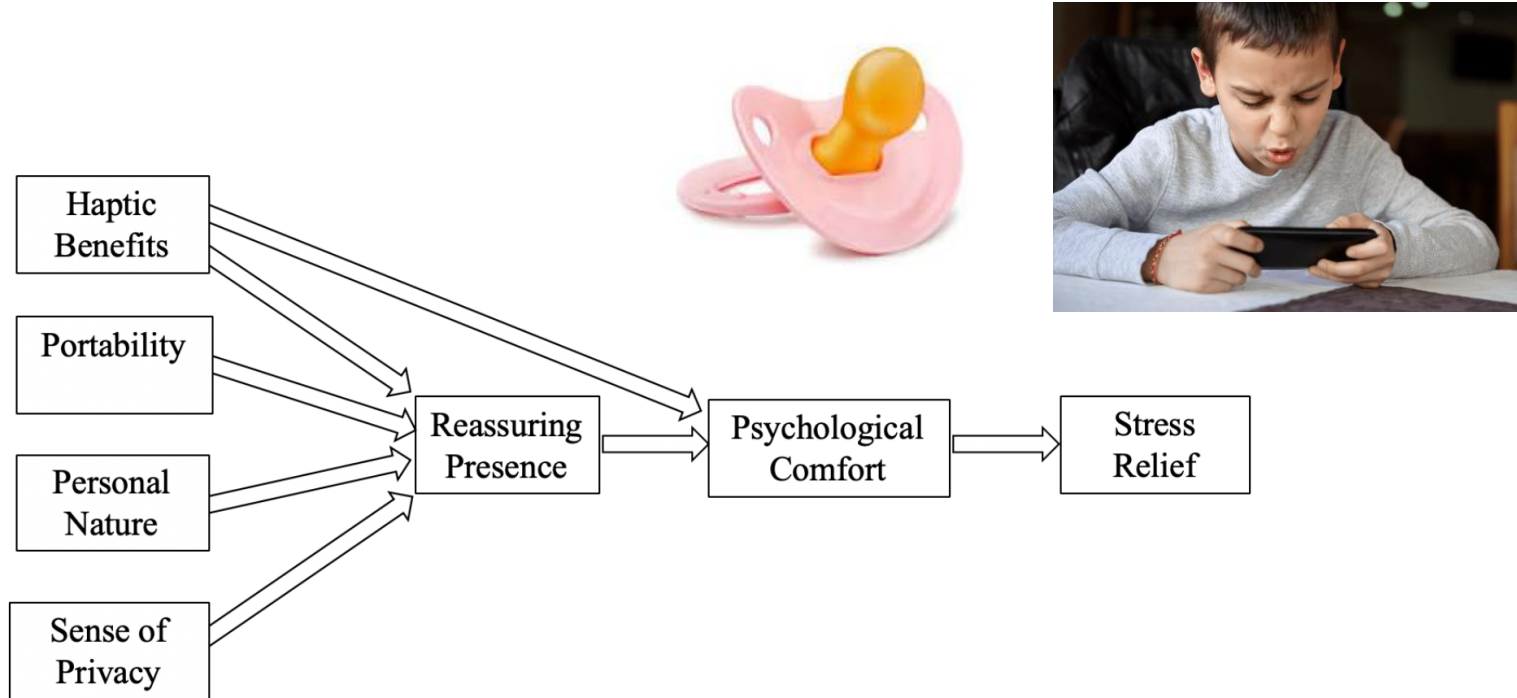


Devices.....

The Smartphone as a Pacifying Technology

Shiri Melumad, Michel Tuan Pham, The Smartphone as a Pacifying Technology, *Journal of Consumer Research*, Volume 47, Issue 2, August 2020, Pages 237–255

Conceptual Model: Smartphones as a Source of Psychological Comfort



“Brain Drain”

Adrian F. Ward, Kristen Duke, Ayelet Gneezy, and Maarten W. Bos (2017) Brain Drain: The Mere Presence of One’s Own Smartphone Reduces Available Cognitive Capacity, *Journal of the Association for Consumer Research*, 2:2, 140-154

THE CONSUMER IN A CONNECTED WORLD

Brain Drain: The Mere Presence of One’s Own Smartphone Reduces Available Cognitive Capacity

ADRIAN F. WARD, KRISTEN DUKE, AYELET GNEEZY, AND MAARTEN W. BOS

ABSTRACT Our smartphones enable—and encourage—constant connection to information, entertainment, and each other. They put the world at our fingertips, and rarely leave our sides. Although these devices have immense potential to improve welfare, their persistent presence may come at a cognitive cost. In this research, we test the “brain drain” hypothesis that the mere presence of one’s own smartphone may occupy limited-capacity cognitive resources, thereby leaving fewer resources available for other tasks and undercutting cognitive performance. Results from two experiments indicate that even when people are successful at maintaining sustained attention—as when avoiding the temptation to check their phones—the mere presence of these devices reduces available cognitive capacity. Moreover, these cognitive costs are highest for those highest in smartphone dependence. We conclude by discussing the practical implications of this smartphone-induced brain drain for consumer decision-making and consumer welfare.

We all understand the joys of our always-wired world—the connections, the validations, the laughs . . . the info . . . But we are only beginning to get

Framework: Sensory Marketing





VOICE

Voice-activated Assistants



What about voice?

- Conversational
- Frictionless – However, comparisons require Working Memory
- Converts into Sales
 - Consumers on average spend 23% more as a result of adopting a voice assistant, corresponding to approximately US\$ 630 million increase in sales revenue.

THE WALL STREET JOURNAL.

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MANAGEMENT & CAREERS

Alexa: Don't Let My 2-Year-Old Talk to You That Way

Children are using voice-activated technology at far younger ages than other devices, but some parents worry they're picking up rude habits



MARK MATCHO

SHARE

“Alexa,
Are we lowering ourselves to machine level or are
Machines raising to human levels
....please?”



Thinking while Speaking is Hard: Choices

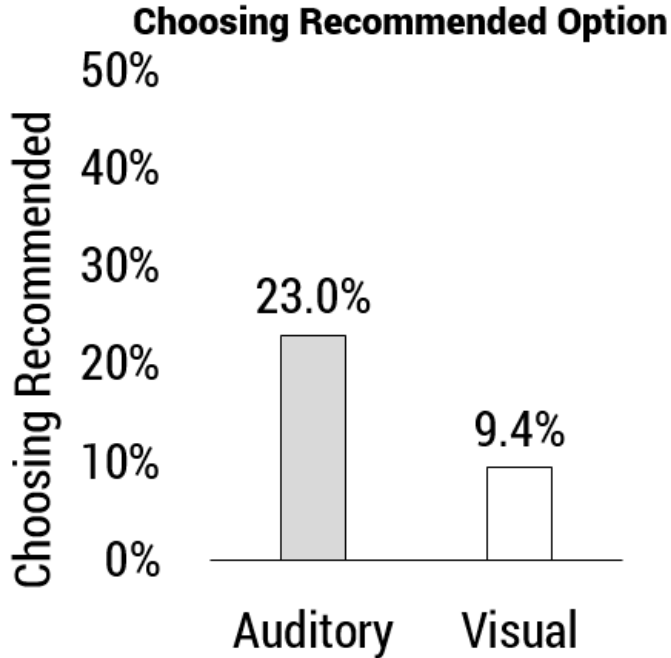
- Making decisions based on Voice is **Cognitively Challenging**.
 - Auditory consumers place greater **importance** on product attributes that are **easier to evaluate**.
- **Less able to differentiate:**
 - Higher Prob to Accept Recommendation (or defer choice).



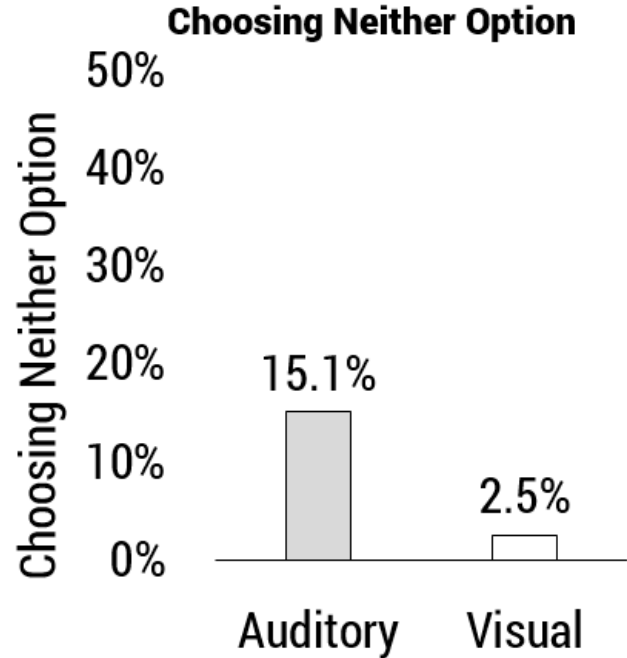
Munz & Morwitz (2019): “Not-so Easy Listening: Roots and Repercussions of Auditory Choice Difficulty in Voice Commerce,” working paper.

Recommended choice for 'paper towels.'

Excellent absorbency. 34 square feet per roll. Easily sizeable sheets. 4.6 stars based on customer reviews. \$2.10 per roll. Second option. Excellent absorbency. 37 square feet per roll. Easily sizeable sheets. 4.7 stars based on customer reviews. \$2.10 per roll



$$X^2(1; N = 311) = 10.65, p = .001$$



$$X^2(1; N = 311) = 15.60, p < .001$$

Speaking is Human: The Art of Conversation

- **Language Accomodation Theory** (*Gallois, Ogay, and Giles 2005*)
 - Activation of the particular linguistic representation used by a speaker in the listener's mind
 - Automatic process
- Convergence = **Altering linguistic patterns** to adopt styles more like that of their interaction partners (*Wisniewski, Mantell and Pfordresher 2013*).
- Downstream Effect = **Verbal mimicry** may influence opinions (*Tanner, Ferraro, Chartrand, Bettman, and van Baaren 2008*).

Device-Voice Interactions

- Novel approach that **links phonetic signals** in the human voice to **consumer experience**
- **Command**-based (vs. **request**-based) voice inputs
- **Experiential Effects** for consumers...
 - Is the way consumers “voice” preferences consequential?
 - Is there friction in the hierarchy between the voice-activated “assistant” and the “user”?

Hildebrand, C., Hoffman, D., & Novak, T. (2021). Dehumanizing Voice Technology: Phonetic & Experiential Consequences of Restricted Human-Machine Interaction. arXiv preprint arXiv:2111.01934

Study: Willingness to Pay for Status-related Products

WTP (10% to 120% of retail price) for status (e.g. watch, silk tie) vs. non-status products.



Commands

- Computer: Tell me who is the author of Great Expectations
- Computer: Tell me what is the tallest building in New York City
- Computer: Tell me a joke about monkeys
- Computer: Tell me a scary story
- Computer: Sing a song? [...]
-

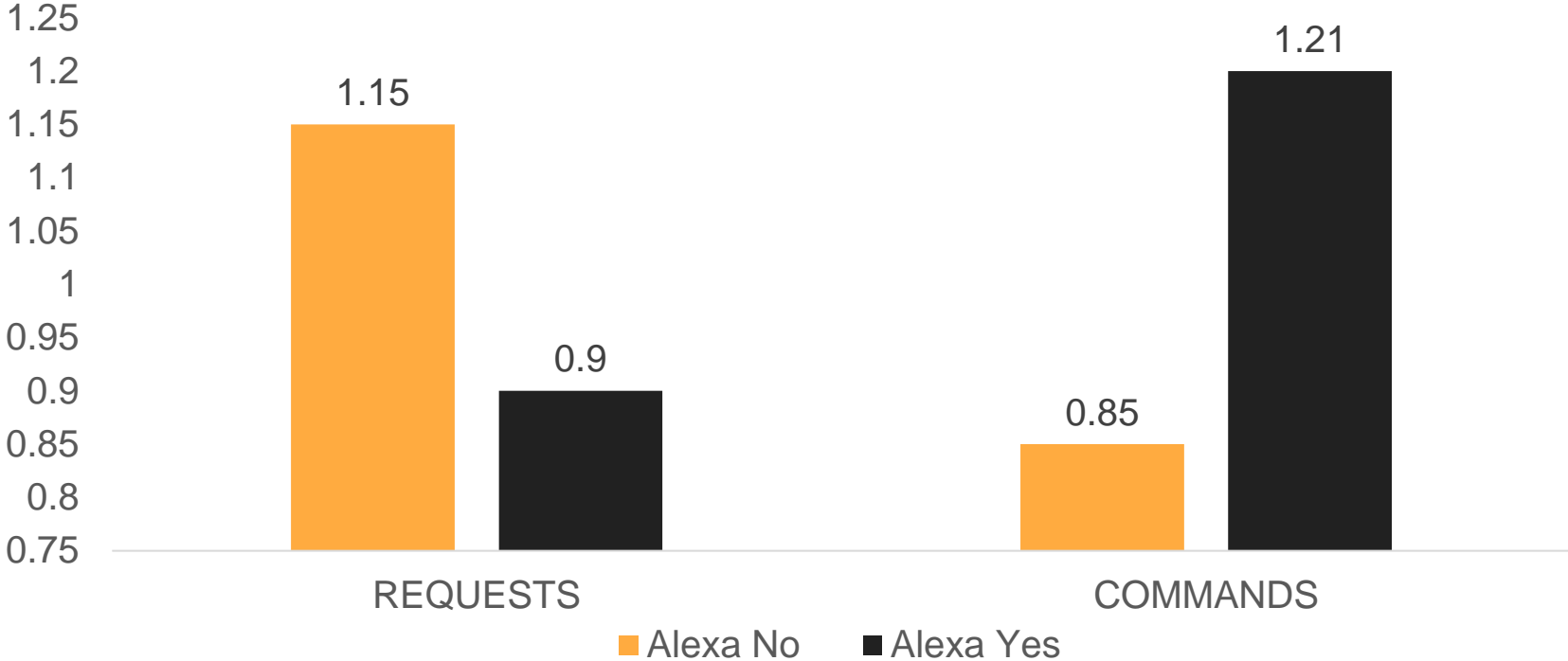
Requests

- Computer: Can you tell me who is the author of Great Expectations?
- Computer: Can you tell me what's the tallest building in New York City?
- Computer: Can you tell me a joke about monkeys?
- Computer: Can you tell me a scary story?
- Computer: Can you sing a song? [...]
-



Results: Willingness to Pay for Status-related Products

WTP (10% to 120% of retail price) for status (e.g. watch, silk tie) vs. non-status products.

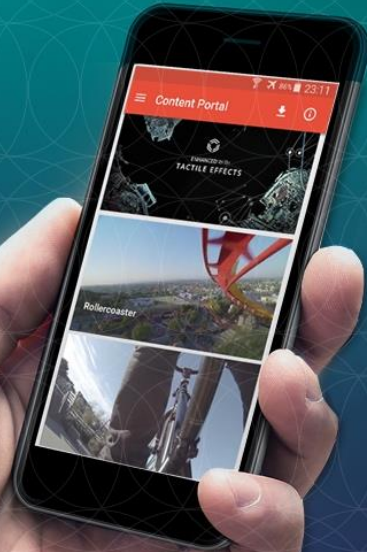




HAPTICS

The Power of Touch

Tactile feedback turns small and impersonal video viewing into a personal and engaging experience.



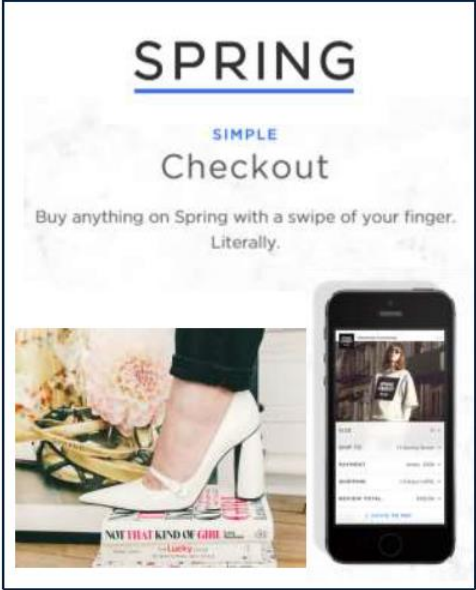
Touch increases sense of Ownership: Product Valuation

- Online marketing activities are filtered through the lens of the *interfaces* used to explore them
- ***Touch-based devices*** like tablets lead to higher product valuations



Brasel & Gips (2014) "Tablets, Touchscreens, and Touchpads: How Varying Touch Interfaces Trigger Psychological Ownership and Endowment," *Journal of Consumer Psychology*, 24(2), 226–233.

How We Touch Matters: Ease of Swiping



Anneleen Van Kerckhove, Mario Pandelaere, Why Are You Swiping Right? The Impact of Product Orientation on Swiping Responses, Journal of Consumer Research, Volume 45, Issue 3, October 2018, Pages 633–64

Good Vibrations: Consumer Responses to Technology-Mediated Haptic Feedback

Rhonda Hadi, University of Oxford

Ana Valenzuela, Baruch College, CUNY &
ESADE Business School

Technology can Touch us Back: Haptic Feedback

https://www.kickstarter.com/projects/woodenshark/taptap

Ana Valenzuela - Outlook Web

TapTap, a touch communic...

PREORDER AT TAPTAP.ME

890 backers

\$107,148 pledged of \$130,000 goal

They originally envisioned it for couples, but some parents used it to help calm a child who was prone to panic attacks. Some others used it to comfort elderly parents, also young children who clearly can't talk/type yet, but could still "process" the meaning of the vibration.

TapTap is a technology to transfer touch between two people. It can also be an activity tracker, a game controller or smart alarm.

Woodenshark

2 created | 16 backed

woodenshark.com

WOODEN SHARK

6:39 PM 1/19/2015

Haptic feedback in mobile marketing communications



Stoli's Mobile Ads Let You Actually Feel a Cocktail Being Made in Your Hand

Haptic technology is getting brands' attention
By Lauren Johnson

October 29, 2015, 8:30 AM EDT Technology



Stoli's mobile ads have a real kick to them. *Stoli*



Haptic Feedback shapes Behavior: Motivational Touch (Hadi and Valenzuela 2019)



Haptic Feedback: The Step Challenge

Alert Manipulation

Auditory:



Haptic:



Auditory + Haptic:



Task Instructions



Text Messages

5 Messages Total

Examples:

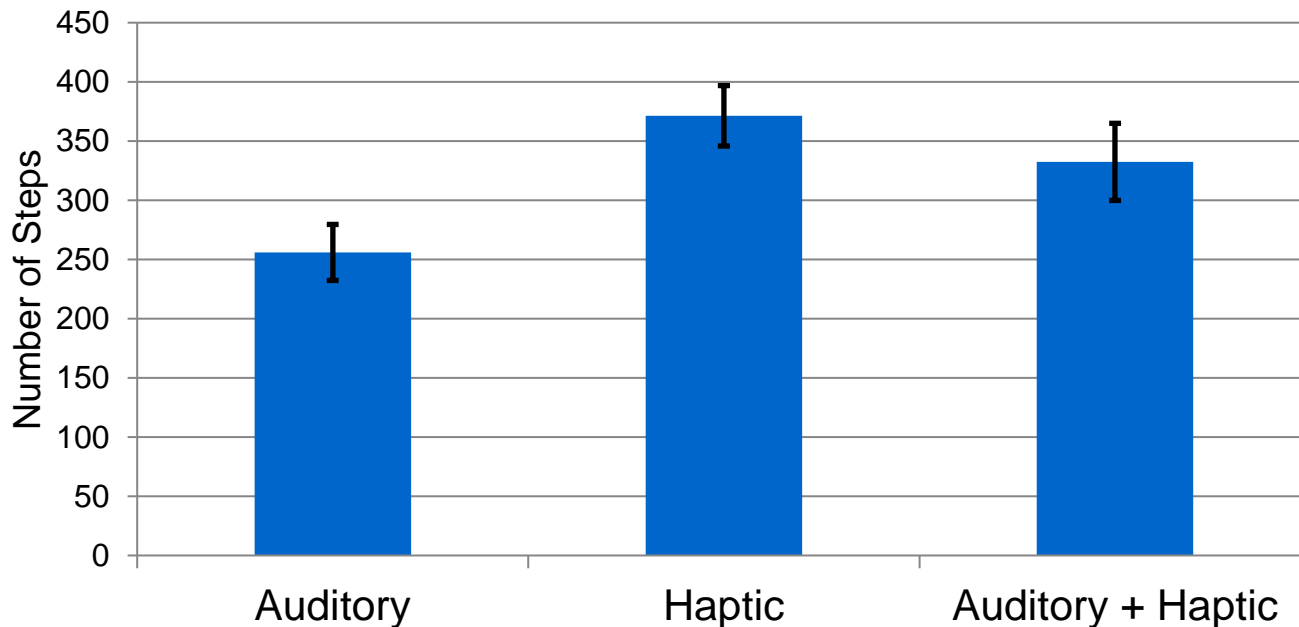
“You’re doing great!
Keep it up.”

“If you feel tired, take a
deep breath.”

Rhonda & Valenzuela (2019). “Good Vibrations: Consumer Responses to Technology-Mediated Haptic Feedback,”
Journal of Consumer Research, 47, 256–271.

Haptic Feedback: The Step Challenge

Task Performance by Alert Type

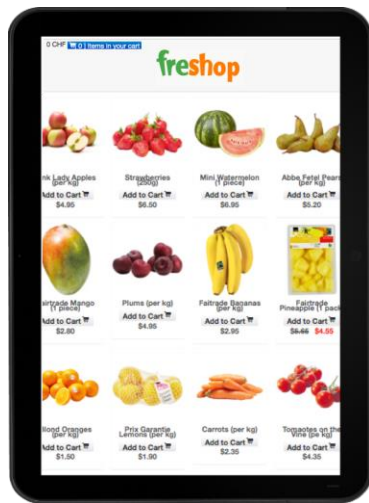


Online Grocery Shopping Task (Hampton & Hildebrand 2019)

Good Buzz, Bad Buzz: Using Vibrotactile Feedback to Shape Consumer Choice)

- Completed in controlled behavioral lab environment
- n=140
- 44% women
- M_{age} = 23.1
- Regular food shoppers
- Randomly assigned

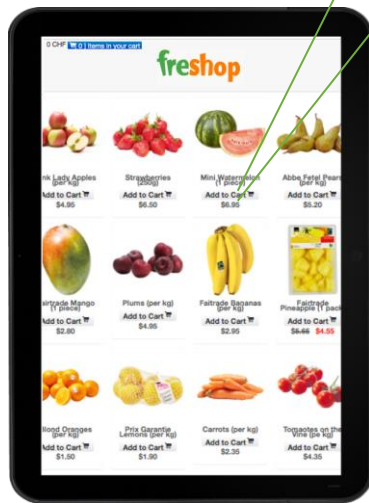
+25.8%



Control

Items in Basket:

57.84



Vibration

vs. 72.78



**BOTS
AGENTS**

Advice Bots.....

"Bots are the new apps."

*"fundamentally revolutionize
how computing is
experienced by everybody."*

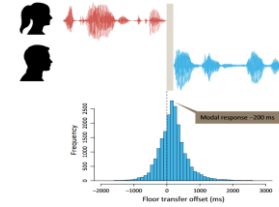
(Satya Nadella, CEO Microsoft, 2016)



Bots as Social Actors

1. Fundamental characteristics of human-to-human conversations

- **Turn-taking** as a distinctly **human** characteristic (Levinson, 2016, Cassell et al., 2000) and driver of **intimacy** (Sprecher et al., 2013; Bickmore & Cassell, 2001)



Levinson, 2016

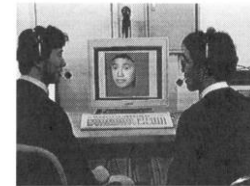


Figure 2: Conversation with a social agent

Nagao & Takeuchi, 1994

2. Computers as 'social actors'

- People apply the same "**social heuristics**" they use between humans to computers (Nass, Steuer, & Tauber, 1994; Nass & Moon, 2000)



Delbaere,
McQuarrie &
Phillips, 2011

Experiment 1

Objectives:

- Direct test of **humanness-brand intimacy link**
- Test in 'real world' environment
 - Comparison relative to traditional interface

Design:

- Between-subjects design
 - **Traditional** Booking Interface
 - **Conversational** Interface
- N = 236 regular rental car customers (M_{Age}=37.14, 49% females)

DVs:

- Perceived Humanness
- Brand Intimacy

Non-Conversational Interface

The screenshot shows a traditional car rental booking interface. At the top, it says "AI-RENTAL" and "AI-Rental booking system: Pickup and Return date". Below this, there are input fields for "Pickup" (San Francisco) and "Return" (San Angeles). A calendar is displayed for April and May 2018, with dates 1 through 31. Below the calendar, there are three car options: Compact (Up to 4 passengers and 2 suitcases), Sedan (Up to 5 passengers and 4 suitcases), and SUV (Up to 5 passengers and 4 suitcases). The SUV option is highlighted with a red box. Below the car options, there are three more car options: Economy (Nissan Rogue or similar), Standard (Hyundai Santa Fe or similar), and Intermediate (Ford Expedition or similar). The Standard option is highlighted with a red box.

Conversational Interface

The screenshot shows a conversational car rental booking interface. It starts with a question: "Is this the same location where you'd like to return the vehicle?" with a "Yes" button. Below this, there are three car options: Compact (Up to 4 passengers and 2 suitcases), Sedan (Up to 5 passengers and 4 suitcases), and SUV (Up to 5 passengers and 4 suitcases). The SUV option is highlighted with a red box. Below the car options, there are three more car options: Economy (Nissan Rogue or similar), Standard (Hyundai Santa Fe or similar), and Intermediate (Ford Expedition or similar). The Standard option is highlighted with a red box. At the bottom, there are three buttons: Economy, Standard, and Intermediate.

Experiment 2

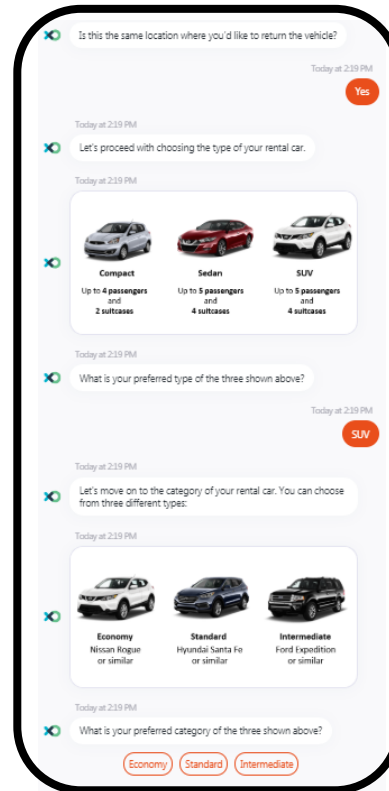
Objectives:

- Alter humanness perceptions through **communication style** (formal vs. informal)

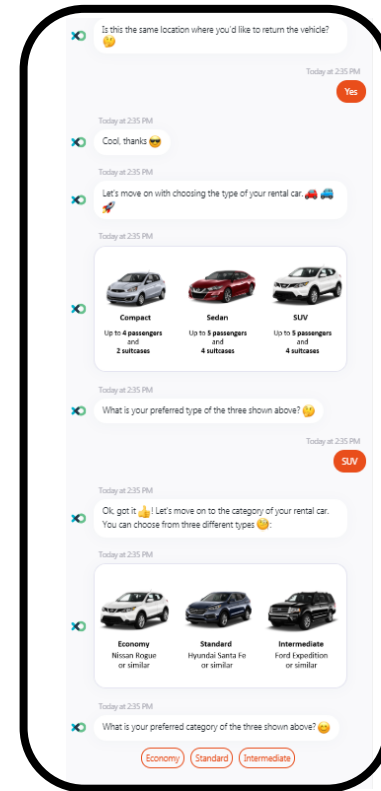
Design:

- Between-subject design
 1. **Traditional** booking interface
 2. **Formal** conversational interface
 3. **Informal** conversational interface
- N = 217 rental car customers ($M_{Age}=31.6$, 52% females)

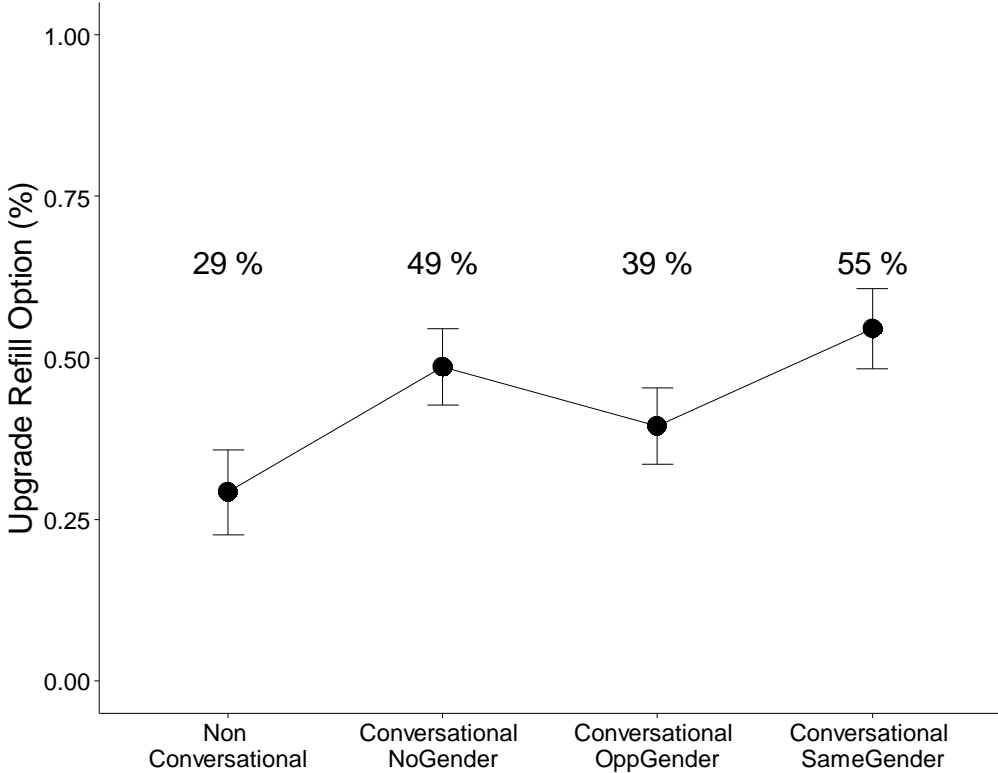
Formal Conversational Interface



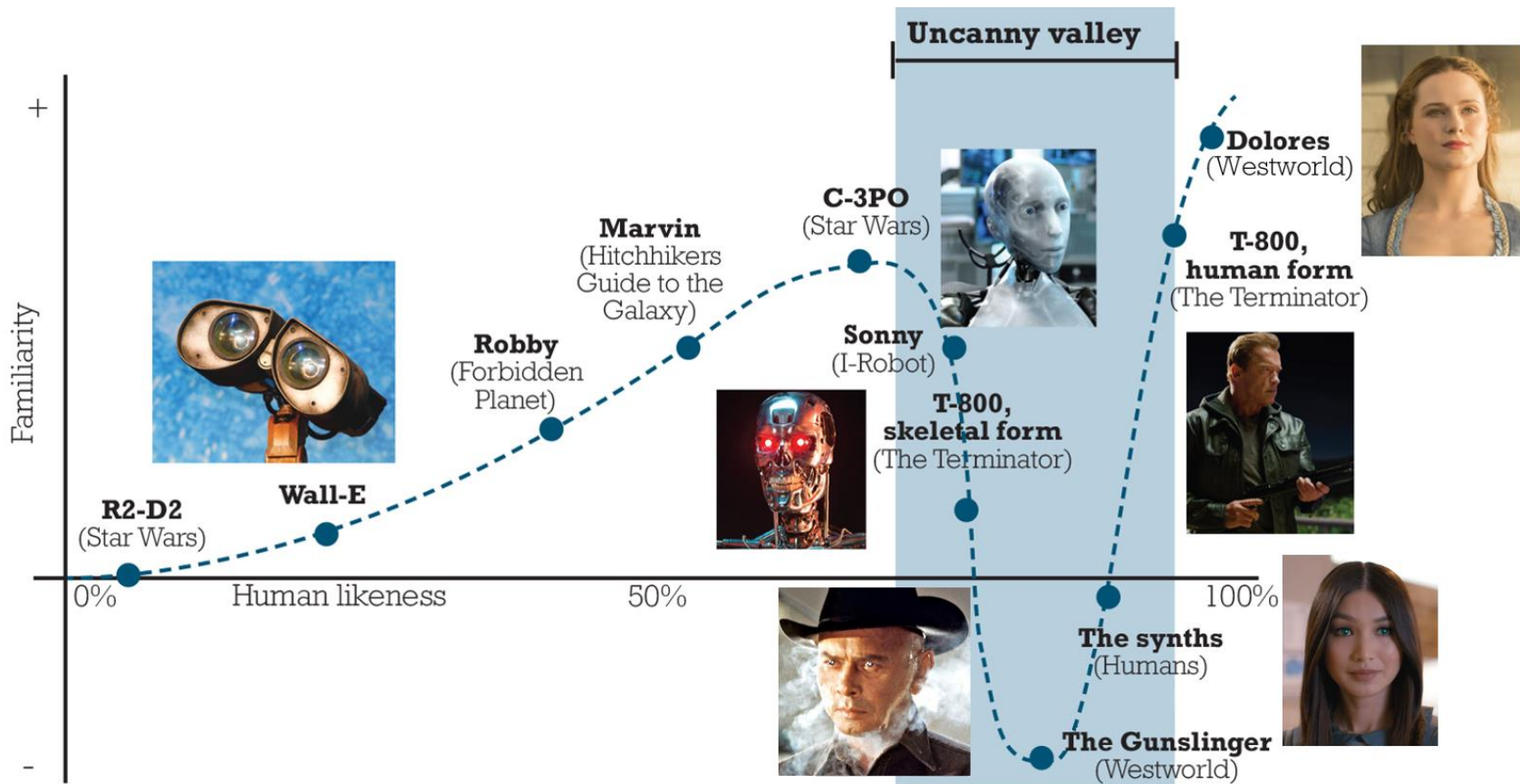
Informal Conversational Interface



Experiment 3: Bots as 'Influence Agents'



Anthropomorphization and the Uncanny Valley.....





When robots generate instructions: consumers compliance and the role of perceptions of justice

Valentina Pitardi, *Surrey Business School*

Ana Valenzuela *Baruch College, CUNY and ESADE-Ramon Llull*



Robots giving instructions


INSIDER

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HOME > TECH CONTRIBUTORS

This airport robot will take your bags at the curb, check you in, and send you on your way

Calley Rizzo, Travel + Leisure Jun 7, 2017, 2:01 PM



Turn curiosity into customers

THE WALL STREET JOURNAL



Terrible Traffic? Call In the 7-Foot-Tall RoboCops

GOV.UK Digital Marketplace

BETA Help us improve the Digital Marketplace - [send your feedback](#)

Digital Marketplace > [Cloud hosting, software and support](#) > [Cloud software](#)
> Artificial Intelligence Tax and Revenue Chat Bot – Virtual Assistant

E 2 U TECHNOLOGY SOLUTIONS LTD

Artificial Intelligence Tax and Revenue Chat Bot – Virtual Assistant

Herbie Tax and Revenue Bot Virtual Assistant is an Artificial intelligent virtual chat bot responds to all HMRC related queries, collect taxes, process refunds, resolve to complaints, etc. automatically. The AI chatbot can be accessed 24x7 securely with voice or text command that reduces cost and improves customer experience.

Mediation by Justice: Instructions to enter the lab

N= 152 participants; 3 conditions: AI vs human vs sign

"Please, you need to wait here. Please don't use your phone while waiting"

Participants were forced to wait for 15 minutes, then they were asked to enter the other room.



Satisfaction: How satisfied are you with the experiment experience? 1 = "not at all satisfied," and 7 = "very satisfied"

Procedural Justice: The procedures followed by the research assistant in handling the experiment were fair/treated everyone equally/made no distinction in how they treated the participants
1 = "strongly disagree," and 7 = "strongly agree"

Interactional Justice: The assistant treated me with courtesy/Understood exactly the situation/Seemed to care about me; 1 = "strongly disagree," and 7 = "strongly agree";

$M_r = 14\%$ $M_h = 52\%$ $M_s = 34\%$, $\chi^2(2, 152) = 30.45, p < .001$

Consumer-Technology Interactions

**Device-Dependent
Interactions**



**Retail and Service
Atmospherics**



**Marketing
Communications**





**AUGMENT
ED
REALITY**

**METAV
ER
SE**



Virtual Reality.....

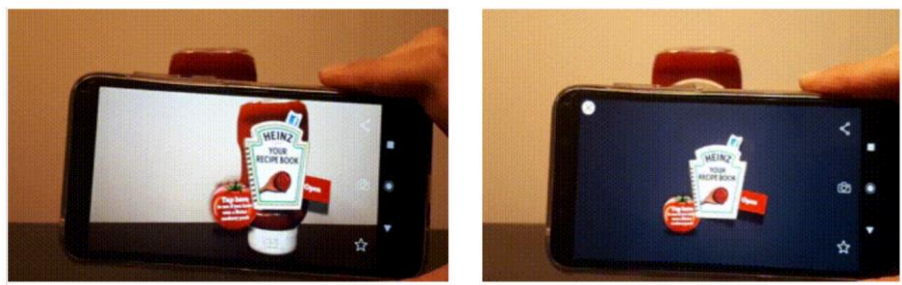
Projecting media in your space

Augmented Reality

- AR View that lets customers visualize online products in their **own living space**, using their smartphone camera.
- Research supports that it assist with “self-brand connections” (Chung and Jun 2019)



AR and Learning



- Application of AR is to **educate consumers** how to use the product or create new applications.
- Process: Abstract thinking (future usage of a product) turns into a **concrete, connected to reality**.
- **Lived connection** with the “future product” = **self-efficacy**.

Batista, Valenzuela, Hadi (2022) “On My Table, Close to Me, I Can Do It: Augmented Reality Effects on Desirability through Concreteness and Self-Efficacy,” Working paper.

AR and Desirability

- AR in the food and beverage sector in an effort to enhance the **customer experience**.
- AR's unique ability to visually **superimpose objects** onto a real-time environment increases consumers' ability to **mentally simulate**.
- More desirability because enhanced **personal relevance** for the food items.



Fritz & Hadi (2022) "A Feast for the Eyes: How Augmented Reality Influences Food Desirability,"
Journal of the Academy of Marketing Science, 51(3), 503-529

Virtual Reality and Empathy

- Marketer interest in using virtual reality (VR) as a **persuasion tactic** continues to rise.
- Non-profit marketing: **Charities** have devoted considerable resources to creating VR appeals.
- Assessing actual donation behaviors: **VR appeals increase donations compared to a two-dimensional (2D) format.**
 - Process: **Empathy**

Kristofferson, Daniels & Morales (2022). Using virtual reality to increase charitable donations. *Mark Letters*, 33, 75–87.

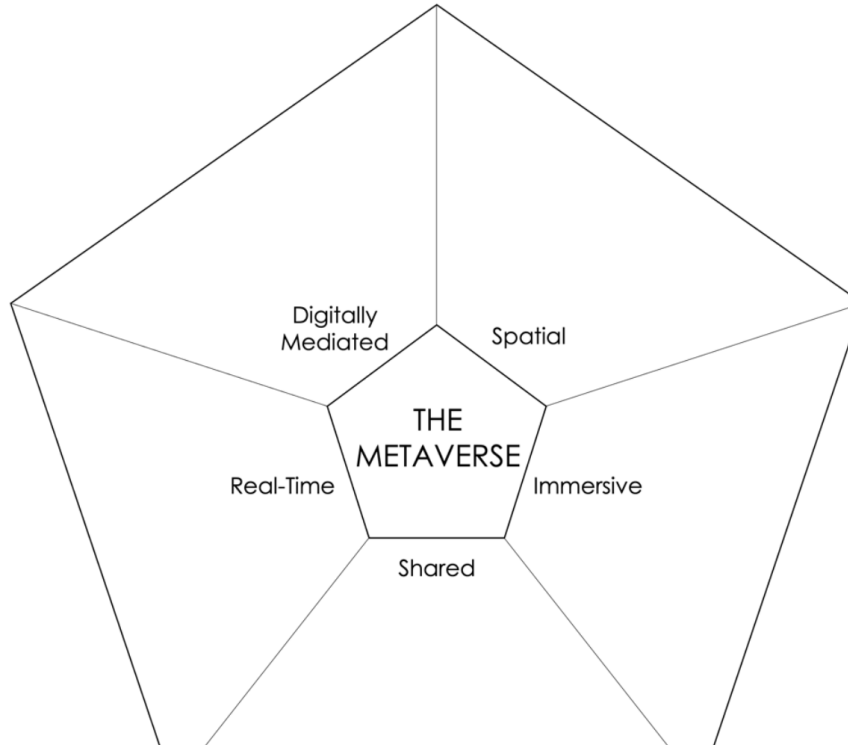
Metaverse.....

Metaverse

- First virtual world was [Second Life](#) (SL)
- A “virtual world” is a digital **space (broader sense of space)** where you can spend time together and do nothing – you don’t need to play a game, for example – and no headset is required.
- The Metaverse is a purely aspirational concept that would allow for an open, connected and inter-operable network of virtual environments dedicated to social interaction = **Web3**

Metaverse = Research Dimensions

Hadi, R., Melumad, S., & Park, E. S. (2024). The Metaverse: A new digital frontier for consumer behavior. *Journal of Consumer Psychology*, 34(1), 142-166.



Metaverse = Immersion

- The Benefits of Immersion
 - Improve [recall of information](#)
 - Greater [sense of embodiment and presence](#)
- Helps marketers make experiences more interactive and less passive.
- The term “resident,” or “citizen,” for virtual world users indicates they have a stake within that community and moves them into an active role instead of a passive one

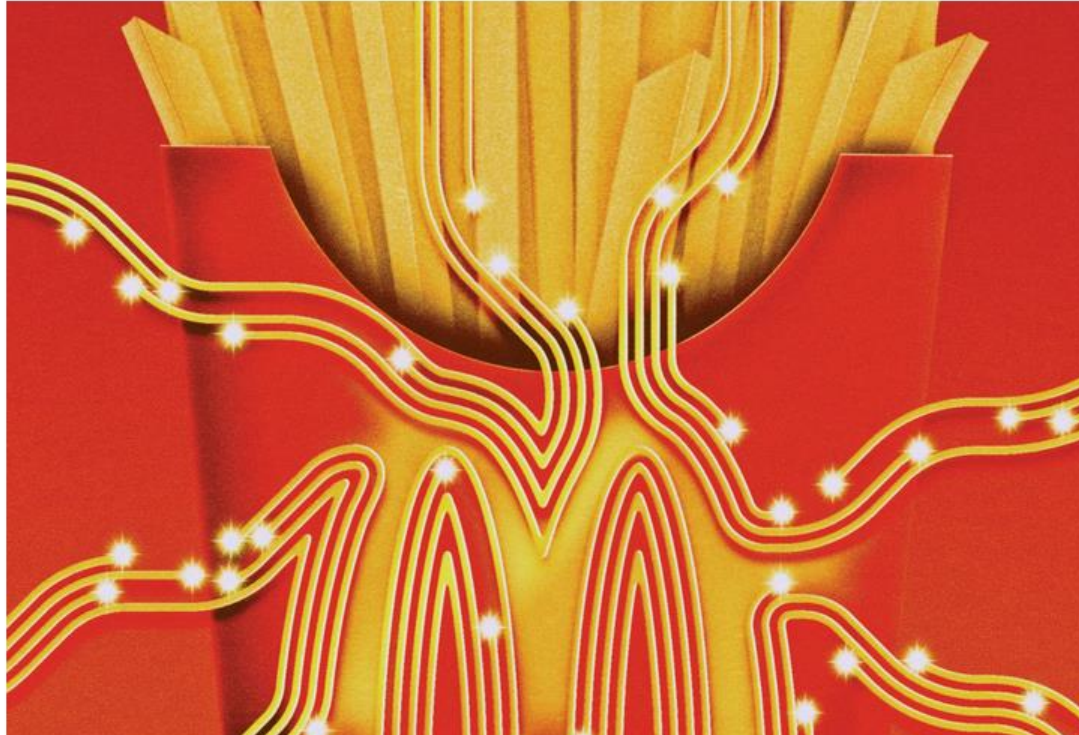


**ARTIFICIAL
INTELLIGEN
CE**

Machine-initiated Recommendations (AI)

Would You Like Fries With That? McDonald's Already Knows the Answer

The fast-food chain is turning to artificial intelligence and machine learning in the hopes of predicting what customers want before they decide.



Critical layers and players in AI-driven economies

Data: The fuel that makes machines learn



At the heart of any AI-driven economy is the availability of data from any entity you can imagine. Sensor data from machines to optimize maintenance intervals; sensor data from cell phones to optimize ad displays; your credit card history, to calculate loans or credit defaults; or your vocal input, to match your intentions to content when you want to add an item to your shopping list with Amazon Alexa. Data from either humans or machines is a critical ingredient of the AI economy.

Infrastructure: The hardware and platform providers



To run all the different tasks from processing human voice input to translating huge amounts of text input, we need to have the right hardware. The strong growth of companies such as Nvidia, Qualcomm, and Samsung over the past few years is a reflection of AI's need for access to powerful computer chips and hardware that make data-hungry algorithms perform on our smartphones, computers, or other devices.

Algorithms: The software and analytics engines



When you think of Google and Amazon, you most likely think of search engines and online shopping. However, Amazon's cloud solution "Amazon Web Services" generated the greatest net income contribution relative to all other services (including online shopping) in the U.S. in 2018 with a 47 % growth rate compared to 2017. And Google released an entire platform a few years ago called Google ML, which provides open access to pre-trained machine learning models.

Advocates: The enterprise and industry solution providers



Even though Amazon, Google, and others directly market their services to corporations, an entire industry lives from using these existing open platforms to develop and sell client-specific services to companies. These include chatbots that are built on Google's natural language processing interface or DialogFlow in Amazon's AWS.

Users: The corporations seeking competitive advantage



The enterprise and industry solutions have to find corporate accounts that are willing to pay for them. Think of insurance companies now using chatbots to handle claims, legal and compliance offices using text processing models to pre-process and analyze text documents, or retail companies with augmented reality mobile apps that provide seemingly real-life shopping experiences.

Regulators: The developing competition between nations



The algorithms running AI need data to get trained, whether for medical services aiming to provide tailored, individualized therapies or companies that want to better target users online to sell their services. However, public policymakers are becoming increasingly alert to the ways our data is used by data-hungry corporations, particularly in Western societies. There have been recent regulatory changes, with the GDPR in the West and nearly opposite selective developments in China, which has invested \$15 billion in a "New Generation Artificial Intelligence Development Plan" aimed at making it the leading AI nation by 2030. These developments illustrate that competition over AI is not happening just between corporations, but between entire nations.

Understanding AI

Theory of Machine: Consumer Lay Beliefs About Algorithmic Data Processing Drive Recommendation Acceptance

Edmond Kozah

Ana Valenzuela



ON TECH

A.I. Is Not What You Think

Artificial intelligence technology is promising, but it's not a magic potion. Oh well.



LaMDA: our breakthrough conversation technology 

INCREASED UPTAKE IN AI

The Economist

Leaders | Foundation models

How smarter AI will change creativity

The promise and perils of a breakthrough in machine intelligence



Employees Are Feeding Sensitive Data to ChatGPT: Artificial Intelligence Trends

Big surprise! Employees are feeding sensitive business data and privacy-protected information to large language models (LLMs) such as ChatGPT.

T E S L R Model S Model 3 Model X Model Y Solar Roof Solar Panels

Artificial Intelligence & Autopilot

We develop and deploy autonomy at scale in vehicles, robots and more. We believe that an approach based on advanced AI for vision and planning, supported by efficient use of inference hardware, is the only way to achieve a general solution for full self-driving and beyond.



Study 1A



Lay Beliefs

To understand consumers' lay beliefs about how AI systems work.

Context: Make-believe scenario about AI recommendations for furniture purchases

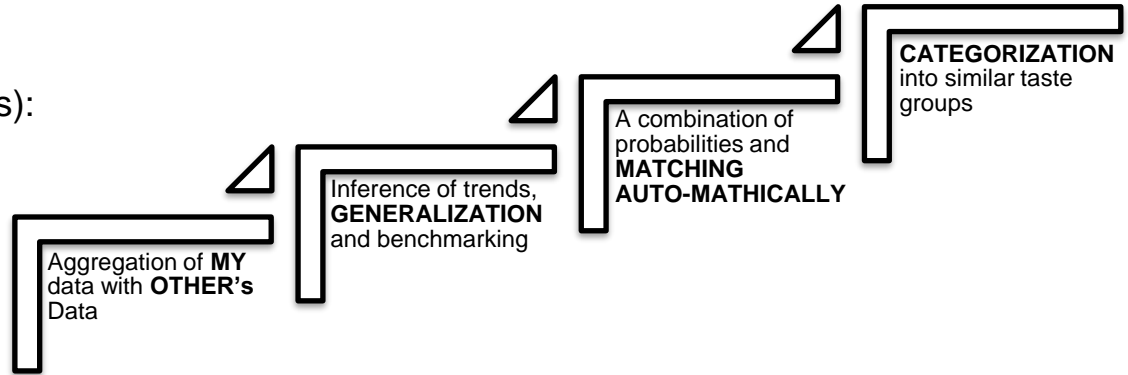
Open-ended questions:

1- What data do you think is processed

2- How data do you think is processed

Sample: 288 Mturkers; 58% females; $M_{age}=19.03$, $SD= .97$

Results (4 Major Themes):



Using S1B as a stepping stone

Compiled a list of algorithmic *data* processes (27 total) of what major search and streaming platforms disclose to users





What is “the algorithm”?

One of the main misconceptions we want to clear up is the existence of “The Algorithm.” Instagram doesn’t have one algorithm that oversees what people do and don’t see on the app. We use a variety of algorithms (classifiers) and processes, each with its own purpose. We want to make the most of your time, and we believe that using technology to personalize your experience is the best way to do that.

Your activity across the Facebook Products:

Some of your activity across the Facebook Products may help us show you ads that we think you might be interested in. A few ways we may show you ads using this information include:

Interests and categories. Some information you give us may help us think you’re interested in something, like cooking or fitness, or that you might be part of a larger group (called a category), like a mobile user. We can use your interests and categories to connect you with businesses who we think you might be interested in.

A few things we use that help us add you to an interest or category:

- Pages on Facebook you’ve liked.
- Information from your Facebook and Instagram profile.
- Ads you’ve clicked on.
- Places you’ve checked in using Facebook.

Lookalike Audiences. Lookalike Audience is a way for advertisers to use Facebook to reach people that may be similar to people that have already shown an interest in their business. We use some of the things you do or information you give us to help create Lookalike Audiences.

For example, an advertiser might tell us they’d like to show ads to people who may be similar to people who are already interested in their business (such as people who’ve liked their Page or visited their website). We match things like the interests or demographics (example: your city) of the people who are already interested in the business to help show ads to other people that we think might be interested in the advertiser’s business or products.

Again, the first step we take is defining a set of posts to rank. To find photos and videos you might be interested in, we look at signals like what posts you’ve liked, saved, and commented on in the past. Let’s say you’ve recently liked a number of photos from San Francisco’s dumpling chef Cathay Bi (@dumplingsubf). We then look at who else likes Cathay’s photos, and then what other accounts those people are interested in. Maybe people who like Cathay are also into the SF dim



The search predictions are based on factors like popularity and freshness and will show:

- The terms you are typing.
- Relevant searches you have done in the past (if you are signed in to your Google Account)
- What other people are searching for, including Trending stories.

From there, you can select a search query that either exactly or closely matches the one you intended to enter.

Not only will it help you perform searches quicker but Autocomplete also shows popular or trending queries that are being searched by other people.

How recommendations work

The Recommendations page looks at your account’s performance history, your campaign settings, and trends across Google to automatically generate recommendations that could improve your performance. Learn more about types of recommendations.

You might not see any recommendations if your ads recently started running, but be sure to check back again soon — Google Ads regularly discovers recommendations for you and also launches new recommendation types.



How Netflix’s Recommendations System Works

Our business is a subscription service that offers personalized recommendations to help you find shows and movies interested to you. To do this we have created a proprietary, complex recommendations system. This article provides a high level description of our recommendations system in plain language.

The basics

Whenever you access the Netflix service, our recommendations system strives to help you find a show or movie to enjoy with minimal effort. We estimate the likelihood that you will watch a particular title in our catalog based on a number of factors including:

- your interactions with our service (such as your viewing history and how you rated other titles),
- other members with similar tastes and preferences on our service, and
- information about the titles, such as their genre, categories, actors, release year, etc.

What to watch

Shows and movies Netflix New Action Drama Sci-Fi Thriller Fantasy Crime Comedy Romance Comedy drama Services

Popular movies and shows on Netflix



How shopping recommendations work on Google Search

Shopping recommendations on Google Search are based on what’s popular or trending across the web.

If you’re signed in to your Google Account and have Personal results turned on, recommendations may also be based on your activity in Google products like:


- Past searches and browsing history: Manage your past searches and browsing history from Google Search and Chrome.
- Videos you’ve watched on YouTube: Manage your YouTube watch history.

You can turn Personal results on or off in Your Data in Search. Learn how to see and control your Web & App Activity.

N= 130 Prolific participants (62% females, $M_{age}=35.65$, $SD=10.62$)

We measured consumer acceptance of that *data* being processed.
Acceptability of each item on 7-pt scale (Acceptable/Unacceptable)

Study 1B



AI Processes
Acceptability

- 1 Your viewing history of other movie titles
- 2 Other users' viewing history of other movie titles
- 3 Your search of movie titles on YouTube and /or Netflix's websites
- 4 Your rating of other movie titles
- 5 Other users' (similar to you) ratings of other movie titles
- 6 Your interactions with other movie titles (likes, comments, shares)
- 7 Other users' (similar to you) interactions with other movie titles (likes, comments, shares)
- 8 Similar movie titles that you have watched
- 9 Other network members with similar tastes and preferences
- 10 Screen shots taken when the video/movie was paused
- 11 Title pausing, rewinding, and/or fast-forwarding
- 12 Whether the entire TV series or movie was completed
- 13 Demographics such as age which you provided when setting up your account
- 14 Demographics such as gender which you provided when setting up your account
- 15 Demographics such as location which you provided when setting up your account
- 16 What is trending and popular
- 17 A taste group into which you have been categorized
- 18 Demographic group into which you have been categorized
- 19 Other users with the same age and/or gender and/or location
- 20 Authoritative content such as news and information
- 21 Time of day
- 22 Day of the week
- 23 The duration spent watching content
- 24 The devices on which you are watching
- 25 Multicriteria and multi-process algorithms (neural network – deep machine learning – used to analyze visual imagery)
- 26 Browsing history on other websites (using cookies)
- 27 Your past search history on popular search engines

Factor Loadings

Items	1	2	3	4
Processing demographics input, location	0.852			
Processing demographics input, gender	0.847			
Processing demographics input, age	0.832			
Processing demographics of others	0.765			
Processing by categorization into similar demographic groups	0.743			
Processing input of day of week		0.85		
Processing input of time of day		0.845		
Processing device type		0.744		
Processing dwell time, duration		0.741		
Processing if content consumption is completed		0.683		
Processing your content ratings			0.848	
Processing your content viewing history			0.84	
Processing your content search			0.792	
Processing similar content you have previously consumed			0.769	
Processing your content interactions			0.526	
Processing other users' content interactions				0.869
Processing other users' content ratings				0.851
Processing others' taste in content				0.777
Processing other users' content viewing history				0.766

Principal axis factor analysis (varimax rotation) to identify the key dimensions.

8 items did not show a clear pattern OR load well.

RESULTS: 4 components of 19 items (KMO = .89, Bartlett's test of sphericity was significant, $p < .001$), 76.31% total variance explained.

data

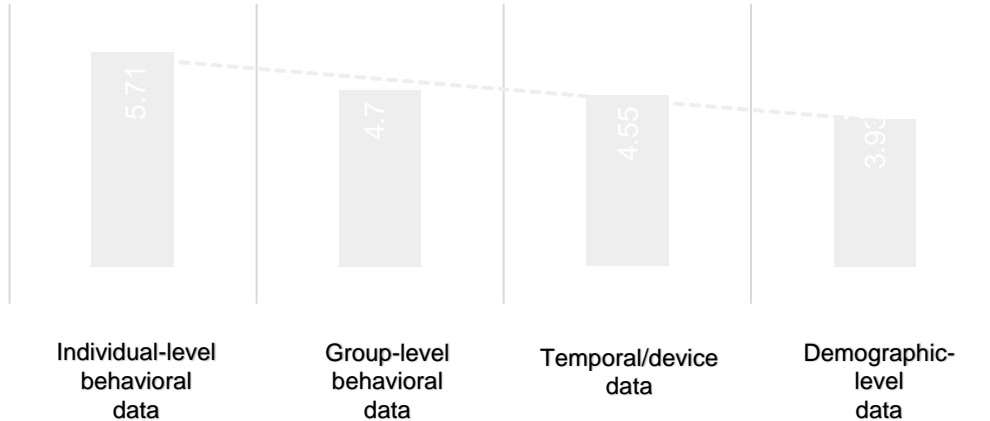
Factor 1 → Individual-level behavioral

Factor 2 → Group-level behavioral data

Factor 3 → Demographic-level data

Factor 4 → Temporal/device-level data

ACCEPTABILITY OF ALGORITHMIC DATA PROCESSING



Dropped **temporal/device** data component → **more situational** and **external** in nature

Other three components are **more dispositional** and **internal** in nature.

Re-ran the factor analysis → KMO = .891, Bartlett's test of sphericity was significant, $p < .001$ → 75.45% total variance explained.

The 3 re-derived components were the same.

What Intelligence?

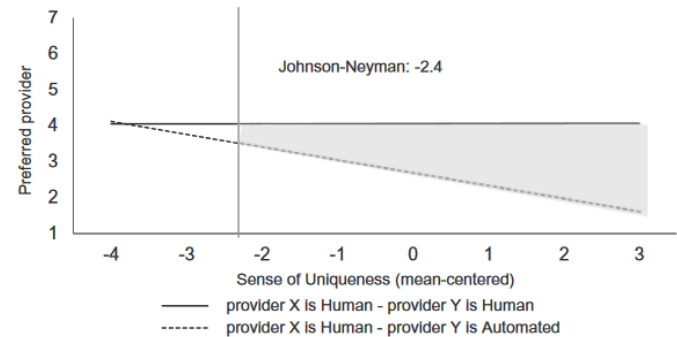
AI and Consumers

- **Uniqueness Neglect**
 - Differentiation between
 - AI for Analysis
 - AI for Recommendation

- **Algorithm Aversion**

FIGURE 4

SENSE OF UNIQUENESS MODERATES PROVIDER PREFERENCE

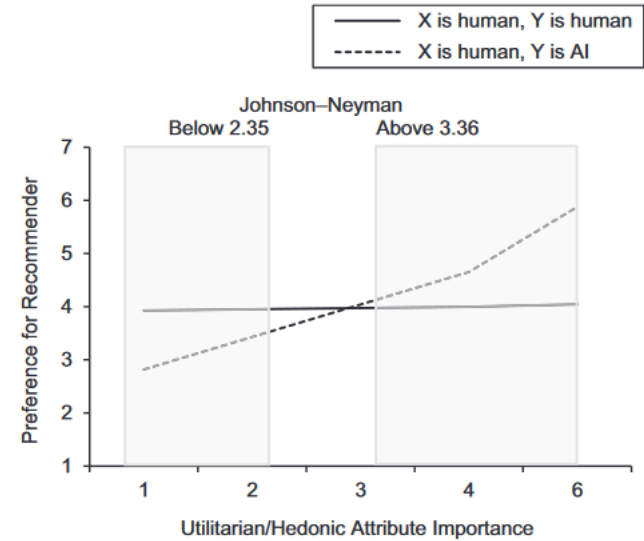


Longoni, Bonezzi & Morewedge (2018), Resistance to Medical Artificial Intelligence, *Journal of Consumer Research*, 46, 629–650

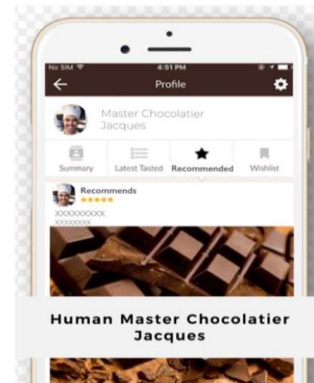
AI and Consumers: Word of Machine

- **Lay belief** that AI recommenders are more competent in the **utilitarian** realm.

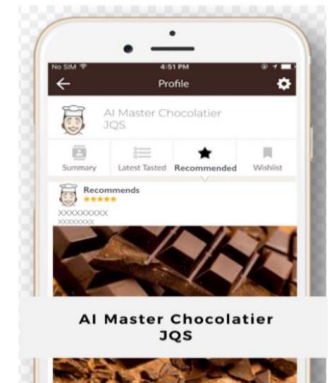
Product: Winter Coat



Human Recommender Condition



AI Recommender Condition

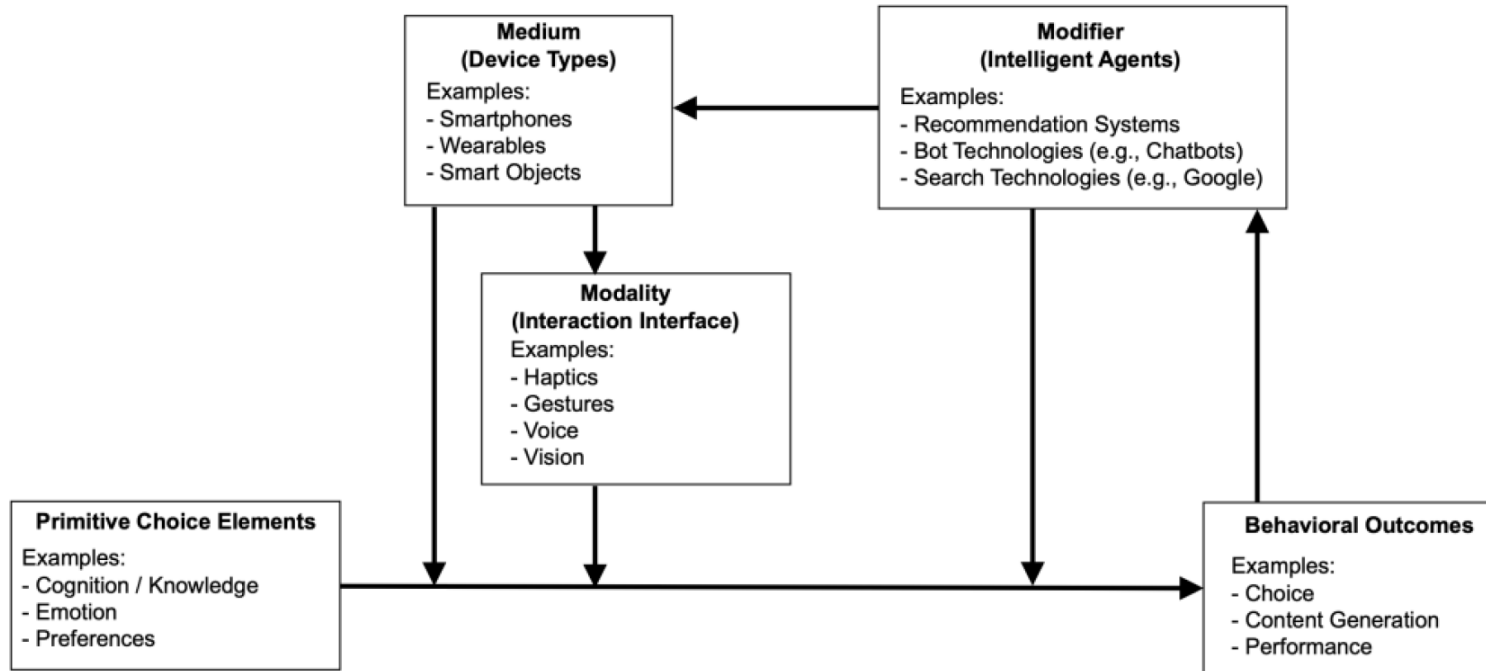


Longoni & Cian L (2022) "Artificial Intelligence in Utilitarian vs. Hedonic Contexts: The "Word-of-Machine" Effect," *Journal of Marketing*, 86,91-108

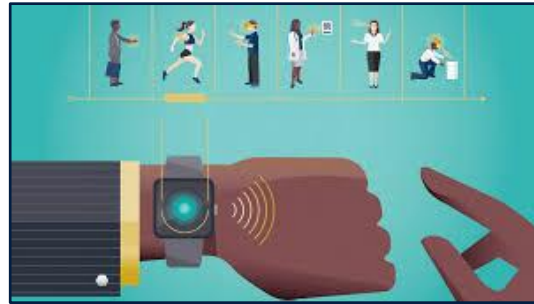
Technology-Augmented Choice

Augmented Choice Framework

Melumad, S., Hadi, R., Hildebrand, C. *et al.* (2020) Technology-Augmented Choice: How Digital Innovations Are Transforming Consumer Decision Processes. *Cust. Need. and Solut.* 7, 90–101



How does it translate
into behaviour in the
digital world?



The image features a blue-tinted background with a group of people, possibly a crowd or a team, looking towards the right. The text "THANK YOU" is prominently displayed in the center in a bold, white, sans-serif font. The overall aesthetic is clean and professional, with a focus on gratitude.

THANK YOU

Q & A

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