Introduction to neuromarketing

Introduction and case studies

Taeyang Yang

191113

BCILAB, UNIST, Ulsan, Republic of Korea

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Introduction to neuromarketing

Neuromarketing?

NEUROMARKETING

Neuromarketing?

NEUROMARKETING

Neuromarketing?

NEUROMARKETING

Neuroscience: too broad term

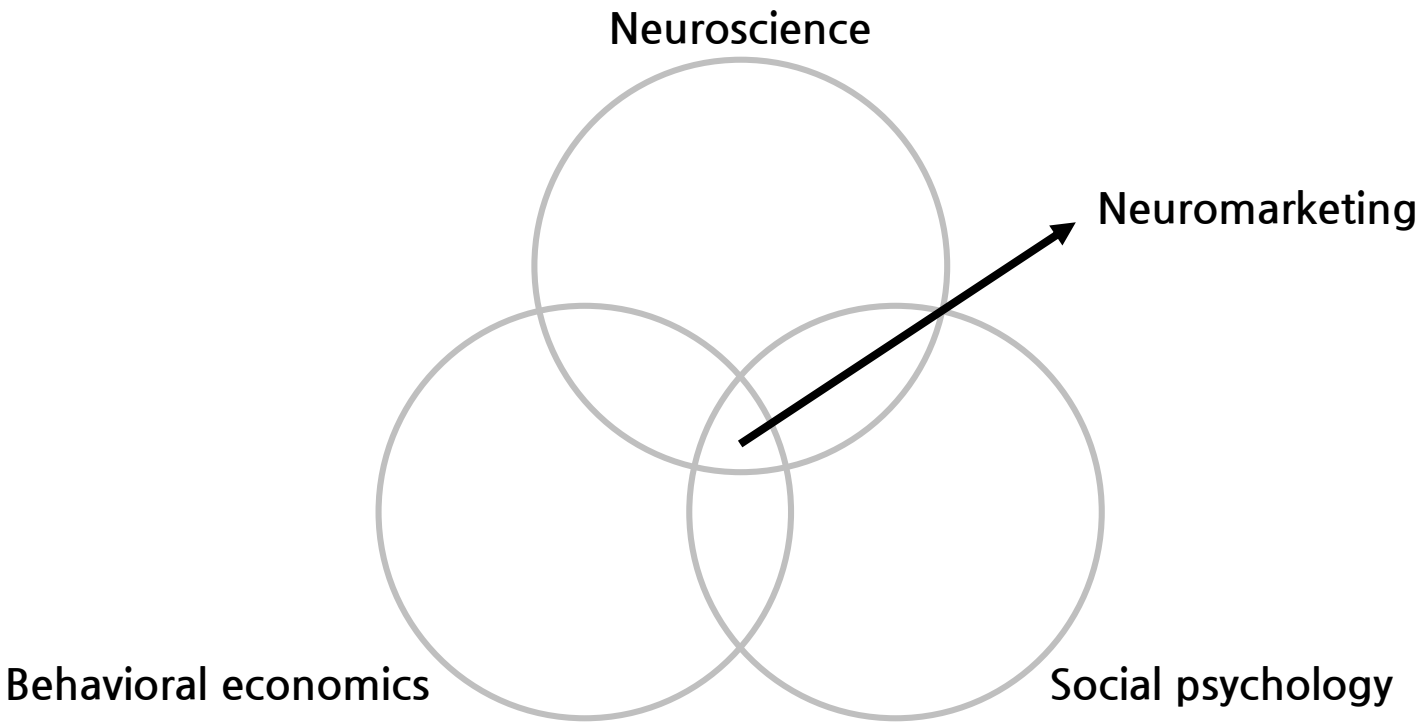
Neurology: too disorder focused

Cognitive neuroscience

Affective neuroscience

Definition of neuromarketing

- Background knowledges



First neuromarketing

Gerry Zaltman (1999) from Havard university

First marketer to use fMRI

Ale Schmidt (2002) from Erasmus university

First to name neuromarketing

Neuromarketing VS Consumer neuroscience

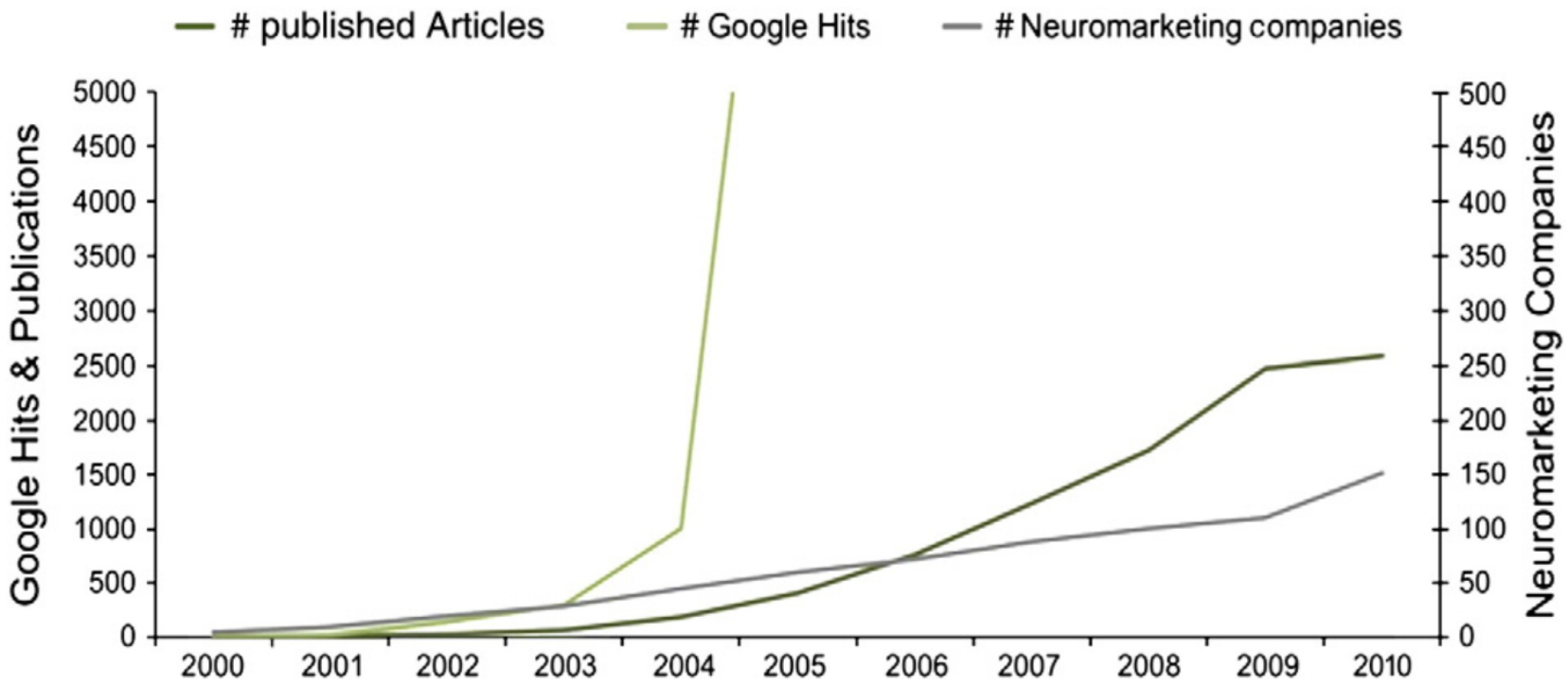
Neuromarketing

Commercial application of neuroscience technologies and insights to drive business

Consumer neuroscience

Academic use of neuroscience to better understand marketing effects on consumer behavior

Sky-rocketed neuromarketing



Plassmann, H., Ramsøy, T. Z., & Milosavljevic, M. (2012). Branding the brain: A critical review and outlook. *Journal of consumer psychology*, *22*(1), 18-36.

Why was neuromarketing sky-rocketed ?

Rational consumer model

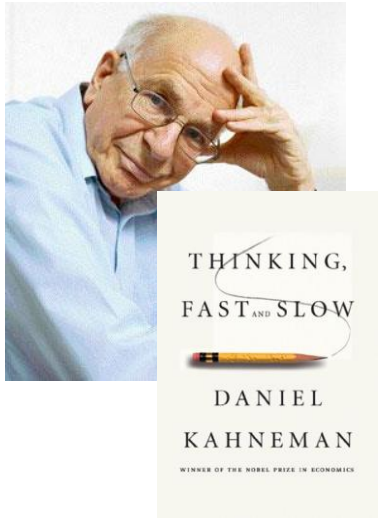
- Mr. Spock **thinks in terms of information.**
- Mr. Spock **can retrieve this information, completely and accurately, at any point after he has encounter it.**
- Mr. Spock **rationally determines his/her preference.**
- Mr. Spock **uses cost-benefit calculation to make a purchase decision at a point of purchase**
- Mr. Spock's **preference can be changed if he is presented with new information**

Daniel Kahneman's System 1 vs. System 2

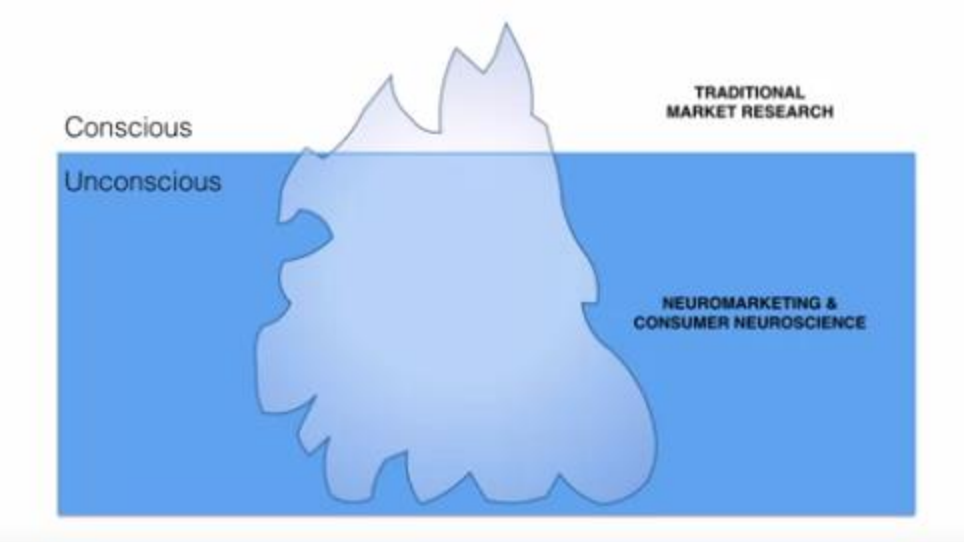
- Daniel Kahneman's posit regarding thinking

Figure 1: A Comparison of System 1 and System 2 Thinking

System 1 "Fast"	System 2 "Slow"
DEFINING CHARACTERISTICS Unconscious Effortless Automatic	DEFINING CHARACTERISTICS Deliberate and conscious Effortful Controlled mental process
WITHOUT self-awareness or control	WITH self-awareness or control
"What you see is all there is."	Logical and skeptical
ROLE Assesses the situation Delivers updates	ROLE Seeks new/missing information Makes decisions

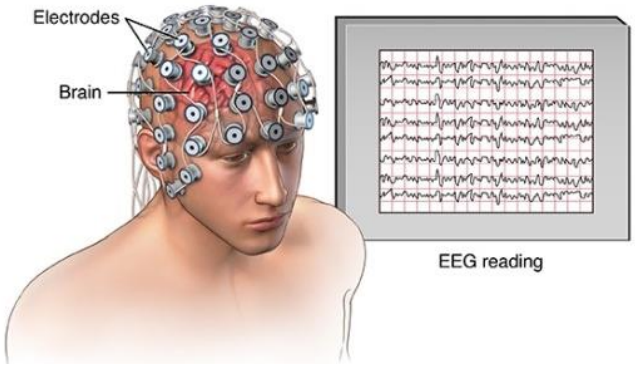


WHY neuromarketing?



Methods

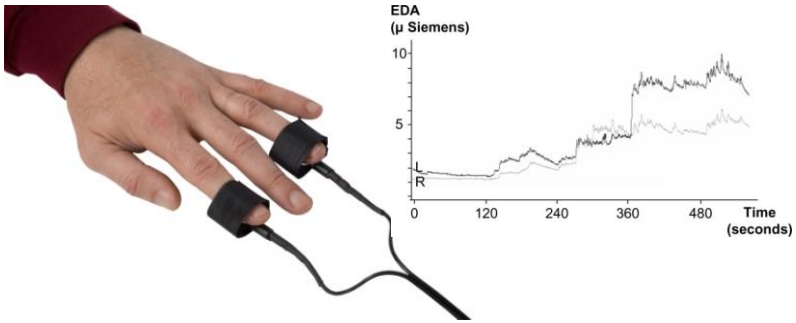
Electroencephalography (EEG)



Functional magnetic resonance imaging (fMRI)

Eye tracking

Electrodermal activity



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Examples of neuromarketing studies

- McClure *et al.*, 2004
- Plassmann *et al.*, 2008

McClure *et al.*, 2004

Neuron, Vol. 44, 379–387, October 14, 2004, Copyright ©2004 by Cell Press

Neural Correlates of Behavioral Preference for Culturally Familiar Drinks

Samuel M. McClure,[1,2] Jian Li,[1] Damon Tomlin, Kim S. Cypert, Latané M. Montague, and P. Read Montague*
Department of Neuroscience
Menninger Department of Psychiatry and Behavioral Sciences
Baylor College of Medicine
1 Baylor Plaza
Houston, Texas 77030

- How cultural messages, such as branding, affect our perceptions and alter our behavior.

McClure, S. M., Li, J., Tomlin, D., Cypert, K. S., Montague, L. M., & Montague, P. R. (2004). Neural correlates of behavioral preference for culturally familiar drinks. *Neuron*, *44*(2), 379-387.

McClure *et al.*, 2004

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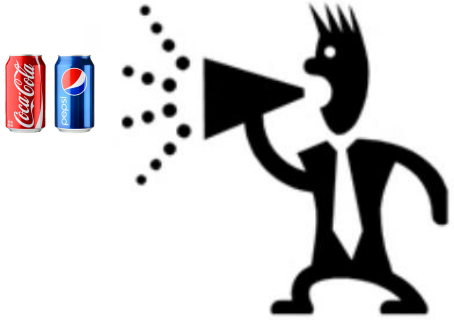


Stated Preference

Anonymous Taste Test

Brand-Cued Taste Test

McClure, S. M., Li, J., Tomlin, D., Cypert, K. S., Montague, L. M., & Montague, P. R. (2004). Neural correlates of behavioral preference for culturally familiar drinks. *Neuron*, *44*(2), 379-387.

McClure *et al.*, 2004

Stated Preference

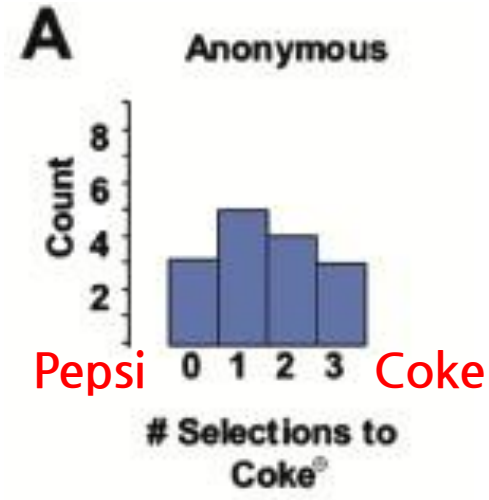
n=7 n=6

No difference of preference between brands

McClure, S. M., Li, J., Tomlin, D., Cypert, K. S., Montague, L. M., & Montague, P. R. (2004). Neural correlates of behavioral preference for culturally familiar drinks. *Neuron*, *44*(2), 379-387.

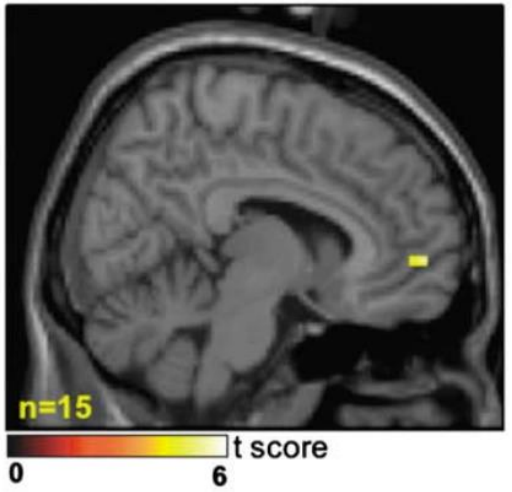
McClure *et al.*, 2004

Two-forced choice task



Pepsi Coke

Ventromedial prefrontal cortex (vmPFC)



No difference of preference between brands

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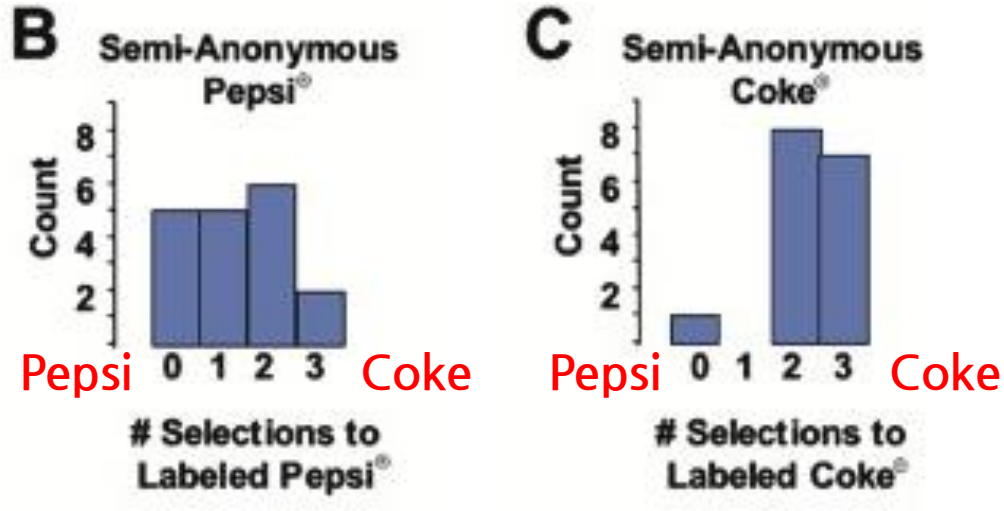
McClure *et al.*, 2004

Brand-Cued Taste Test

Two-forced choice task



Pepsi: almost equal
Coke: most of participants chose Coke

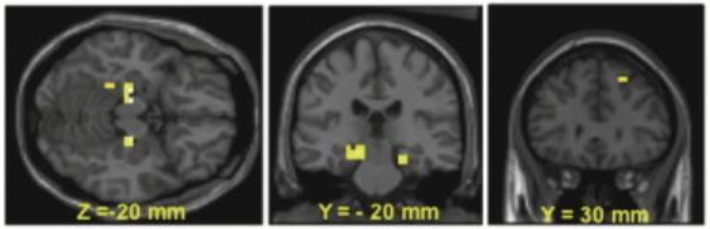
McClure, S. M., Li, J., Tomlin, D., Cypert, K. S., Montague, L. M., & Montague, P. R. (2004). Neural correlates of behavioral preference for culturally familiar drinks. *Neuron*, *44*(2), 379-387.

McClure *et al.*, 2004

Brand-Cued Taste Test

B

Coke® Delivery (Brand-cued - Light-cued)

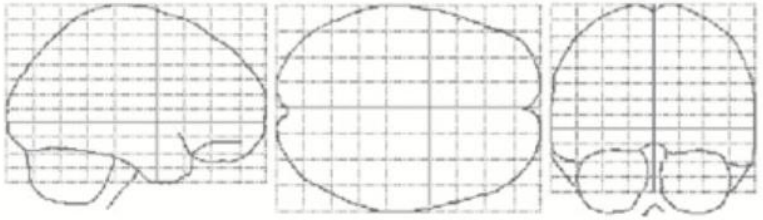


Bilateral Hippocampus DLPFC

Memory

D

Pepsi® Delivery (Brand-cued - Light-cued)



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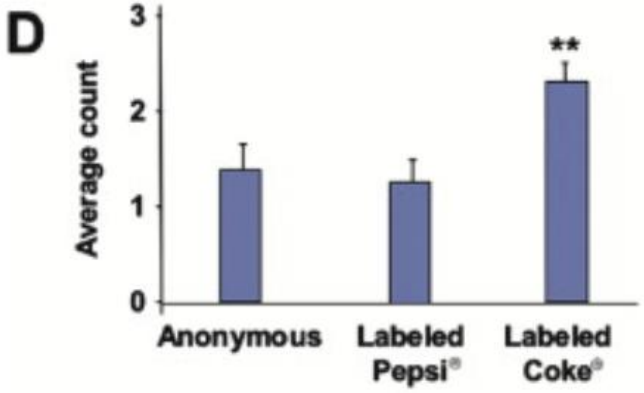
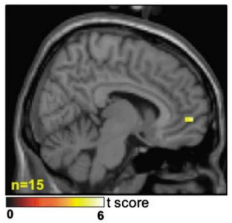
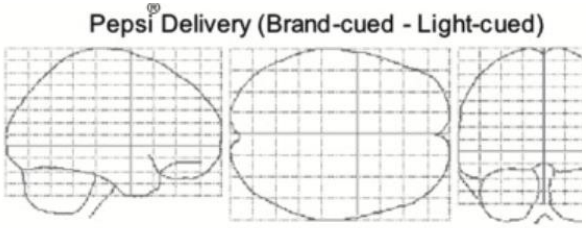
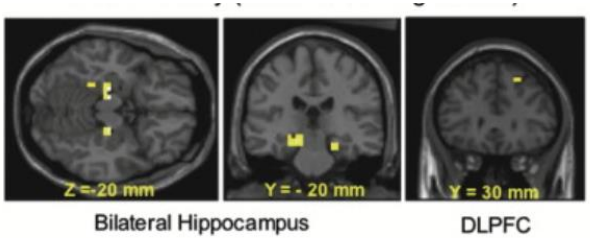




VMPFC
~sensory information



X



Hippocampus, DLPFC
~ past cultural information (memory)

How cultural messages, such as branding, **affect our perceptions and alter our behavior.**

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Plassmann *et al.*, 2008

Marketing actions can modulate neural representations of experienced pleasantness

Hilke Plassmann*, John O'Doherty*, Baba Shiv†, and Antonio Rangel*‡

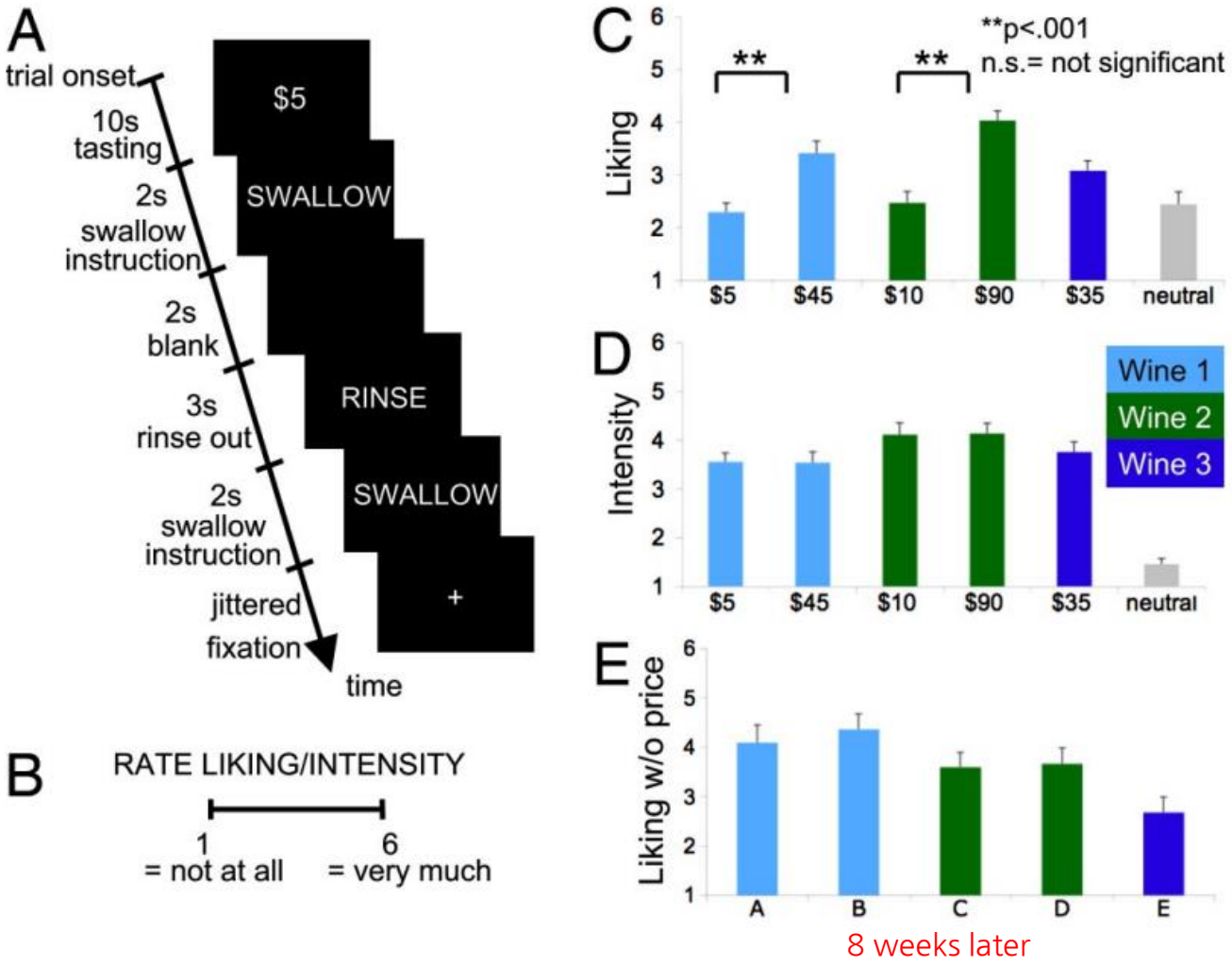
*Division of the Humanities and Social Sciences, California Institute of Technology, MC 228-77, Pasadena, CA 91125; and †Stanford Graduate School of Business, Stanford University, 518 Memorial Way, Littlefield L383, Stanford, CA94305

Edited by Leslie G. Ungerleider, National Institutes of Health, Bethesda, MD, and approved December 3, 2007 (received for review July 24, 2007)

- **Marketing actions**, such as changes in the price of a product**, can affect neural representations of experienced pleasantness.**

Plassmann, H., O'Doherty, J., Shiv, B., & Rangel, A. (2008). Marketing actions can modulate neural representations of experienced pleasantness. *Proceedings of the National Academy of Sciences*, *105*(3), 1050-1054.

Plassmann *et al.*, 2008



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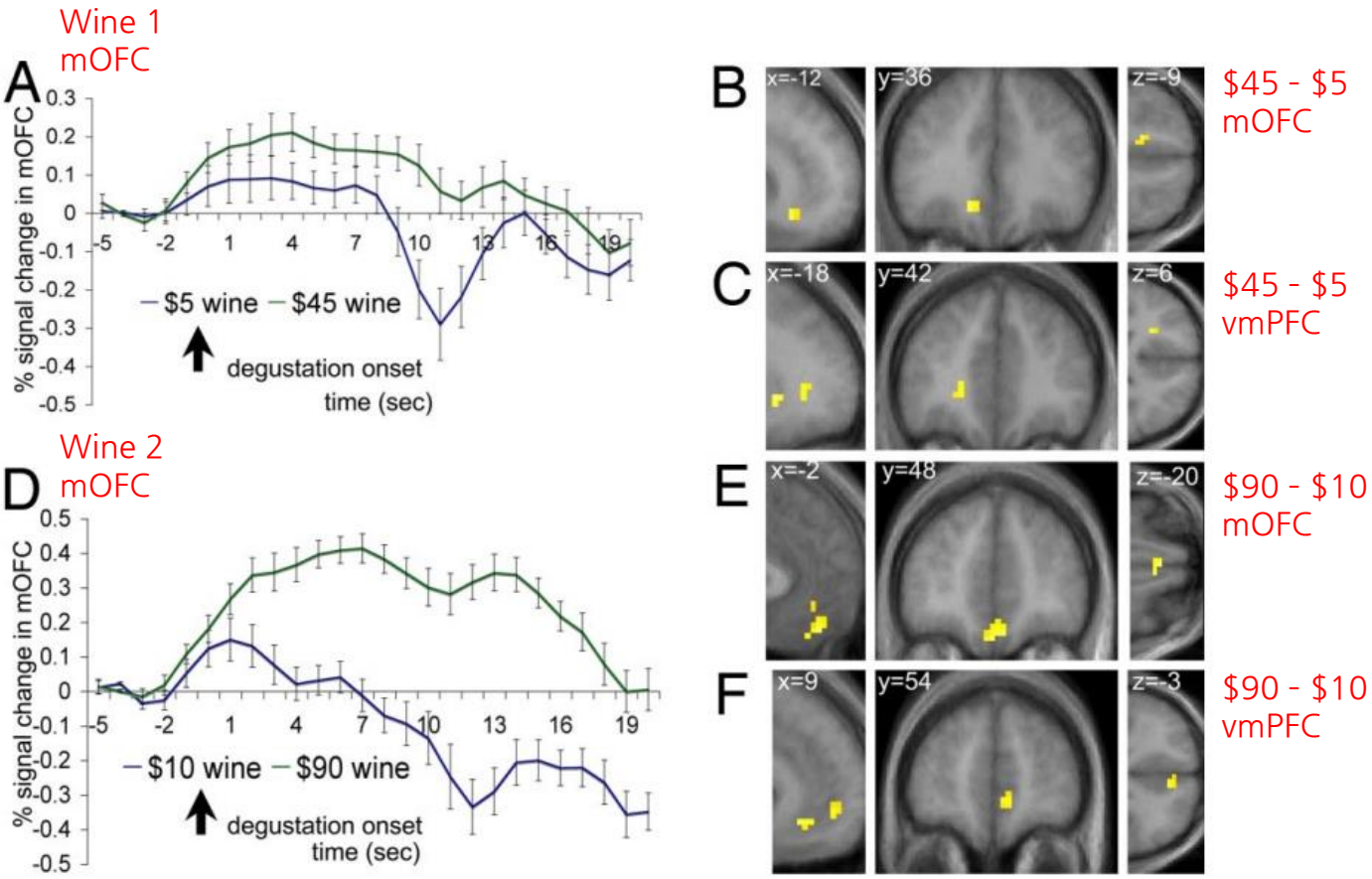
- Contrast



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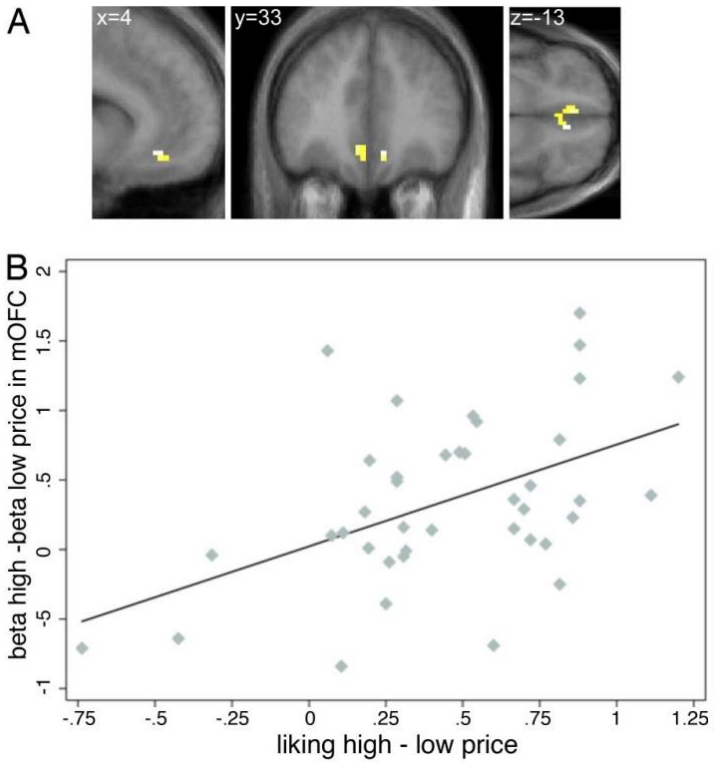
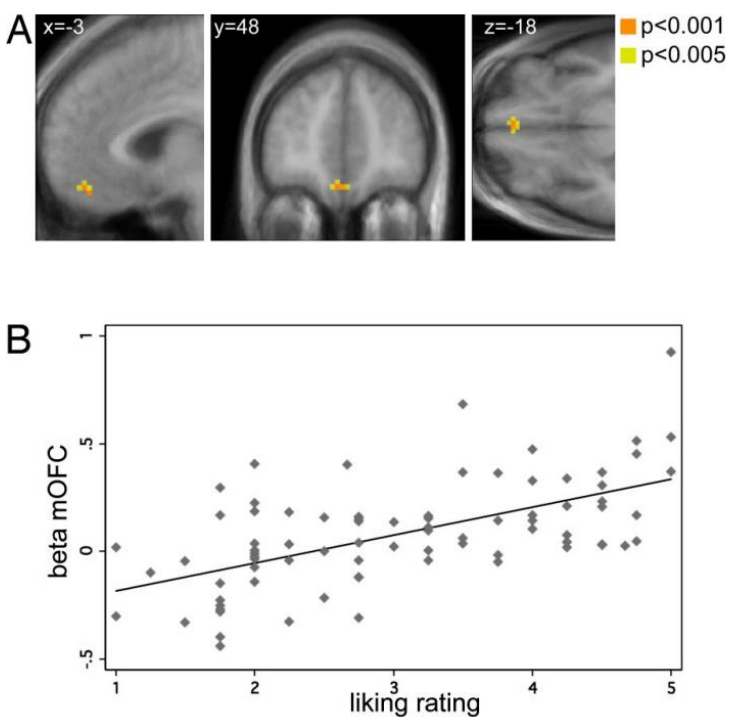
- GLM

mOFC / rACC



mOFC / midbrain



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THANK YOU

For more information,
Email to **tyyang.sol@gmail.com**