Insights from Unstructured (Big) Data for Marketing Value

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Unstructured Data

"Unstructured" may be a misnomer

Origins go back to the days of dominance of relational databases

There is probably no data that has no structure at all

Included data under my use of the phrase

Unstructured

- Textual
- Pictorial
- Audio
- Video

Content Lab at UWM

A group of faculty and Doctoral students working on developing marketing insights from Unstructured Data

Currently Includes

- **UWM**
- **University of Chicago**
- **University of North Carolina – Charlotte**

Business Value of Unstructured Data

Guiding Principles for Selecting a Research Project

1. **Innovativeness – is it addressing a new question?**
    a)   Little is known about the question

2. **Business value – can it help improve marketing ROI?**
    a.   The question is important for business

3. **Research potential – can it advance multi-disciplinary research in data science?**
    a)   Anthropology
    b)   Visual Arts
    c)   Linguistics
    d)   Psychology
    e)   Computer Science
    f)   …

4. **Can we reliably demonstrate a generalizable causal relationship between the phenomenon and hypothesized drivers?**

Projects with Textual Data

ELSEVIER

Full Length Article

Composing tweets to increase retweets

Nima Y. Jalali [a], Purushottam Papatla [b,*]

[a] Department of Marketing, Belk College of Business, University of North Carolina-Charlotte, 9201 University City Blvd., Charlotte, NC 28223, United States of America
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Marketing Issue

Tweets can communicate *and* broadcast brand messaging

Broadcast happens only if tweets capture attention and stimulate retweets

People may spend just a few seconds reading a tweet

How do you write a tweet to capture attention within a second or two?

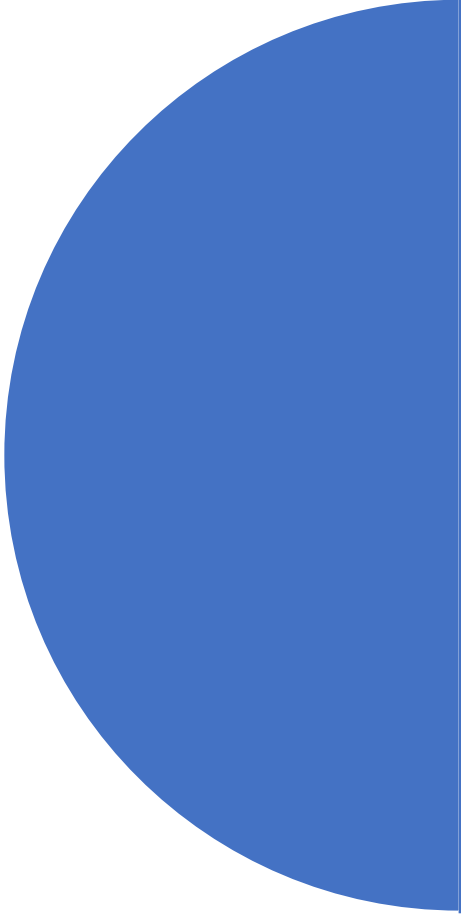- **Write a tweet so that people recognize it has a topic of interest within a few seconds**

Relevant Discipline

Psycholinguistics

Reading a sentence happens in saccade – fixation pairs
- 20 – 35 milliseconds per saccade
- 150 and 500 milliseconds per fixation

We all want to minimize cognitive effort
- Minimize number of saccades and fixations to make sense of text being read

Place topic-related words
- Early in the tweet
- Frequently in the tweet

Walking through key parts of the research

Conclusions

Place topic-related words

- **Early in the tweet**
- **Frequently in the tweet**

Projects with Pictorial Data
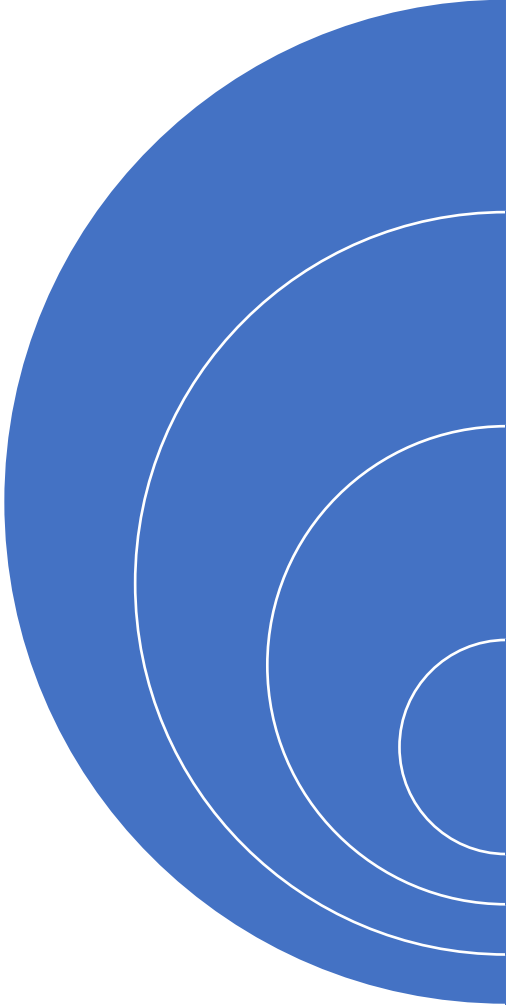
CrossMark

The palette that stands out: Color compositions of online curated visual UGC that attracts higher consumer interaction

Nima Y. Jalali[1] · Purushottam Papatla[2]

Abstract Photos posted by consumers on social media, like Instagram, often include

Marketing Issue

Product display pictures are the online retailers' equivalent of storefront or in-store displays of brick-and-mortar retailers

Online, they also serve as ads

They should take the visitor through the advertising funnel

- **Attention → Interest → Desire → Action**

What type of pictures start the visitor on this journey?

Relevant Discipline

Color Theory

Effects of colors

- Blue tones are more relaxing than red tones
- But blue does not increase likeability
- Higher chroma increases excitement
- Increased brightness increases excitement *and* liking

Again, we all want to minimize cognitive effort

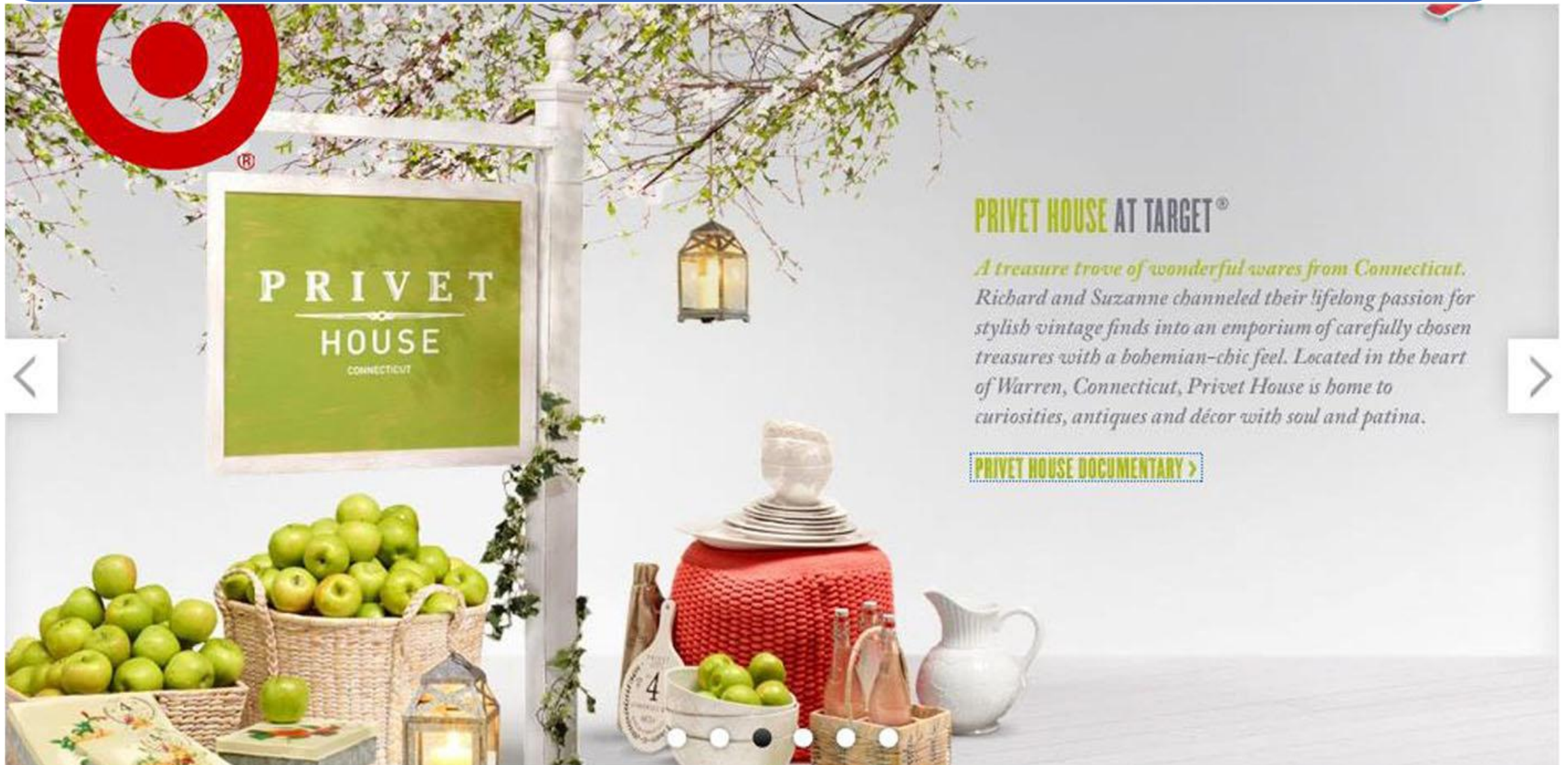- We react to the visual stimuli and arrive at decisions on next steps unconsciously

Walking through key parts of the research

Conclusions

Reduce red and cyan

Increase green

Increase chromas of red and blue

Do this

PRIVET HOUSE AT TARGET®

A treasure trove of wonderful wares from Connecticut. Richard and Suzanne channeled their lifelong passion for stylish vintage finds into an emporium of carefully chosen treasures with a bohemian-chic feel. Located in the heart of Warren, Connecticut, Privet House is home to curiosities, antiques and décor with soul and patina.

PRIVET HOUSE DOCUMENTARY >

But not this..

Field Implementation

Table 6 Field implementation results

Category	Increase in Conversion Ratio	Increase in Average Order Value	Increase in Revenue	Increase in click through rate in Facebook retargeting ads
Clothing	60%		$700,000	
Jewelry, accessories and gifts - Client 1	42%	23%		
Jewelry, accessories and gifts - Client 2	9%	7%	$155,000	
Mass Merchandise	73%			
Discount Retail	110%			
Bicycles and accessories	80%	$50		
Furniture and Home Goods				43%

Additional Projects

Should product display pictures include fully visible faces or no?

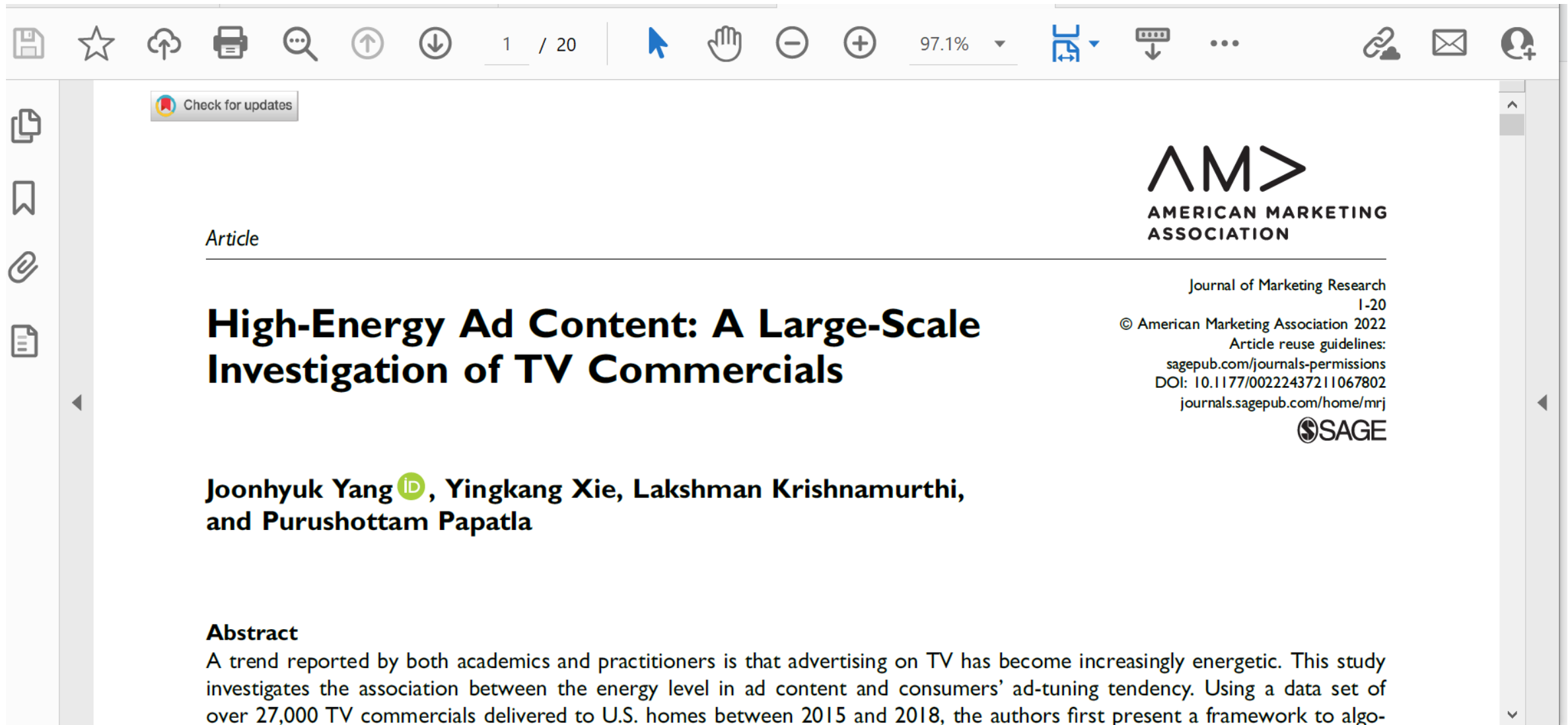- Relevant Discipline
  - Anthropology
- Dueling Attention Theory

What should be the product's role in product display pictures

- How large should the product be relative to context?
- How salient should it be?
- Where should it be located in the picture?

What should be the relative roles of product and context in product display pictures?

Projects with Audio Data

Consumer Engagement with TV Advertising

Check for updates

Article

High-Energy Ad Content: A Large-Scale Investigation of TV Commercials

Joonhyuk Yang (iD), Yingkang Xie, Lakshman Krishnamurthi, and Purushottam Papatla

Abstract

A trend reported by both academics and practitioners is that advertising on TV has become increasingly energetic. This study investigates the association between the energy level in ad content and consumers' ad-tuning tendency. Using a data set of over 27,000 TV commercials delivered to U.S. homes between 2015 and 2018, the authors first present a framework to algo-

Marketing Issue

Between $65 - $70 billion was spent on TV advertising in 2022

Ads should take audiences at least through the first two stages of the advertising funnel

- Attention → Interest → Desire → Action

Advertisers have focused on sound to grab attention

- Come the CALM (Commercial Advertisement Loudness Mitigation) Act - 2010

Can we do something with the sound to increase attention without breaking the law ?

Relevant Discipline

Sound theory		
Audio energy	• dynamic range • Entropy • loudness, • onset rate • timbre	
People prefer different levels of audio energy at different times of the day		
Syncing the audio energy in an ad with what people prefer at the time it's aired should increase attention		

Walking through key parts of the research

Conclusion

Higher audio energy increases ad tuning and reduces ad avoidance

Projects in Progress

<u>Several projects</u> in all four areas of content are currently at various stages.

Q & A

Thank you!