

Expression of Emotions in Ads over Time

Stefan Kluge

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Marketing Science
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Motivation

Emotions make marketing campaigns go viral

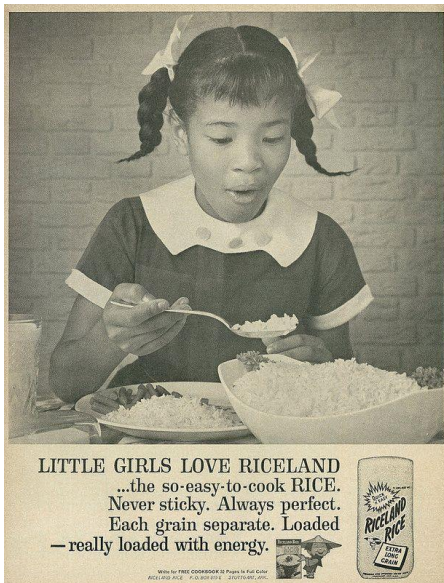
- Social media has led brands to publish **far more content** and click-based metrics are driving advertisers to rely more on persuasive (emotional) advertising to make content go viral.
- Academic research (Berger, 2011; Berger & Milkman, 2012) shows that **virality** of content is **driven by physiological arousal** (regardless of positive or negative emotionality) which makes advertising more effective.
- Research has shown that campaigns with purely emotional content perform about twice as well as campaigns with rational content.
- Most of what we think of as good advertising is advertising that moves our emotions. Emotionally charged creatives win 80% of advertising awards.

Emotion is what fuels virality!

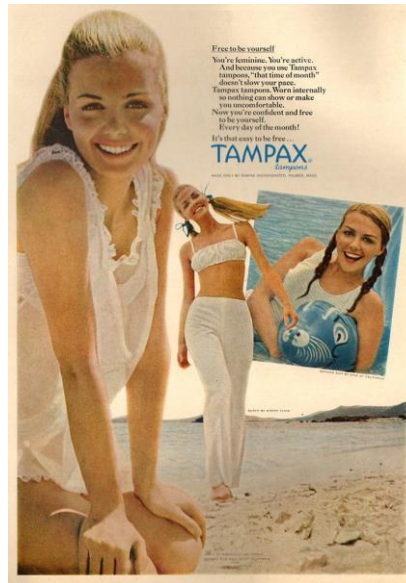
Motivation

Emotions in ads increased long before social media

Advertisements have long been designed to extend beyond information provision and portray various emotions.



1964



1969



1981

Research Questions

1) How does the **share** of persuasive advertising change over time?

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- 2) Is the **degree of emotionality** in advertising increasing over time?

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- 2) Is the degree of emotionality in advertising increasing over time?
- 3) Is the emotionality in advertising driven more by sentiment in text or images?
- 4) How does the emotionality of advertising **change relative to** the emotionality characterizing **editorial content** over time?

Data and Samples

- **Print ads**
 - 1900 – 2000
 - Nearly 350.000 total ads of more than 25.000 different brands
 - 5 industry subsets: Automotive, airlines, banks, insurances, watches
- **Editorial content**
 - 1900 – 2000
 - Over 460.000 pages



The
Economist

Data Preprocessing



Why hop to Doha when you can fly non-stop?



Only Qatar Airways has a daily non-stop service from Heathrow to Doha.
Book First or Business Class and you'll enjoy all the amenities of the Qatari Club at Heathrow.
A spacious lounge, newspapers, magazines, shoes, refreshments and a fully equipped office area.
And once onboard one of our new Airbus A350-900s, you'll feel equally pampered. Large seats, generous leg room, state of the art inflight entertainment, a well stocked bar and a superb international menu.
For reservations, call us on 01773 370 8600.
You'll be hopping, that's for sure!

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Pressure Politics

EuropeanVoice
THE EUROPEAN PUBLIC AFFAIRS DIRECTORY

A CONFERENCE TO EXAMINE THE BURGEONING POLITICAL SIGNIFICANCE AND INFLUENCE OF PRESSURE GROUPS AND HOW THIS AFFECTS ALL EUROPEAN COMPANIES

KEYNOTE SPEAKER: COMMISSIONER EMMA BONINO

Business fears the power of pressure groups, but it complacently allows them to handle them. Modern pressure groups are a major political force in the EU. Are they becoming Europe's new political parties? How do pressure groups seek to use the media and the Internet? And, what is at risk for companies? This one-day conference will give you a unique insight into the threats and opportunities arising from pressure group activities.

Venue: Radisson SAS Hotel Bristol Date: 4 June 1988
Fees: £65 (incl. VAT, lunch and drinks)

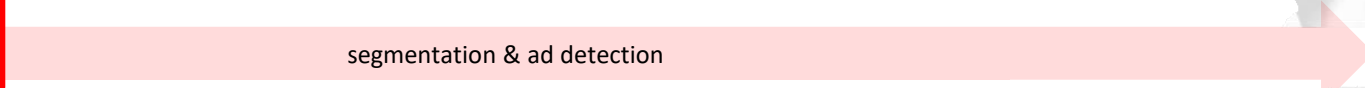
For registration & brochure contact: Laurence Van Bellingen
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Data Preprocessing



The top advertisement is for Qatar Airways, featuring a man in a crouching pose and the headline "Why hop to Doha when you can fly non-stop?". The bottom advertisement is for a conference titled "Pressure Politics" with a keynote speaker, Commissioner Emma Bonino.



Data Preprocessing

1. create training dataset



Data Preprocessing



1. create training dataset

2. train a Faster R-CNN (ResNet-101)

Data Preprocessing



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3. parameter optimization & test

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Data Preprocessing



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2. train a Faster R-CNN (ResNet-101)

4. process all pages

Data Preprocessing



1. create training dataset

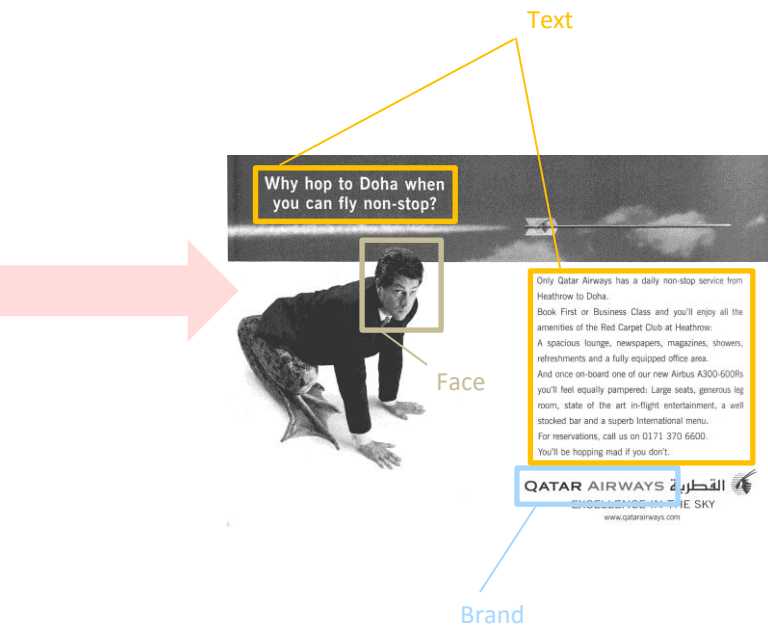
3. parameter optimization & test

5. check results and handle exceptions

2. train a Faster R-CNN (ResNet-101)

4. process all pages

Data Processing



Data Processing



Computer Vision

- OCR
- Color analysis
- Feature complexity
- Object detection
- Visual similarity of ads
- Face detection

Data Processing



Natural Language Processing

- Brand detection
- Sentiment analysis
- Text categorization
- Text readability

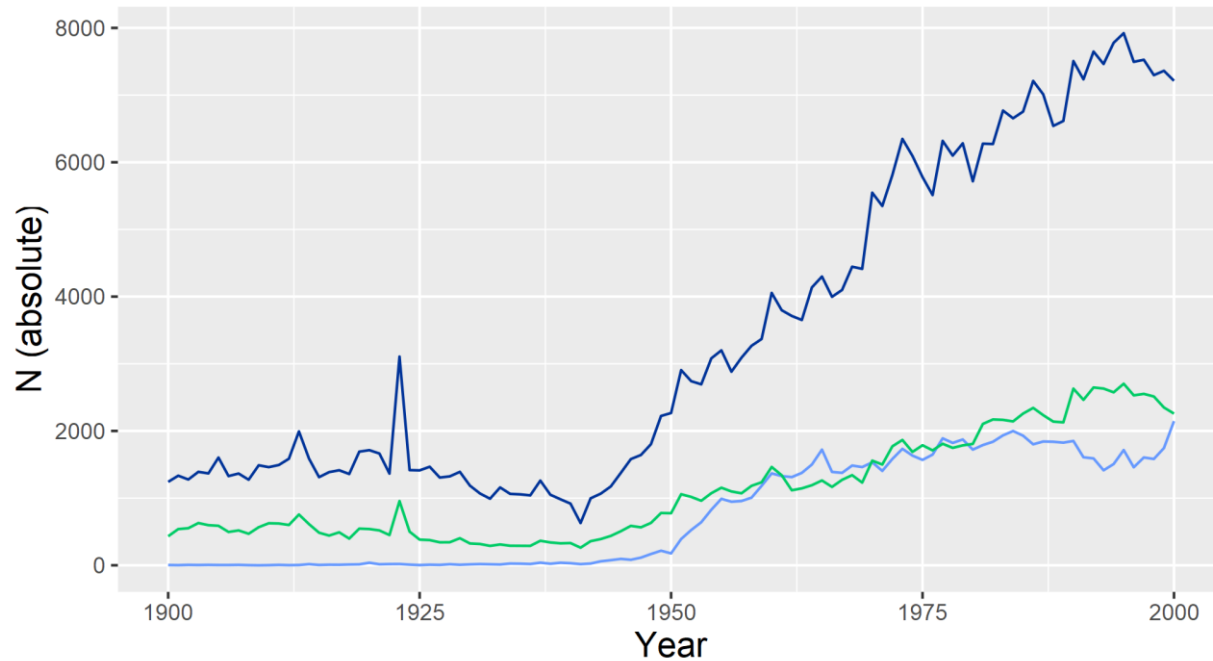
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Preliminary Findings

Persuasive advertising is increasing over time

RQ1: Types of Advertising in The Economist

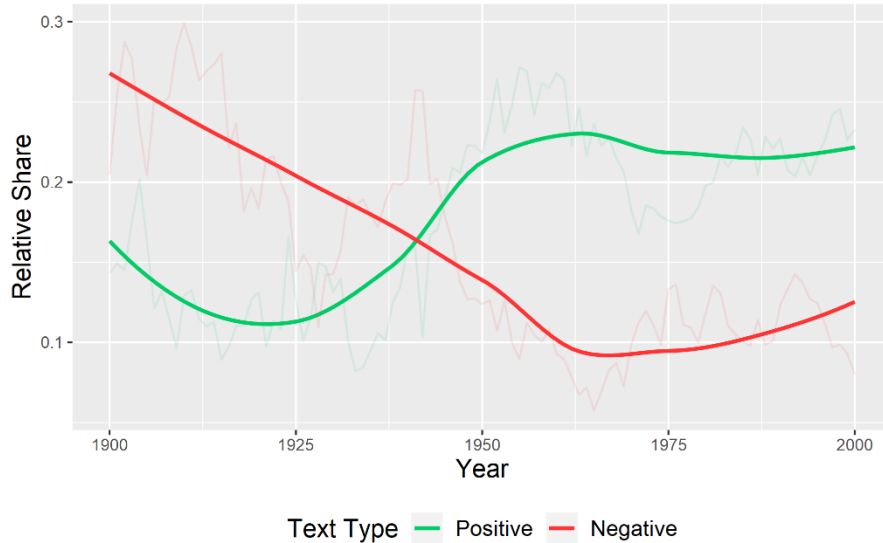


Ad Types — All ads — Ads with image — Ads with non-neutral text

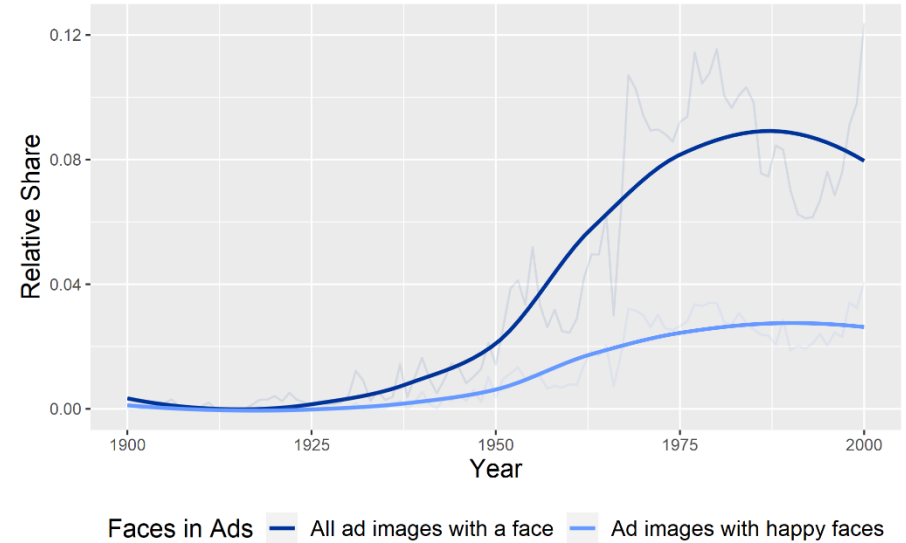
Preliminary Findings

Degree of emotionality is changing over time

RQ2: Emotionality in Ad Text



RQ2: Emotionality in Ad Images



Preliminary Findings

Ad emotionality is driven by text and image sentiment

	Positive text	Neutral text	Negative text
Text-only ads	67.4%	78.7%	90.2%
Ads with image	32.6%	21.3%	9.8%
Without people	22.3%	15.6%	7.2%
With people	10.3%	5.7%	2.6%
Happy face	3.7%	1.6%	0.7%
Other face	6.7%	4.1%	1.9%

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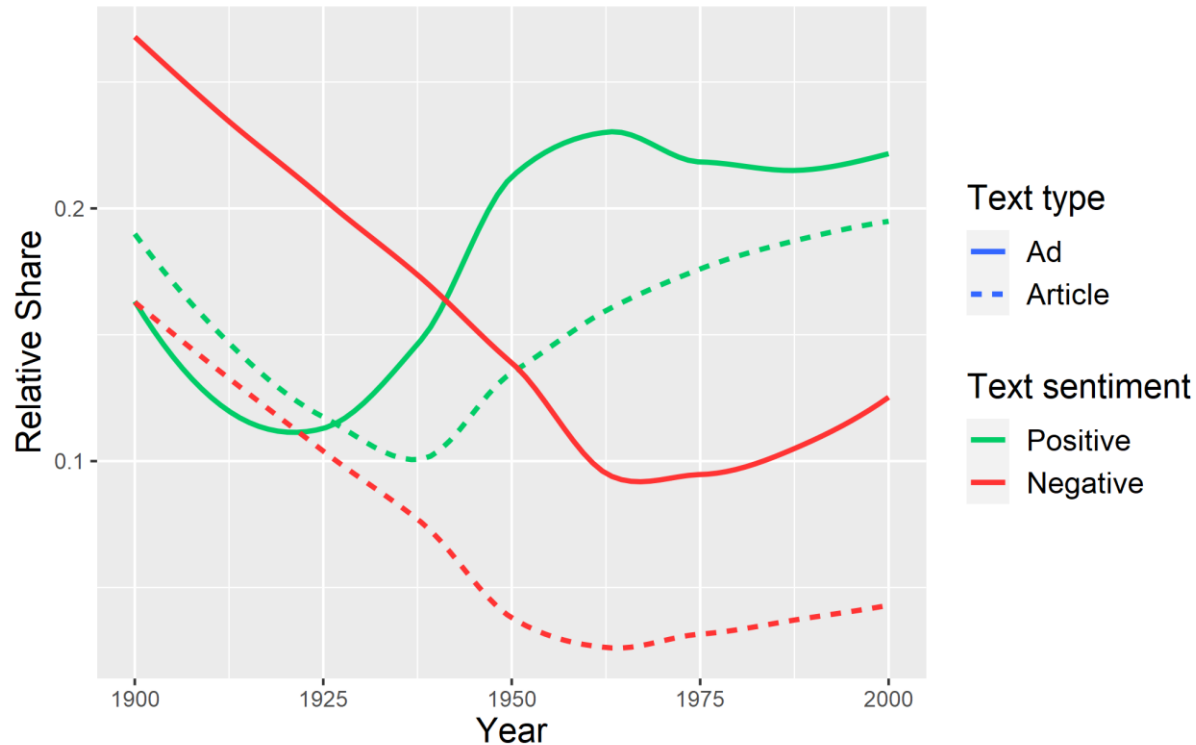
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Preliminary Findings

Emotionality of ads and editorial content develops similarly

RQ4: Text Sentiment in Different Text Types



Next steps

- Include other types of facial emotions
- Robustness check with other sentiment dictionaries

The End

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Thank you for your attention and helpful remarks!