

# Using Laboratories to Augment Content Analyses

Content Analysis PDW, AOM 2022

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# So, let's test this today...

Four of my intentions:

- Positive (tone\_pos & emo\_pos)
- Not Negative (tone\_neg & emo\_neg)
- Future-focused (focusfuture)
- Provide Insights (insight)

Methods:

- Descript transcribing live
- LIWC-22 to analyze
- I'll come back up for 1 minute later

# Content Analysis

is not perfect...

# Big Idea

Experiments can be used to  
supplement traditional content  
analyses

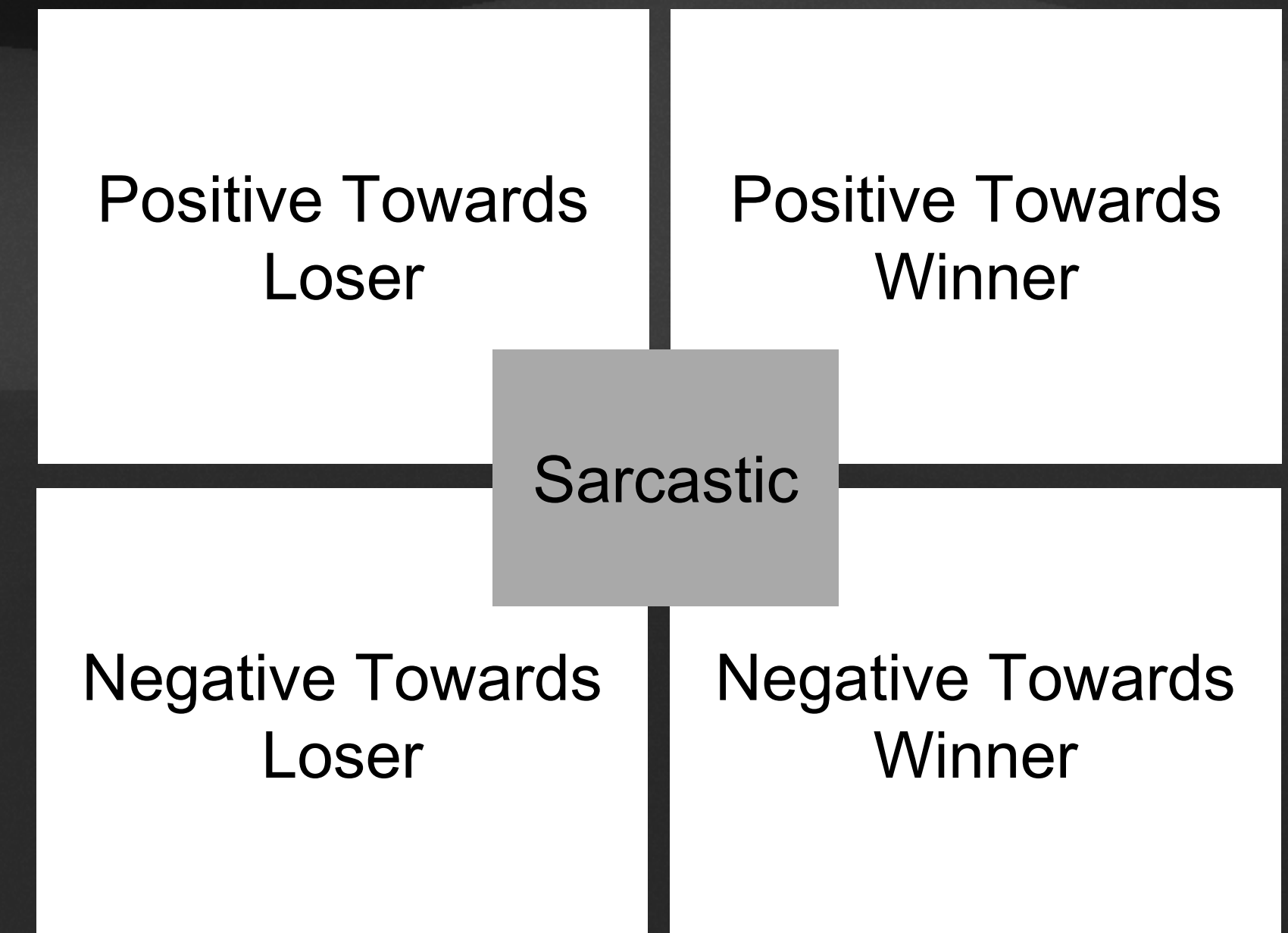
Content analysis scores  
are perfectly correlated with  
neither the speaker's intentions,  
nor the readers' interpretation

For example,  
my dry sense of humor...

# The back story

## Study of organizational identification, outcomes, and online engagement

- Study of tens of thousands of Facebook posts in response to NCAA football games
- Our content analyses techniques had trouble coding even simple categories such as positive and negative
- Brought in human coders, but still disagreement



**Appendix A, Table 1. Inter-rater Reliability of Emotional Content**

| Rater or Software Package |                   | 1                | 2                | 3                |
|---------------------------|-------------------|------------------|------------------|------------------|
| 1.                        | Human Rater 1     |                  |                  |                  |
| 2.                        | Human Rater 2     | 0.42<br>(62.37%) |                  |                  |
| 3.                        | LIWC-22           | 0.10<br>(39.90%) | 0.15<br>(43.21%) |                  |
| 4.                        | <u>Adoreboard</u> | 0.04<br>(36.93%) | 0.10<br>(40.77%) | 0.16<br>(38.33%) |

N = 574; Percentage agreement is provided in parentheses.

OREGON --- WHAT A COMPLETE JOKE  
OF A FOOTBALL TEAM!!!!!!!!!!!!!! LOL  
!!!!HAHAHAHAHAHAHAHAHAHAHAHAHAHAHA

Nd fans don't show unless they  
win.

# Experimental Design

- 203 Undergraduate students
- Continuous measure of identification (6 items)
- Randomly assigned game outcomes
- Measure facial expressions (iMotions ODC)
- Have participants choose whether to post
- Have participants rate the post (7-point scale)
  - Overall positive/negative
  - Positive/Negative towards the winner and loser
  - Sarcasm

# Example Results

from experimental analysis

- Many DVs, statistically significant MANOVA
- Positive facial expressions had a positive and marginally significant effect on the likelihood of making an online comment ( $\beta = 0.02$ ,  $p < 0.10$ ), but negative facial expressions did not ( $\beta = -0.04$ , n.s.).

# Example Results

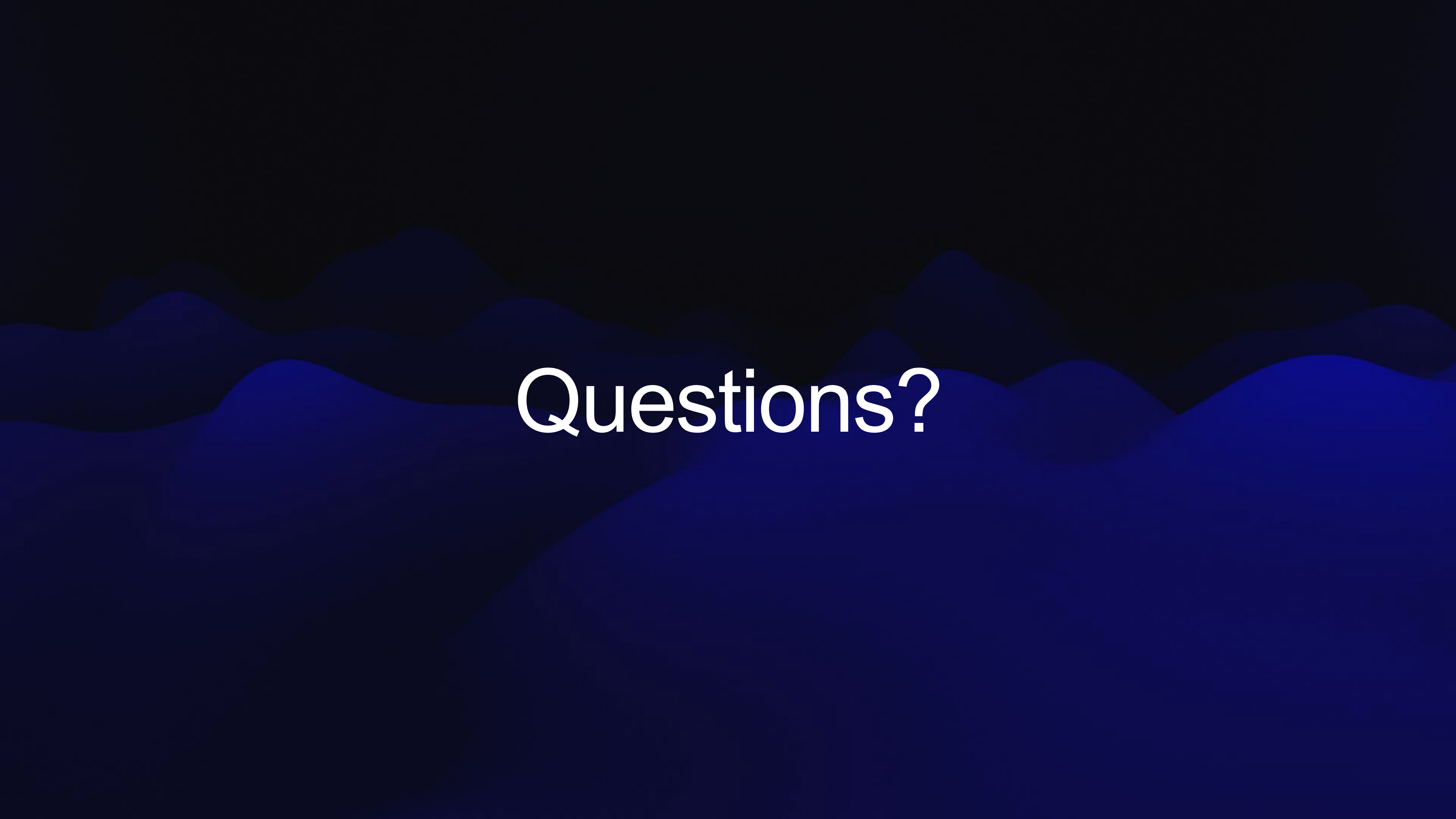
## from experimental analysis

**Table 4. Ordinary Least Squares Regression Results from Follow-on Analyses Predicting Content of Online Posts**

| Variables                 | Positive                     |                         | Negative                 |                         | Sarcastic              |
|---------------------------|------------------------------|-------------------------|--------------------------|-------------------------|------------------------|
|                           | Toward Winner<br>Model 1     | Toward Loser<br>Model 2 | Toward Winner<br>Model 3 | Toward Loser<br>Model 4 | Overall<br>Model 5     |
| <b>Identification:</b>    |                              |                         |                          |                         |                        |
| with Winner               | <b>0.59**</b><br>(0.08)      | −0.04<br>(0.05)         | −0.07<br>(0.06)          | −0.10<br>(0.10)         | −0.11<br>(0.08)        |
| with Loser                | −0.38**<br>(0.09)            | <b>0.31**</b><br>(0.05) | 0.01<br>(0.07)           | −0.09<br>(0.11)         | 0.01<br>(0.09)         |
| <b>Disidentification:</b> |                              |                         |                          |                         |                        |
| with Winner               | −0.22 <sup>†</sup><br>(0.13) | −0.10<br>(0.07)         | <b>0.43**</b><br>(0.09)  | 0.03<br>(0.15)          | <b>0.27*</b><br>(0.13) |
| with Loser                | −0.05<br>(0.13)              | −0.11<br>(0.07)         | −0.05<br>(0.09)          | <b>0.42**</b><br>(0.15) | 0.19<br>(0.13)         |
| Constant                  | 4.38**<br>(0.35)             | 1.39**<br>(0.21)        | 0.92**<br>(0.25)         | 3.06**<br>(0.42)        | 1.51**<br>(0.35)       |
| Observations              | 181                          | 181                     | 181                      | 181                     | 181                    |
| R-squared                 | 0.37                         | 0.19                    | 0.17                     | 0.05                    | 0.07                   |

Standard errors provided in parentheses. Two-tailed *p*-values.

\*\*  $p < 0.01$ ; \*  $p < 0.05$ ; <sup>†</sup>  $p < 0.10$



Questions?

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|       |      |
|-------|------|
| Words | 3237 |
|-------|------|

|           |      |
|-----------|------|
| Affect    | 3.92 |
| tone_pos  | 1.33 |
| tone_neg  | 2.41 |
| emotion   | 1.3  |
| emo_pos   | 0.25 |
| emo_neg   | 0.86 |
| emo_anx   | 0    |
| emo_anger | 0.12 |
| emo_sad   | 0.03 |
| swear     | 0    |

|           |       |
|-----------|-------|
| Cognition | 14.27 |
| allnone   | 0.86  |
| cogproc   | 13.28 |
| insight   | 3.68  |
| cause     | 2.13  |
| discrep   | 2.07  |
| tentat    | 2.22  |
| certitude | 0.93  |
| differ    | 3.49  |
| memory    | 0.12  |

|              |      |
|--------------|------|
| focuspast    | 4.32 |
| focuspresent | 5.75 |
| focusfuture  | 3.15 |

filler