Anti-smoking ads at the point-of-sale
The influence of ad type and context on ad reactions

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Efforts to counter tobacco messages at the POS

- 2009 NYC Bureau of Health required all licensed tobacco retailers to post graphic health warnings at point-of-sale (POS)

- Small sign (1ft x 1ft) at each register or large sign (2ft x 2ft) near tobacco display

- 2010 sued by tobacco companies and retailer trade associations

- Exposure to signs increased awareness about smoking-related health risks and thoughts about quitting (Coady, et al 2013)
Experimentally test the effect of anti-ads at the POS

- Virtual store experiment to examine impact of banning tobacco product displays and posting anti-smoking signs at POS
- Covering displays significantly lowers tobacco purchase attempts and urges to smoke
- Posting graphic health warning sign had minimal impact on these outcomes

Source: Kim et al, 2014
Are certain types of ads more effective than others?

- Graphic ads generally more effective than other ad types  
  Sources: Cantrell et al., 2013; Nonnemaker et al., 2014; Strasser et al., 2012

- Most of the evidence from TV ads and graphic health warning labels  
  Sources: Davis et al., 2011; Leshner et al., 2009; Niederdeppe et al., 2011

- No study has systematically compared different types of anti-smoking print ads
Does the placement of the ad matter?

On Display

Next to Pro-Tobacco Ad
Influence of tobacco images/displays
- Trigger cravings (Shiffman et al., 2013)
- Stimulate unplanned purchases among adult current smokers and relapse among recent quitters (Wakefield et al, 2008; Germain et al 2010)

Media priming theory suggests that media messages can be used to make previously established cognitions more salient and more influential in shaping judgments and behavior (Domke et al, 1998)
- Countermarketing messages about PREPS was more effective when smokers were exposed to both anti- and pro-PREP ads (Rouso et al., 2011)

Providing too much information could produce cognitive overload and inhibit message processing (Wilson & Wolf, 2009)
To experimentally test the effect of:

- Ad type (graphic, emotional, how to quit positive, how to quit negative)
- Ad context (alone, next to pro-ad, on display)

on ad reactions among adult current smokers and recent quitters
### Study Design

- **Between-subjects**
- 3 different ads of each type x context combination
- 3 control conditions

<table>
<thead>
<tr>
<th>Ad Context</th>
<th>Emotional</th>
<th>Graphic</th>
<th>Quit Benefit (+)</th>
<th>Quit Benefit (-)</th>
<th>Control</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alone</td>
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<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>(no ad)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With Pro Ad</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(pro ad only)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>On Display</td>
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<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>(display only)</td>
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</tbody>
</table>
A TIP FROM A FORMER SMOKER

RECORD YOUR VOICE FOR LOVED ONES WHILE YOU STILL CAN.

Terrie. Age 52
North Carolina

Smoking causes immediate damage to your body. For Annette, it caused lung cancer. You can quit. For free help, call 1-800-QUIT-NOW.
STOP SMOKING
START REPAIRING

In 1 week
- your sense of taste and smell improves

In 3 months
- your lung function begins to improve

In 8 hours
- excess carbon monoxide is out of your blood

In 1 year
- a pack-a-day smoker will save over $4,000

In 1 month
- skin appearance is likely to improve

In 5 days
- most nicotine is out of your body

In 12 months
- your risk of heart disease has halved

Today
- quit before getting pregnant and your risk of having a preterm baby is reduced to that of a non-smoker

EVERY CIGARETTE YOU DON'T SMOKE IS DOING YOU GOOD

QUIT NOW
1-800-QUIT-NOW
8 HOURS
after you quit smoking,
your blood oxygen level returns
to normal.

But right now, you're one cigarette closer to CANCER.

Quit smoking today.
For help, call 1-800-QUIT-NOW
WARNING

ORAL CANCER

These white spots are a form of oral cancer caused primarily by smoking. Even if you survive, you may lose part or all of your tongue.

Need help to quit?

1-800-QUIT-NOW
Ad Type x Context: With Pro Ad

Organic tobacco does NOT mean a safer cigarette.

SUGGESTED AT&T WARNING: Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, and Low Birth Weight.

No additives in our tobacco does NOT mean a safer cigarette.

WARNING

ORAL CANCER
These white spots are a form of oral cancer caused primarily by smoking. Even if you survive, you may lose part or all of your tongue.

Need help to quit?
1-800-QUIT-NOW
Online convenience sample (GMI)
N= 7,812 U.S. adults
Current smokers: some days or every day
Recent quitters: quit within past year
Eligible participants randomized to 1 of 39 (36 ad conditions, 3 control)
Emotionally charged information is more likely to result in positive behavior change (e.g. Witte, 1992; Hammond 2011; Kees et al, 2010).

Motivational reaction is associated with quit attempts (Davis et al, 2012).

Perceived effectiveness is associated with attitudes about smoking, increased desire to quit, intention to quit (Davis et al, 2012), and actual quit at follow-up (Davis et al, under review).
Measures of Ad Reactions

- **Negative Emotion** (1=not at all, 5=very)
  - Depressed, Afraid, Ashamed, Worried, Sad
- **Affective Dissonance** (1=not at all, 5=very)
  - Uncomfortable, Uneasy, Bothered
- **Motivational Reaction** (1=not at all, 5=very)
  - Motivated, Hopeful, Understood
- **Perceived Effectiveness** (0=strongly disagree, 4=strongly agree)
  - Worth remembering, grabbed my attention, powerful, informative, meaningful, convincing
- **Cronbach’s alpha = 0.87 – 0.93**

Sources: Davis et al., 2013; Simmons et al., 2013; Davis et al., 2012
Analysis

- Test main effects of ad type & context on ad reaction variables using regression models
- Final models include interaction effects between ad type & context when significant (p<0.05)
- Separate models for smokers and quitters
- STATA Version 13.2

* All models control for age, gender, race/ethnicity, education (and daily smoking status in smoker analyses)
Sample Characteristics

**Age**
- 18-34
- 35-54
- 55+

**Race/Ethnicity**
- White*
- Black*
- Hispanic
- Other*

*Non-Hispanic
Sample Characteristics

Gender

- Male
- Female

Education

- Less than HS
- HS graduate
- Some college
- College grad
Sample Smoking Characteristics

**Smoking Status**
- Daily smoker
- Non-daily smoker
- Recent quitter

**Time Since Quit**
(Recent Quitters Only)
- <1 mon
- 1-3 mons
- 3-6 mons
- 6-12 mons
Ad Type & Context Effects on Negative Emotion

Smokers

Quitters

Mean

Alone With Pro Ad On Display

Mean

Alone With Pro Ad On Display

= Graphic  = Emotional  = Quit Benefit (+)  = Quit Benefit (-)
Ad Type & Context Effects on Affective Dissonance

**Smokers**

- **Mean**
  - **Graphic**
  - **Emotional**
  - **Quit Benefit (+)**
  - **Quit Benefit (-)**

**Quitters**

- **Mean**
  - **Graphic**
  - **Emotional**
  - **Quit Benefit (+)**
  - **Quit Benefit (-)**
Ad Type & Context Effects on Motivational Reaction

**Smokers**

- **Mean**
  - **Alone**
  - **With Pro Ad On Display**

**Quitters**

- **Mean**
  - **Alone**
  - **With Pro Ad On Display**

- **Legend**:
  - ▲ Graphic
  - ■ Emotional
  - □ Quit Benefit (+)
  - ○ Quit Benefit (-)
Ad Type & Context Effects on Perceived Effectiveness

**Smokers**
- Mean values for Smokers with different ad types and contexts.
- Graphs show mean effectiveness ratings for being alone or with a pro ad on display, categorized by ad type.

**Quitters**
- Mean values for Quitters with different ad types and contexts.
- Graphs show mean effectiveness ratings for being alone or with a pro ad on display, categorized by ad type.

- **Graphic** = Diamond icon
- **Emotional** = Square icon
- **Quit Benefit (+)** = Circle icon
- **Quit Benefit (-)** = Star icon

Legend:

- **Diamond** = Graphic
- **Square** = Emotional
- **Yellow** = Quit Benefit (+)
- **Blue Star** = Quit Benefit (-)
Summary of Results

- **Negative Emotion**
  - Ads paired with pro ads evoke less negative emotion than ads alone
  - For quitters, ads on a display evoke more negative emotion than ads alone
  - Graphic ads evoke more negative emotion than ads displaying positively and negatively-framed quit benefits

- **Affective Dissonance**
  - Ads paired with a pro ad or on a display evoke less affective dissonance than ads alone
  - Graphic ads evoke more affective dissonance than other ad types
Motivational Reaction
- For smokers, ads alone evoke more motivational reaction than ads paired with a pro ad or on a display
- Graphic ads evoke more motivational reaction than ads displaying positively and negatively-framed quit benefits
- For quitters, graphic ads paired with a pro ad evoke more motivational reaction than emotional ads and those featuring positively-framed quit benefits
- For quitters, graphic ads on a display evoke more motivational reaction than other ad types
Summary of Results

- **Perceived Effectiveness**
  - Smokers perceive graphic ads as more effective than emotional ads
  - Quitters view graphic ads as more effective than other types when paired with pro ad
  - Smokers perceive graphic ads as more effective on a display compared to emotional ads
  - Quitters perceive graphic ads as more effective on a display compared to ads conveying positively-framed benefits of quitting
Discussion

- Does ad type matter?
  - Yes, graphic ads performed better

- Does context matter?
  - Yes, to some extent, placing anti-ads near pro-ads or on a display diminishes the effect on ad reactions
  - Variation by ad type, but graphic ads were least influenced by context

- Limitations:
  - Potential previous exposure to ads
  - Single exposure to ads in this study
  - Convenience sample, limited generalizability
While previous studies suggest that the ad reactions we examined are associated with behavioral outcomes, this is primarily from TV ad campaigns and GHW studies, but it might not be as relevant in the POS environment.

More research is needed
- What is the response that anti-ads should elicit in the POS context?
Next steps

Exposure
- Ad Type
- Ad Context

Ad Reactions
- Negative Emotion
- Affective Dissonance
- Motivational Reaction
- Perceived Effectiveness

Recall

Knowledge, Attitudes

Behaviors
Project Team & Funding

- James Nonnemaker, PhD
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