When Organizations Talk to Consumers about Counterfeiting:

Analysis of 2005-2024 Communication and Consumer Education Campaigns to Build Theory-Informed Brand Protection Strategies

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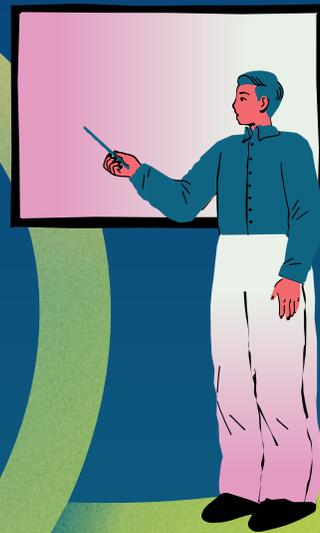Moldir Moldagaliyeva | Heijin Lee | Subhalakshmi Bezbaruah | Dana Anafina

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Executive Summary

Counterfeiting is a continually growing global risk, costing the global economy hundreds of billions to trillions of dollars each year, affecting communities worldwide, and **directly harming consumer safety, health, and well-being**. Consumer buying is a complex decision-making process. Our 2023 global study of consumers found that 74% purchased counterfeits, with more than half doing so knowingly. Of the more than two-thirds of consumers surveyed that were deceived into buying a counterfeit, 38% decided to keep the product (Alhabash et al 2023).
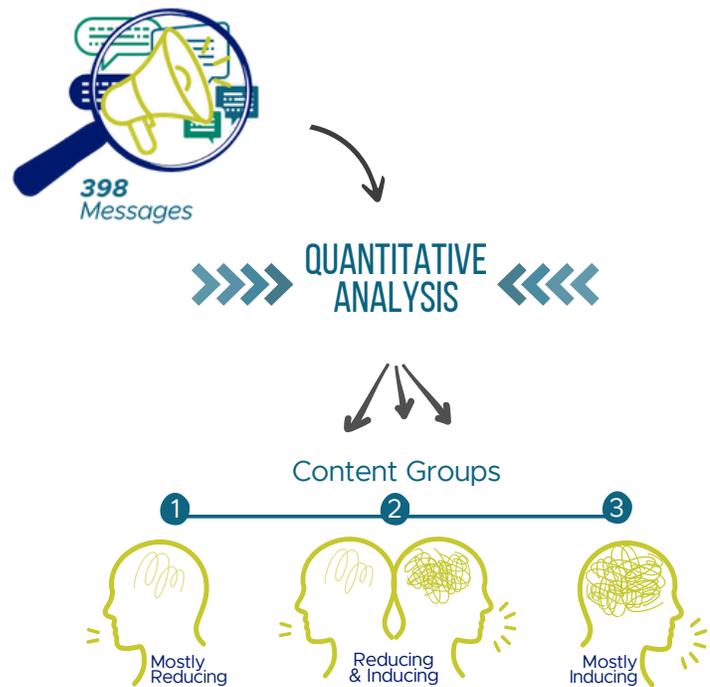
This project evaluates **anti-counterfeiting communication strategies** through a comprehensive content analysis of existing campaigns and experimental research grounded in media and communication theory, specifically the theory of psychological reactance. **The goal is to provide brand protection professionals with evidence-based insights to influence consumer attitudes and the complex behaviors around counterfeit purchasing.**

Methodology

Content Analysis

The research team used a convenience snowballing sample by identifying and reviewing **94 anti-counterfeit campaigns** that contained **398 English-language messages** publicly displayed between **2005-2024.**

Messages were then **evaluated and pooled** by the type of **psychological reactance element** used. **The resulting pool contained 3 different groups:** mostly reactance reducing, mostly reactance inducing, both reactance reducing and inducing.

398 Messages

QUANTITATIVE ANALYSIS

Content Groups

1 — Mostly Reducing

2 — Reducing & Inducing

3 — Mostly Inducing

Psychological Reactance

What is?

Conscious or less conscious thoughts and feelings that one's freedom to engage in a behavior is threatened. Often, such thoughts and feelings are accompanied by anger.

Consequently, when individuals perceive a loss of freedom, they attempt to restore it by intensifying rather than abandoning risky behavior, often coming to further like and justify that behavior (Brehm, 1966; Burgoon et al., 2002; Rosenberg & Siegel, 2018).
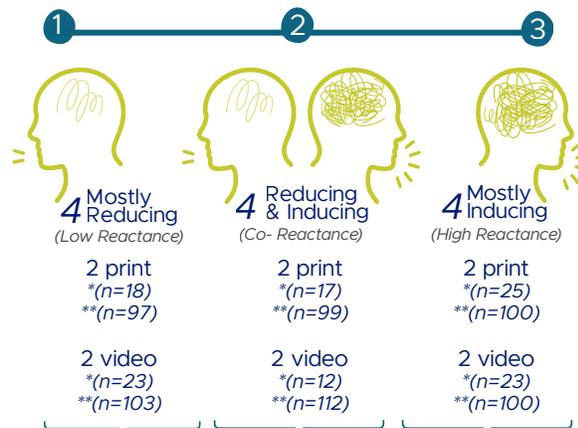
Experimental Testing

Two experiments were conducted by the research team using a total of 48 messages from the content analysis pool. The study design consisted of four messages from each of the three groups, mostly reactance reducing, mostly reactance inducing, both reactance reducing and inducing. The experiment was conducted online with half of the messages presented in video and half in print.

The first experiment included 118 participants who evaluated **attitude and behavorial intentions** when shown print and video messages at the three levels of reactance.

In a pretest to the second experiment, researchers **evaluated if participants would react differently** to the messages in Experiment 1, if the **messages were attributed to sources** (government agency, commercial company, non-profit NGO, and international organization) **with different levels of perceived authority**.

Experiment 2 included 611 participants who **evaluated responses** based on the same characteristics from the **first experiment, along with message source**, to see how **participants viewed credibility and perceived risk.**

Message Content Groups
48 Messages

1 ———— 2 ———— 3

4 Mostly Reducing
(Low Reactance)

2 print
*(n=18)
**(n=97)

2 video
*(n=23)
**(n=103)

4 Reducing & Inducing
(Co- Reactance)

2 print
*(n=17)
**(n=99)

2 video
*(n=12)
**(n=112)

4 Mostly Inducing
(High Reactance)

2 print
*(n=25)
**(n=100)

2 video
*(n=23)
**(n=100)

EXPERIMENTAL TESTING

How are reactions different between the message groups?

*EXPERIMENT 1
118 participants
Reactance | Attitude | Intention

How are reactions different between the message groups?

**EXPERIMENT 2
611 participants
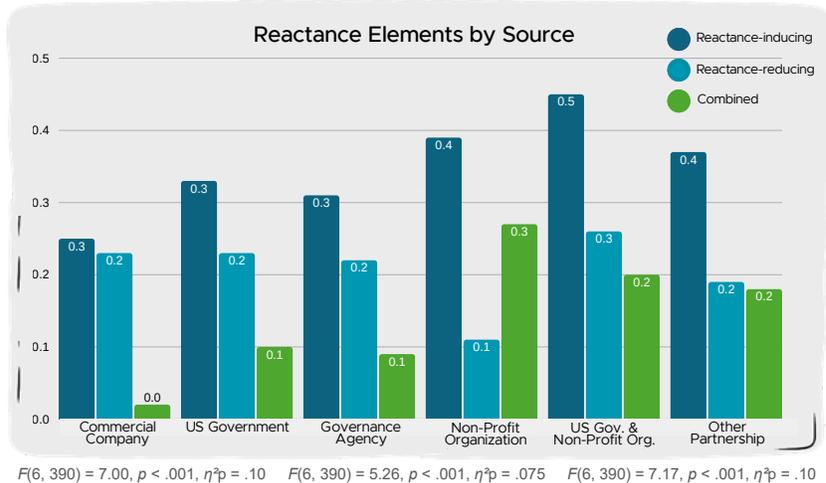Reactance | Attitide | Intention |Authority | Credibility | Risk

Pre-Test
122 Participants
Perceived Authority of Organizational Sources
Will participants experience lower reactance if messages are attributed to authoritative sources?

Key Findings

Message Content & Strategy

- **Reactance-inducing** elements (e.g., authoritative tone, negative emotional appeals) were **more common** than **reactance-reducing** ones.

- **Reactance-reducing** techniques (e.g., narratives, mild language, social norm framing) were **underused**—present in fewer than 20% of campaigns.

- **Many messages combined both types**, which can be effective but **must be used strategically.**

Reactance Elements by Source

Legend: Reactance-inducing, Reactance-reducing, Combined

$F(6, 390) = 7.00$, $p < .001$, $\eta^2p = .10$ $F(6, 390) = 5.26$, $p < .001$, $\eta^2p = .075$ $F(6, 390) = 7.17$, $p < .001$, $\eta^2p = .10$

Message Source

- **Source** attribution (e.g., government agency, commercial company, non-profit organization) had **limited impact** on audience response.

- **Government agency and commercial company sources** were perceived as more authoritative.

Message Format

- **Video** messages **outperformed print** in:

  - Eliciting emotional responses (e.g., anger)
  - Increasing risk awareness and self-efficacy
  - Encouraging social media sharing
  - Reducing future counterfeit purchase intentions

Perceived Authority by Source

Commercial Company: 5.56, Government Agency: 5.63, Non-Profit Organization: 5.21, Governance Organization: 5.44
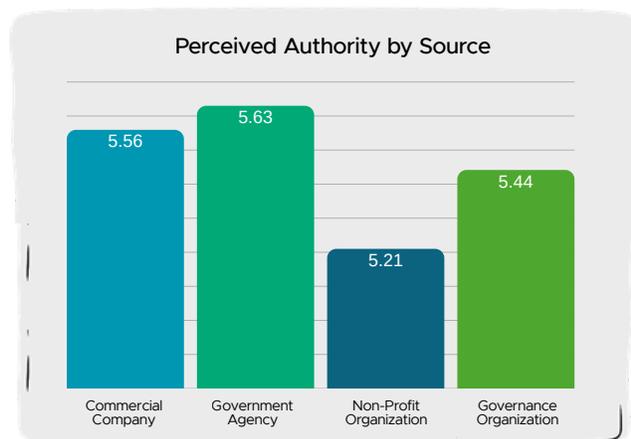
Audience Segments

- **Frequent counterfeit buyers** showed stronger emotional reactions and higher engagement. They were more **likely to share messages** and felt more capable of protecting themselves.

- **Tailored messaging is essential** for different consumer segments.

Implications for Practice

Prioritize Video
- Use **video formats** to maximize effectiveness in **engagement** and **driving awareness and behavior change**.
- Explore **underutilized media** like television and radio.

Balance Message Tone
- **Reduce physiological reactance** by avoiding overly controlling language and negative appeals.
- Use **reactance-reducing** elements to **soften high-reactance content** when needed.
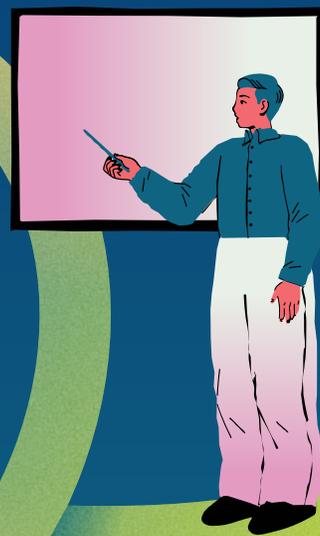
Customize Campaigns
- Develop **strategies for different product categories and consumer profiles.**
- Segment audiences based on **buying behavior** to tailor message tone and content.

Diversify Content
- Incorporate **underused persuasive techniques** like storytelling, positive framing, and social norms.

Background

Counterfeit Purchasing
A Persistent Global Issue

Purchasing counterfeit goods is a serious global problem. **Counterfeit businesses** cumulatively account for hundreds of billions to trillions of dollars in revenue annually, which makes the counterfeit market the **10th largest economy in the world** (Bharadwaj et al., 2020; Goldstein, Aug. 2, 2022). The risks to consumers when buying counterfeit goods range from health and safety to legal implications (U.S. Customs and Border Protection, n.d.). While low product quality in certain industries may lead to injuries or other negative consequences, **a prominent example of significant health risks to consumers comes from buying falsified or substandard medications.** The U.S. Centers for Disease Control and Prevention (CDC) reported that the death toll from opioid intake rose to over 100,000 between May 2020 and April 2021. Most deaths involved drugs modified by drug dealers (i.e., falsified, counterfeit) (Stobbe, Nov. 18, 2021). Indirect impacts of counterfeit purchasing include revenue losses for legitimate companies, job losses, and contributions to unlawful activities (U.S. Customs and Border Protection, n.d.). Despite such risks, consumers continue to engage in counterfeit purchasing. A 2023 global study of consumers found that **74% purchased counterfeits, with more than half doing so knowingly** (Alhabash et al., 2023).

Great efforts have been exerted by law enforcement agencies to combat the problem. Yet, **anti-counterfeit communication campaigns appealing to consumers are scarce** and **do not use theory and data approaches to facilitate effective communication and consumer education.** Anecdotal observations suggest that many anti-counterfeit campaigns use authoritative language and fear appeals that are known to elicit high psychological reactance and **lead to increased (instead of decreased) risky behaviors** (Brehm, 1966; Rosenberg & Siegel, 2018).

Consumer Behavior
To Buy or Not to Buy

Consumer buying is a complex decision-making process that is affected by individual, interpersonal, socioeconomic, cultural, and environmental factors (see social ecological models, e.g., Bronfenbrenner, 1993). Some of these factors include **interpersonal and mediated communication** (e.g., Moschis & Mitchell, 1986) where consumers learn about brands and products and make purchase decisions based on information they receive directly from others (e.g., a friend's suggestion) or in a mediated way (e.g., an advertisement, public service announcement, a post on social media, a review on a retailing website).

Studies have shown that consumers are largely **motivated to buy counterfeit products by low prices** (e.g., Albers-Miller, 1999; Ivanitskaya et al., 2010; Lichtenstein et al., 1993). **Motivations** to buy illegally produced, ingenuine products stretch beyond monetary costs and **include incentives such as utility and product-attribute** (e.g., value vs. price comparison, quality), **health, social, criminal risks, social norms, integrity** (e.g., ethical buying), **and attitudes toward counterfeiting, among others** (Albers-Miller, 1999; Tang, Tian, & Zaichowsky, 2013; Wee, Ta, & Cheok, 1995).

Media, especially Internet and mobile-enabled types, **may facilitate consumers' intentional or unintentional engagement in buying counterfeit products** by communicating information about price or normative beliefs about counterfeiting en masse. Brand protection practitioners have an opportunity and a variety of media tools to combat this. As much as media may be used by bad actors to persuade consumers to buy counterfeits, it can also be used by brand protection teams, along with **powerful communication strategies, to effectively disseminate information** about the risks, social norms, perceptions and consequences associated with the purchase of ingenuine product.

Consumer Messaging
Reactance is Key

> The success of any communication campaign depends greatly on the choice of **appropriate persuasive message strategies tailored to different types of audiences.**

Empirical research on educating consumers about counterfeit products is limited. However, practitioners suggest that anti-counterfeit messages should **emphasize brand quality, brand value and integrity, and brand reputation** (Hadad, 2016). One review showed that negative attitudes toward counterfeiting reduced purchase intention of counterfeits (Bird, 2007). This suggests that brand protection efforts can **influence behavior by shaping attitudes through effective, theory-based, data-driven strategic campaigns**. Bird also shows that perceived similarity of counterfeit and legitimate products (high vs. low parity) affects intention. These perceptions are related to risk aversion, suggesting that messages could highlight risk and price of risk (Bird, 2007).

Another study emphasized that implementing negative campaigns is typically not an effective way of anti-counterfeit persuasion because the campaigns evoke negative rather than positive associations with ingenuine product buying (Herstein et al., 2015). To further this argument, the researchers posit that **campaigns perceived as negative are more likely to induce psychological reactance** in consumers and **create a "boomerang effect" where the risky behavior increases instead of decreasing** (Burgoon et al, 2002). The following section discusses the psychological reactance theory and details various persuasive message elements in reactance inducing and reactance reducing messages.

Psychological Reactance
Types and Utilization

Reactance Inducing
Elicit reactance

- Highly Controlling Language
- Identity Threat
- Loss Frame
- Social Identity
- Threat
- Graphic Content
- Negative Emotional Appeal

Reactance Reducing
Reduce reactance

- Low Controlling Language
- Gain Frame
- Post-Script
- Epilogues
- Narrative
- Inoculation
- "Reversed" Reactance
- "Other" Referencing
- Descriptive Norms
- Injunctive Norms
- Self-Referencing
- Overhead Communication
- Positive Emotional Appeal

See Appendix A for definitions of the above reactance types

Psychological Reactance refers to conscious or less conscious **thoughts and feelings that one's freedom to engage in a behavior is threatened.** Often, such thoughts and feelings are **accompanied by anger**. Consequently, individuals **attempt to restore freedom that they perceive they are losing and, instead of quitting a risky behavior, they engage in it further** and sometimes even like and justify it more (Brehm, 1966; Burgoon et al., 2002; Rosenberg & Siegel, 2018). **Various message elements can induce or reduce psychological reactance (Appendix A)."**

While **reactance has often been treated as a negative outcome of communication, some scholars suggest it does not have to be avoided** for a campaign to be effective. For example, prosocial campaigns, like the "Truth" anti-smoking campaign, use elements to purposefully induce reactance with the aim to increase negative evaluations consumers have of tobacco companies. Public service announcements will use Highly Controlling Language (HCL) to target audiences about what to do or not to do, as opposed to Low Controlling Language (LCL) that might obscure the main goal of the message (Staunton, Alvaro, & Rosenberg, 2020). **However, evidence shows variability in effectiveness of reactance-inducing messages** as a function of audience attributes. For example, anti-smoking fear-inducing messages that often cause reactance are effective with nonsmokers but lead to the **"boomerang effect"** with heavy smokers (Wehbe et al., 2017).

In the context of buying counterfeit goods, research has indicated that humor appeals in social media posts about buying falsified/substandard medications reduced psychological reactance and elicited more favorable message evaluations than fear appeals (Alhabash et al., 2022). However, there was no significant difference between fear and humor appeal messages regarding behavior intentions to purchase prescription drugs on social media. More interestingly, participants in the

same study were more likely to engage with social media posts that included fear appeals rather than humor appeals (Alhabash et al., 2022). This preliminary evidence suggests that both low and high reactance prosocial message features may reduce psychological reactance, elicit negative evaluations of purchasing prescription drugs online, and decrease engagement in this risky behavior among social media users, warranting further investigation.

Persuasive messages are complex and often include both reactance-inducing and reactance-reducing elements. Reactance reduction can be a favorable outcome of a communication campaign. Yet, some studies suggest that inducing reactance can be necessary to achieve positive persuasion outcomes.

Research Aims
Inform Future Messaging

The project objectives were to **examine existing anti-counterfeiting campaigns from the perspective of the Psychological Reactance Theory** (Brehm, 1966) and **test the levels of psychological reactance** elicited by campaign messages to **inform the development of effective future persuasive communication strategies that change consumer attitudes and behaviors** and ultimately reduce counterfeit purchasing. **Specific aims were:**

1 **Determine the key features** of anti-counterfeit campaign messages that elicit or reduce consumers' reactance, using the method of content analysis.

- Identify the proportion of reactance-inducing vs. reactance-reducing message features in existing campaigns

- Indicate factors that affect the proportion of reactance-inducing vs. reactance-reducing message features in existing campaigns

2 **Test the key features** of anti-counterfeit campaign messages across different consumer types, using the method of experiment.

- Indicate the most effective levels of reactance (e.g., low, high, and co-reactance) in achieving campaign outcomes

- Explore factors, such as message modality and source, that influence the effectiveness of messages with reactance-related features

3 **Inform** the brand protection community for **future persuasive communication strategies** to change consumer purchasing behavior and awareness.

Methods

Quantitative Analysis
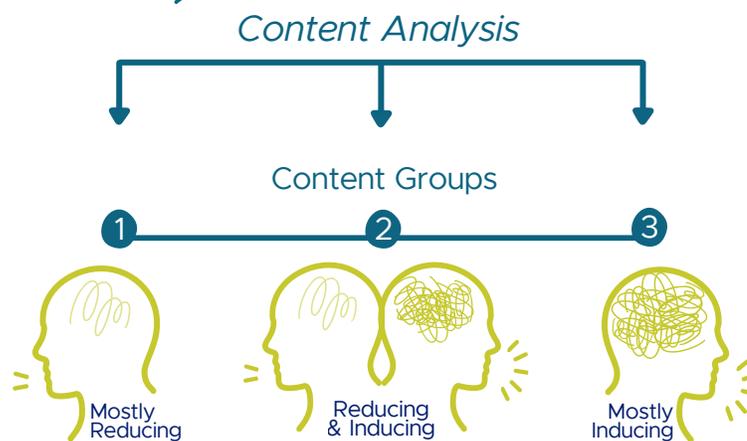## Content Reactance & Characteristics

Reactance Type Proportionality

To accomplish the aims of this project, the research team identified and reviewed **94 anti-counterfeit campaigns** that contained **398 English-language messages** (average of 4 messages per campaign) from time period of **2005-2024 to produce a convenience snowballing sample.**

Forty messages from this sample were first coded by two different coders to **assess intercoder reliability**. The average Brennan-Prediger's coefficient determined was .87 (range 0.70-1.00) and indicated **acceptable intercoder reliability** (>0.80).

Messages were then **evaluated** by the types of **psychological reactance elements** used. **The resulting pool contained 3 different groups:** mostly reactance reducing, mostly reactance inducing, and both reactance reducing and inducing.

398
Messages

Content Analysis

Content Groups

1   2   3

Mostly Reducing   Reducing & Inducing   Mostly Inducing

Message Characteristics Proportionality

In addition to evaluating the messages by the presence of reactance inducing and reactance reducing elements, the research team also coded them based on campaign source (e.g., government, company, non-profit, partnerships), media where the messages were published (e.g., website, social media, print), and campaign product category (e.g., pharmaceuticals, electronics, apparel).

Experimental Testing
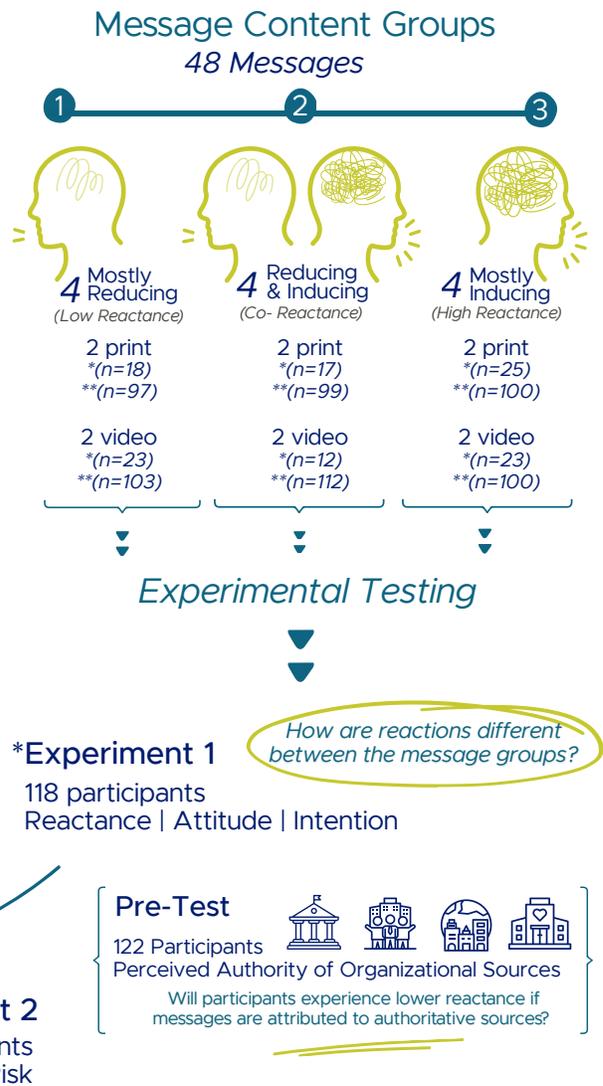## Consumer Responses to Campaign Messages

Selection of Messages for Testing

Two experiments were conducted by the research team using a total of 48 messages from the content analysis message pool. The study design consisted of four messages from each of the three groups, mostly reactance reducing, mostly reactance inducing, and both reactance reducing and inducing. The experiment was conducted online with half of the messages presented in video and half in print.

Experiment 1 included of 118 participants who evaluated **attitude and behavorial intentions** when shown the messages at the three levels of reactance and based on media type (print, video).

In a pretest to Experiment 2, the researchers **evaluated if participants would react differently** to the messages from Experiment 1 if the **messages were attributed to different sources** (government agency, commercial company, non-profit NGO, and international organization) **with varying levels of perceived authority**.

Experiment 2 included of 611 participants who **evaluated responses** based on the same characteristics from the **Experiment 1, along with message source**, to see how **participants viewed credibility and perceived risk.**

Message Content Groups
48 Messages

1   2   3

4 Mostly Reducing *(Low Reactance)*

4 Reducing & Inducing *(Co- Reactance)*

4 Mostly Inducing *(High Reactance)*

2 print *(n=18) **(n=97)

2 print *(n=17) **(n=99)

2 print *(n=25) **(n=100)

2 video *(n=23 **(n=103)

2 video *(n=12) **(n=112)

2 video *(n=23) **(n=100)

Experimental Testing

How are reactions different between the message groups?

*Experiment 1
118 participants
Reactance | Attitude | Intention

Pre-Test
122 Participants
Perceived Authority of Organizational Sources
Will participants experience lower reactance if messages are attributed to authoritative sources?

How are reactions different between the message groups?

**Experiment 2
611 participants
Reactance | Attitide | Intention |Authority | Credibility | Risk

* The cell sizes were adjusted to average number of 12 per cell in repeated-measures factorial analysis of covariance by randomly selecting cases in each group to satisfy the requirement of equal group sizes in factorial analyses of (co)variance.
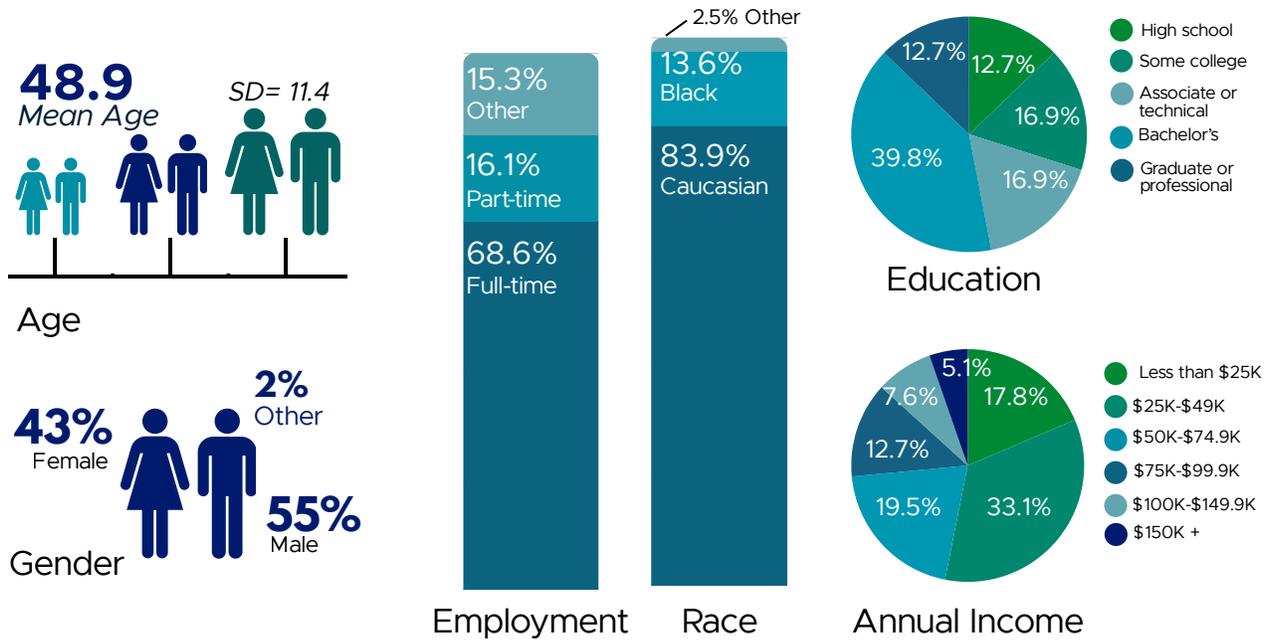
**The cell sizes were adjusted to the average number of 15 per cell (range, 13 to 17) in repeated-measures factorial analysis of covariance by randomly selecting cases in each group to satisfy the requirement of equal group sizes in factorial analyses of (co)variance. To control for potential side effects of organizational sources, two messages per condition selected at similiar levels of familiarity, humor use, and creative execution.
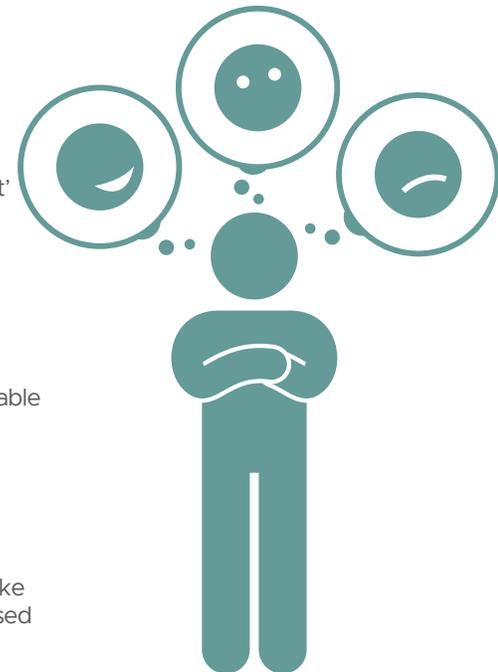
Experimental Testing
Consumer Responses to Campaign Messages

Demographics of Participants - Experiment 1
118 Participants

48.9 *Mean Age* *SD= 11.4*

Age

43% Female
2% Other
55% Male

Gender

15.3% Other
16.1% Part-time
68.6% Full-time

Employment

2.5% Other
13.6% Black
83.9% Caucasian

Race

Education
- 12.7% High school
- 16.9% Some college
- 16.9% Associate or technical
- 39.8% Bachelor's
- 12.7% Graduate or professional

Annual Income
- 17.8% Less than $25K
- 33.1% $25K-$49K
- 19.5% $50K-$74.9K
- 12.7% $75K-$99.9K
- 7.6% $100K-$149.9K
- 5.1% $150K +

Outcome Variables - Experiment 1

Reactance

ANGER

The ad made me feel...
- Aggravated
- Angry
- Irritated
- Bad

THREAT TO FREEDOM

The ad...
- Threatens my freedom to choose
- Manipulates me
- Makes decisions for me
- Pressures me
- Uses opinionated language

Behavioral Intentions

ONLINE ENGAGEMENT
- The ad is worth sharing with others
- I will recommend this ad to others
- I will 'like', 'share', 'comment' on this ad on social meda

PURCHASE INTENTION

I would buy a counterfeit 1) online and 2) offline
- Not probable : Very probable
- Not certain : Very certain
- Not likely : Very likely

Attitude

The ad made me feel...
- Unhappy : Happy
- Annoyed : Pleased
- Unsatisfied : Satisfied
- Melancholic : Contented
- Despairing : Hopeful
- Bored : Relaxed
- Calm : Excited
- Sluggish : Frenzied
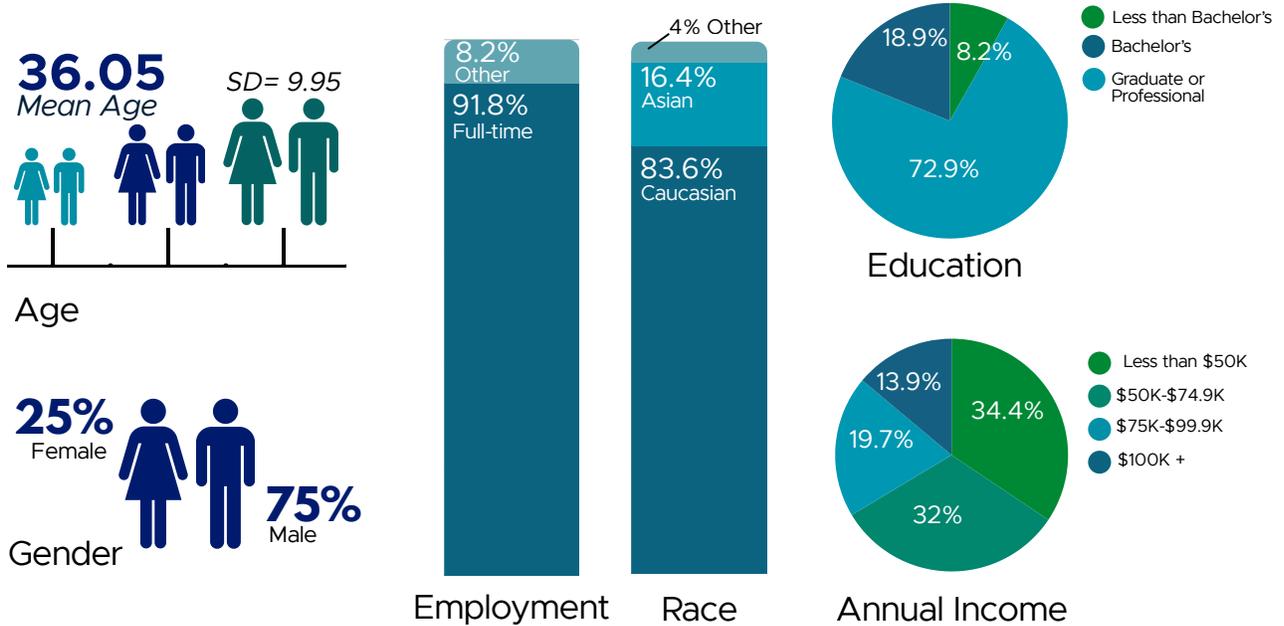- Dull : Jittery
- Sleepy : Wideawake
- Unaroused : Aroused

Experimental Testing
Consumer Responses to Campaign Messages

Demographics of Participants - Experiment 2 Pre-Test
122 Participants

36.05
Mean Age

SD= 9.95

Age

25%
Female

75%
Male

Gender

Employment
- 8.2% Other
- 91.8% Full-time

Race
- 4% Other
- 16.4% Asian
- 83.6% Caucasian

Education
- 8.2%
- 18.9%
- 72.9%
- Less than Bachelor's
- Bachelor's
- Graduate or Professional

Annual Income
- 34.4%
- 32%
- 19.7%
- 13.9%
- Less than $50K
- $50K-$74.9K
- $75K-$99.9K
- $100K +

Outcome Variables - Experiment 2 Pre-Test

Perceived Authority

The organizational source in the ad is...
- Weak : Strong
- Submissive : Dominant
- Soft : Tough
- Yielding : Firm
- Not Influential : Influential
- Not Significant : Significant
- No Authority : High authority
- No Power : High power

Experimental Testing
Consumer Responses to Campaign Messages

Demographics of Participants - Experiment 2
611 Participants

35.1
Mean Age   *SD= 9.3*

Age

35% Female

65% Male

Gender

5% Other

95% Full-time

Employment

3.5% Other

7.5% Asian

89% Caucasian

Race

Education
- 11.1%
- 15.4%
- 74%

Less than Bachelor's
Bachelor's
Graduate or Professional

Income
- 18.9%
- 20.5%
- 29.3%
- 31.3%

Less than $50K
$50K-$74.9K
$75K-$99.9K
$100K +
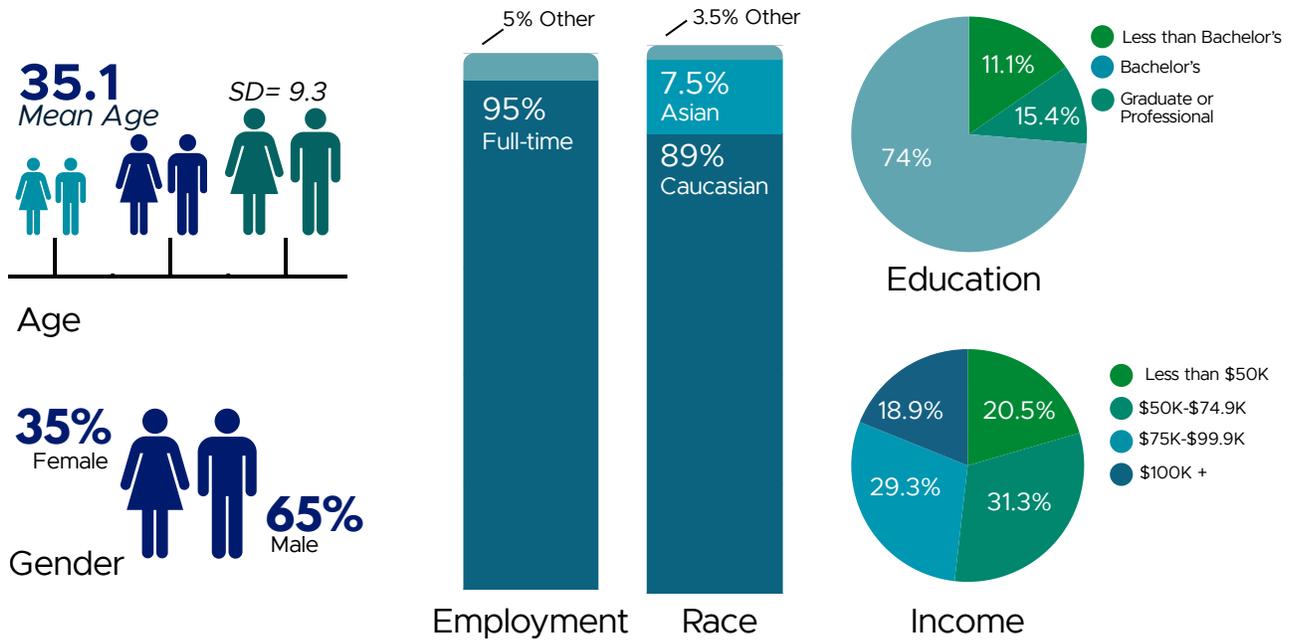
Outcome Variables - Experiment 2

Variables

Variables from Experiment 1
- Reactance
- Attitude
- Behaviorial Intentions

Credibility

The message is...
- Honest
- Truthful
- Credible
- Believable

Risk Perception
- Severity: How serious is the risk of buying counterfeits
- Susceptibility: How vulnerable one is to the risk of buying counterfeits
- Self-efficacy: How much one believes they can protect themselves from the risk
- Response efficacy: How much one believes they can respond to the risk effectively
- Response benefits: Benefits of responding to the risk
- Response cost: Costs of responding to the risk
- Protection motivation: One's motivation to protect themselves from the risk of buying counterfeits

Results

Quantitative Content Analysis
Reactance

Reactance Feature Distribution

The proportions of reactance-inducing and reactance-reducing elements were calculated for each message by dividing the number of reactance-related features present in a message by the total number of features of each type. The combined index of reactance was further calculated to estimate the message's reactance-inducing potential.

Reactance Type Proportions

- **Reactance Inducing**
  Mean = 0.35
  Median = 0.33
  SD = 0.20
  Range: 0 to 0.83

- **Reactance Reducing**
  Mean = 0.21
  Median = 0.23
  SD = 0.13
  Range: 0 to 0.69

- **Combined**
  Mean = 0.14
  Median = 0.13
  SD = 0.22
  Range: -0.46 to 0.67
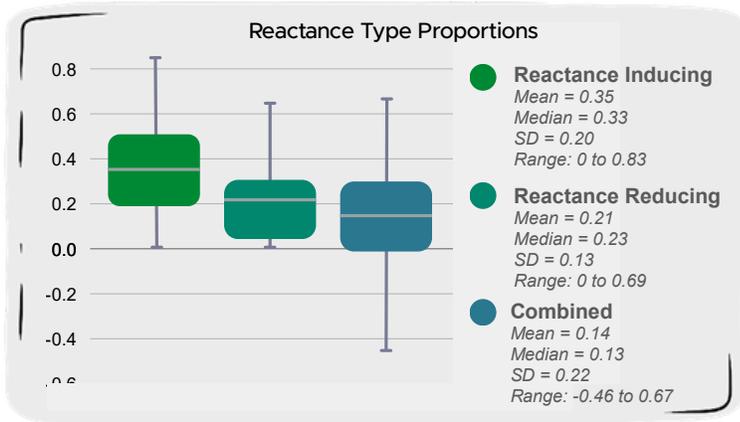
Despite the fact that features of both types were present in most messages, **reactance-inducing elements were used more frequently than reactance-reducing elements.** This means that the **analyzed anti-counterfeiting campaigns relied on reactance-inducing message content** (e.g., highly controlling language, loss frames, negative appeal) more than reactance-reducing content (e.g., low controlling language, gain frames, positive appeal, self-referencing).

Reactance Inducing Features

Nearly nine out of 10 coded messages (88.7%) contained at least one reactance-inducing feature.

Reactance Inducing Feature Type in Messages

- 63%
- 69%
- 55%
- 12%
- 8%
- 2%

Legend:
- Highly Controlling Language
- Loss Frame
- Negative Emotional Appeal
- Graphic Content
- Social Identity Threat
- Identity Threat
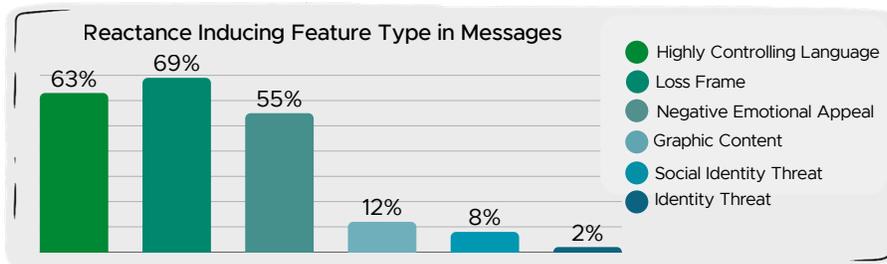
Reactance Reducing Features

Nearly nine out of 10 coded messages (89.9%) contained at least one reactance-reducing feature.

Reactance Reducing Feature Type in Messages

- 47%
- 67%
- 20%
- 36%
- 28%
- 17%
- 17%
- 13%
- 11%
- 11%
- 7%

Legend:
- Low Controlling Language
- Self-Referencing
- Other-Referencing
- Gain Frame
- Positive Emotional Appeal
- Overhead Communication
- Innoculation
- Descriptive & Injunctive Norms
- Narrative
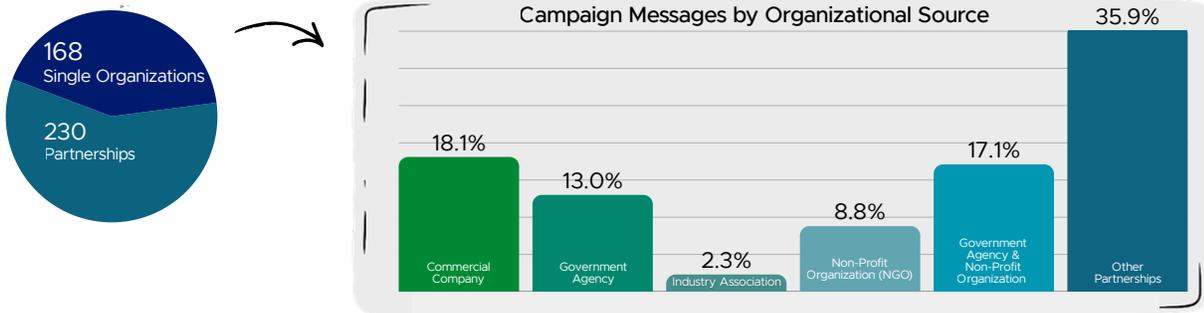- Post-Scripts & Epilogues
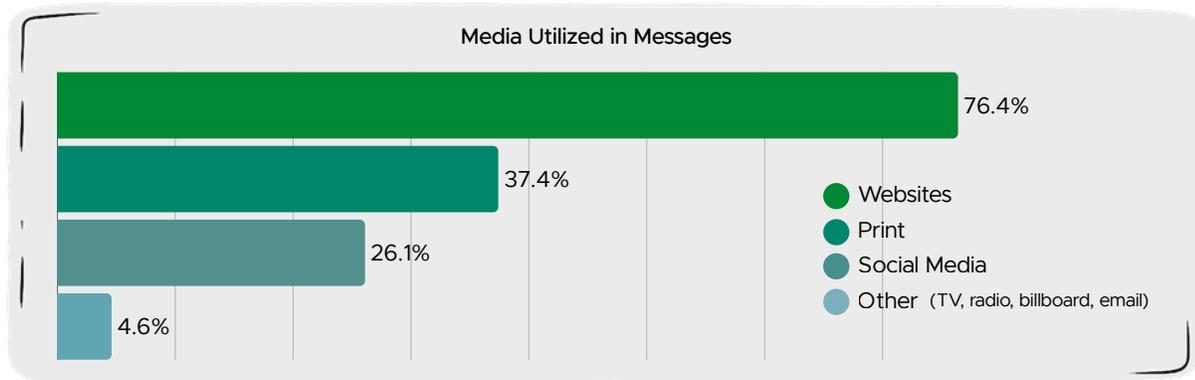- Reversed Reactance
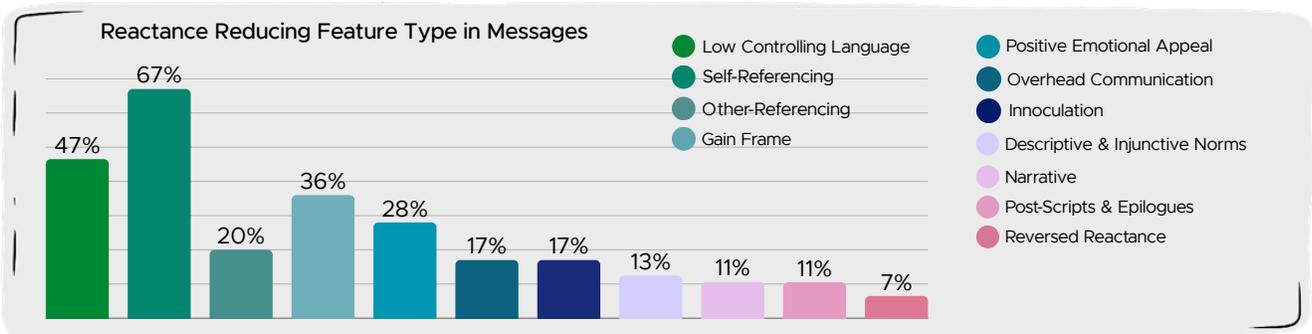
Quantitative Content Analysis
Message Characteristics
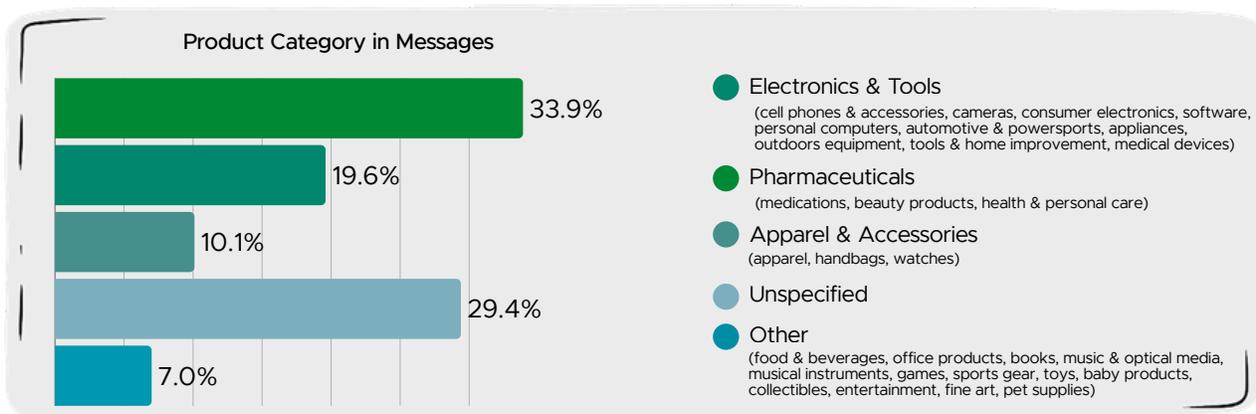
Message Source

The overall distribution of **campaign messages by organizational source** was about **42% single organizations** and **58% partnerships.** Of these, the most common were **brand, government agency, and an NGO partnered with a government agency,** while industry associations were the least common.

168 Single Organizations

230 Partnerships

Campaign Messages by Organizational Source

Commercial Company	Government Agency	Industry Association	Non-Profit Organization (NGO)	Government Agency & Non-Profit Organization	Other Partnerships
18.1%	13.0%	2.3%	8.8%	17.1%	35.9%

Message Media

Media Utilized in Messages

- 76.4%
- 37.4%
- 26.1%
- 4.6%

Legend:
- Websites
- Print
- Social Media
- Other (TV, radio, billboard, email)

Message Product Category

Product Category in Messages

- 33.9%
- 19.6%
- 10.1%
- 29.4%
- 7.0%

- **Electronics & Tools**
  (cell phones & accessories, cameras, consumer electronics, software, personal computers, automotive & powersports, appliances, outdoors equipment, tools & home improvement, medical devices)
- **Pharmaceuticals**
  (medications, beauty products, health & personal care)
- **Apparel & Accessories**
  (apparel, handbags, watches)
- **Unspecified**
- **Other**
  (food & beverages, office products, books, music & optical media, musical instruments, games, sports gear, toys, baby products, collectibles, entertainment, fine art, pet supplies)

Quantitative Content Analysis
Reactance by Characteristics

Message Source

When looking at the **reactance types utilized in campaigns based on organizational source**, the following key results were found:

- **Most sources used reactance inducing features more** than reactance reducing features.

  - **Government agencies** *(M$_{ind}$ = 0.33, SD = 0.22; M$_{red}$ = 0.23, SD = 0.16)*, **non-profit organizations** *(Mind = 0.39, SD = 0.18)*, **industry associations** *(M$_{ind}$ = 0.31, SD = 0.11; M$_{red}$ = 0.22, SD = 0.16)*, and **partnerships** *(M$_{ind}$ = 0.37, SD = 0.10; M$_{red}$ = 0.19, SD = 0.16)* **used overwhelmingly more reactance inducing** than reactance reducing features.

  - Campaigns by **commercial companies** were **less likely to use reactance inducing** features *(M = 0.25, SD = 0.20)* and **most likely to use reactance reducing features** *(M = 0.23, SD = 0.13)*.

  - **Non-profit** organizations were **least likely to use reactance reducing features** *(M = 0.11, SD = 0.13)*.

- Campaigns based on **partnerships between government agencies and non-profit organizations (NGO)** were **most likely to use reactance inducing and reducing message features**. *(Mind = 0.45, SD = 0.15; Mred= 0.26, SD = 0.11)*

- **Non-profit organizations** were most likely to combine reactance inducing and reducing elements *(M = 0.27, SD = 0.20)*, followed by **government-NGO partnerships** *(M = 0.20, SD =0.18)*, other partnerships *(M = 0.18, SD = 0.22)*, **government agencies** *(M = 0.10, SD = 0.25)*, and industry associations *(M = 0.09, SD = 0.22)*.

  - **Commercial companies** were **least likely** to use this message strategy *(M = 0.02, SD = 0.20)*.

Reactance Type Utilization by Organizational Source

● Reactance Inducing ● Reactance Reducing ● Combined

	Reactance Inducing	Reactance Reducing	Combined
Commercial Company	0.25	0.23	0.02
Government	0.33	0.23	0.10
Industry Association	0.31	0.22	0.09
NGO	0.39	0.11	0.27
Government & NGO	0.45	0.26	0.20
Other Partnerships	0.37	0.19	0.18
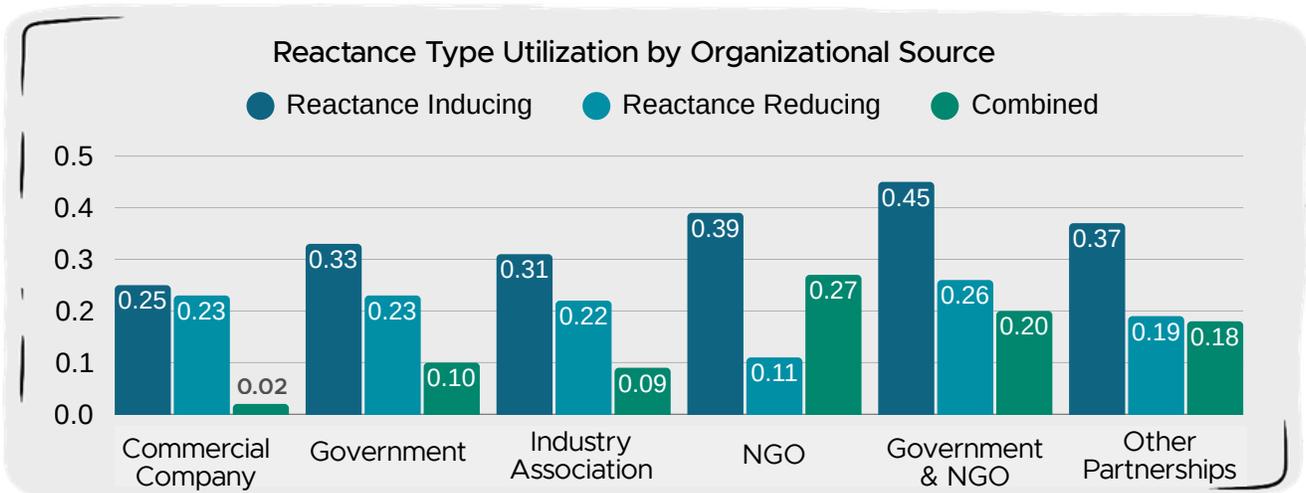
F(6, 390) = 7.00, p < .001, η²p = .10   F(6, 390) = 5.26, p < .001, η²p = .075   F(6, 390) = 7.17, p < .001, η²p = .10

M$_{ind}$ = Mean for reactance inducing messages; M$_{red}$ = Mean for reactance reducing messages

Quantitative Content Analysis
Reactance by Characteristics

Message Product Category

Reactance Type Utilization by Product Category

● Reactance-inducing ● Reactance-reducing ● Combined

Category	Reactance-inducing	Reactance-reducing	Combined
Pharmaceuticals	0.40	0.21	0.19
Electronics & Tools	0.33	0.21	0.12
Apparel & Accessories	0.29	0.17	0.11
Unspecified	0.33	0.22	0.12
Other	0.28	0.23	0.05
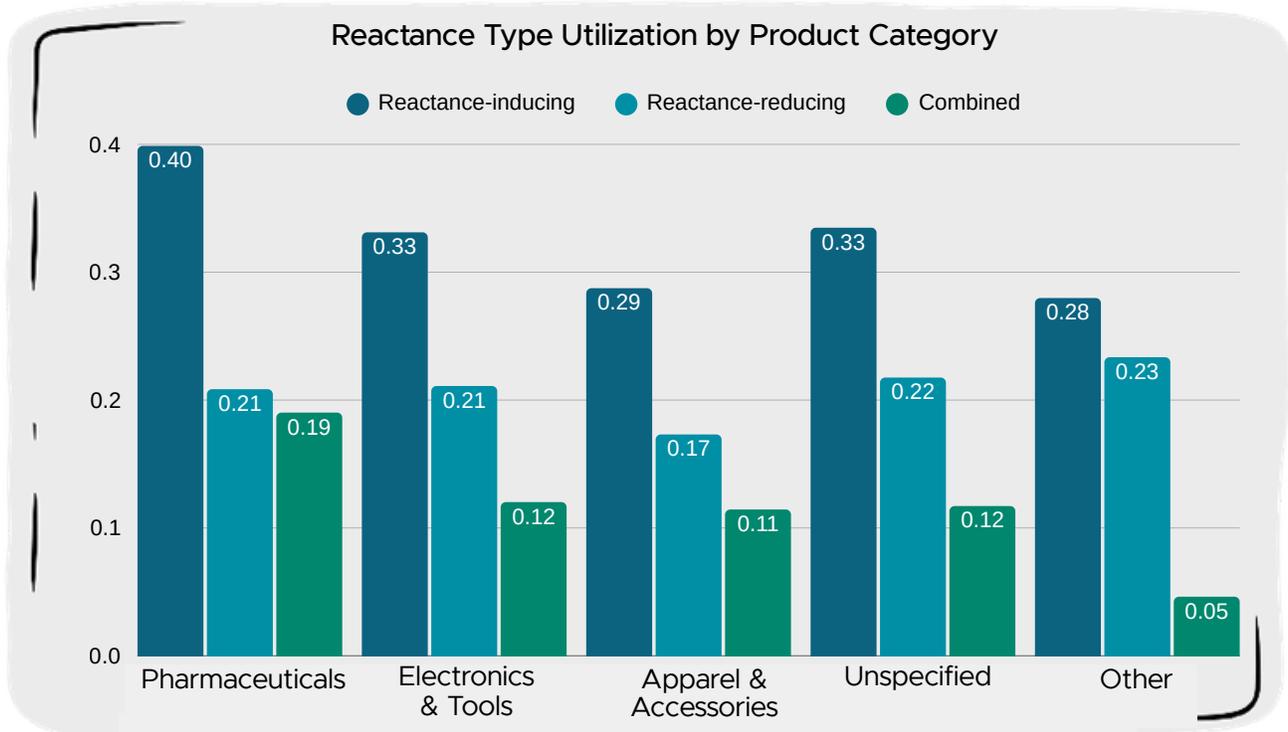
$F(4, 393) = 4.26$, $p = .002$, $\eta^2p = .04$; $F(4, 393) = 1.05$, $p = .379$, n.s.; $F(4, 393) = 3.56$, $p = .007$, $\eta^2p = .04$

When looking at the **reactance types utilized in campaigns based on product category**, the following key results were found:

- Overall, the messages contained **more reactance inducing elements** than reactance reducing features.

  - **Messages about pharmaceuticals** (M = 0.40, SD = 0.20) were most likely to have reactance inducing elements, **followed by messages about electronics/tools** (M = 0.33, SD = 0.23), **generic** (unspecified) categories (M = 0.33, SD = 0.18), **apparel/accessories** (M = 0.29, SD = 0.19), and other (M = 0.28, SD = 0.20).

- There was little variability (cross-category differences were not significant) in using reactance reducing elements across messages related to different categories (average M = 0.21, average SD = 0.13).

- Messages containing both reactance inducing and reducing elements were most used for the following product categories: **pharmaceuticals** (M = 0.19, SD = 0.22), followed by **electronics/tools** (M = 0.12, SD = 0.26), unspecified (M = 0.12, SD = 0.20), and **apparel/accessories** (M = 0.12, SD = 0.21) and other (M = 0.05, SD = 0.24).

Quantitative Content Analysis
Results Summary & Actionable Insights

REACTANCE REDUCING FEATURES ARE UNDERUTILIZED!

Despite the fact that nearly 90% of messages incorporated at least one reactance reducing feature, the overall use of these elements remains limited.

- Half of the reactance-reducing elements were **employed in fewer than 20% of the campaigns**.

- **Most reactance-reducing efforts** focused on low-controlling language and self-referencing, which, while effective, **represent only a fraction of the available strategies**.

- **This underutilization highlights an opportunity** to adopt underused yet persuasive techniques such as storytelling, social norm framing, gain-framed messaging, and others **to increase the impact of anti-counterfeiting campaigns.**

- Messages that incorporate both reactance-inducing and reactance-reducing features tended to skew heavily toward reactance-inducing elements. **This imbalance could lessen the effectiveness of campaigns** because messages heavy on reactance-inducing elements are **more likely to elicit defensive reactions where consumers resist the intended message.**

- Campaigns developed as partnerships between government agencies and non-profits combined reactance-inducing and reactance-reducing elements most frequently. However, messages created by non-profits alone tended to over-rely on reactance-inducing features, which may put consumer trust at risk. **Thus, multi-stakeholder partnerships can integrate diverse expertise and perspectives, resulting in more persuasive and impactful messaging.**

- Overall, the use of digital media, such as websites and social media, as channels of anti-counterfeit campaign messages is frequent. Diversifying the use of media channels by including **television and radio may help reach additional unique audiences,** especially in the communities and social groups where these types of media are prevalent.

- The use of reactance-inducing features in anti-counterfeit messages was the highest across all product categories. While some categories may benefit from authoritative, direct communication strategies that heighten reactance, some should **explore reactance-reducing alternatives that align with product (and brand) perceptions.**

Experimental Testing
Experiment 1: Reaction, Attitude and Intention

Reactance

The messages produced a **significant effect on participants' emotional reactance (anger)**, but not on participants' perceived threat to freedom.

- A*nger: F (2, 57) = 5.30, p = 0.008, $\eta^2 p$ = 0.16, observed power = 0.82*
- *Threat to freedom: F (2, 57) = 0.33, p = 0.719, $\eta^2 p$ = 0.01, observed power = 0.10*

Participants felt **least angry after viewing low reactance messages and co-reactance messages**, compared with high reactance messages.

- *Low reactance: M = 2.10, SD = 1.07*
- *Co-reactance: M = 2.65, SD = 1.48*
- *High reactance: M = 3.06, SD = 1.48,*
  $p_{low-high}$ *= 0.016, $p_{coreactance-high}$ = 0.036*

Anger reaction to low- and co-reactance messages were not statistically different.

Threat to freedom did not differ by condition.

- *Low reactance: M = 2.15, SD = 1.35*
- *Co-reactance: M = 2.46, SD = 1.39*
- *High reactance: M = 2.61, SD = 1.44*
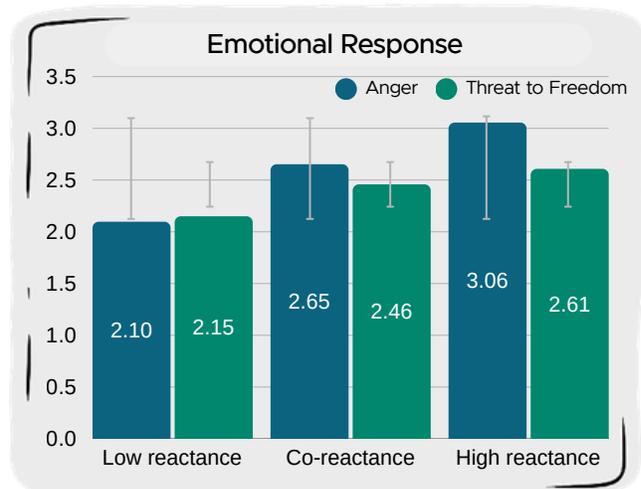
Multiple 2 (format) x 3 (reactance) x 4 (message repetition) mixed between-within-subjects analyses of covariance were performed with each outcome variable, including frequency of counterfeit purchase, message creativity, and message humor as control variables.

Intentions

Message (print, video) format and reactance level **did not affect participants' intentions to buy counterfeit goods** online or offline in the future. However, prior counterfeit buying behaviors positively predicted future counterfeit purchase intentions. **Participants who bought fakes at least once in the past were more likely to buy them in the future through both online and offline vendors** (stores, street, friends) than those who had never bought fakes.

- Bought counterfeit online (e-retail, social media): *M = 3.90, SD = 1.91*
- Bought counterfeit offline vendors*: M = 3.30, SD = 2.07*
- Never bought counterfeit online: *M = 1.99, SD = 1.29*
- Never bought counterfeit offline: *M = 1.61, SD = 0.97)*
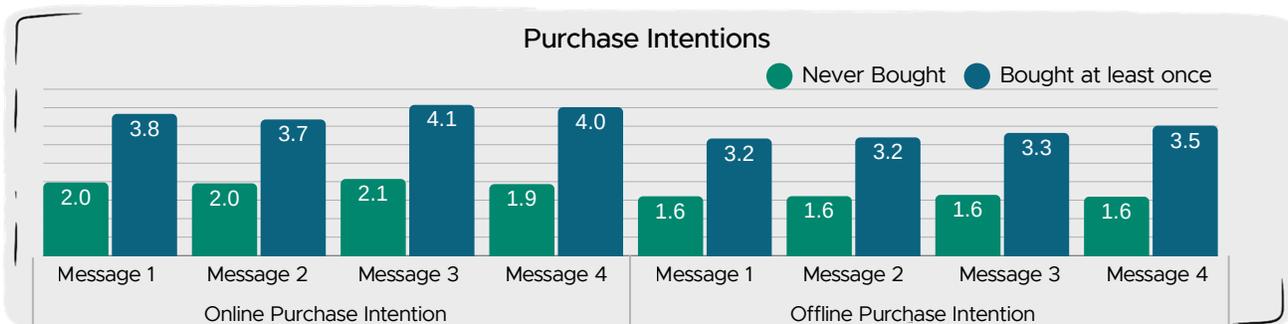
Experimental Testing
Pre-Test: Perceived Authority by Organizational Source

Participants were asked to evaluate the message authority based on four types of organizational sources: commercial company, government agency, non-profit non-government agency (NGO), and international organization.

We found the perceived authority of an **NGO was rated the lowest and was significantly lower** than the perceived authority of **commercial companies, government agencies, and international organizations**.

- *Government agencies: M = 5.63, SD = 0.76*
- *Commercial companies: M = 5.56, SD = 0.81*
- *International organizations: M = 5.44, SD = 0.88*
- *NGO: M = 5.21, SD = 0.98*

Perceived Authority by Organizational Source

Organizational Source	Value
Non-Profit NGO	5.21
International Organization	5.44
Commercial Company	5.56
Government Agency	5.63

(axis: 4.8 4.9 5.0 5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8)
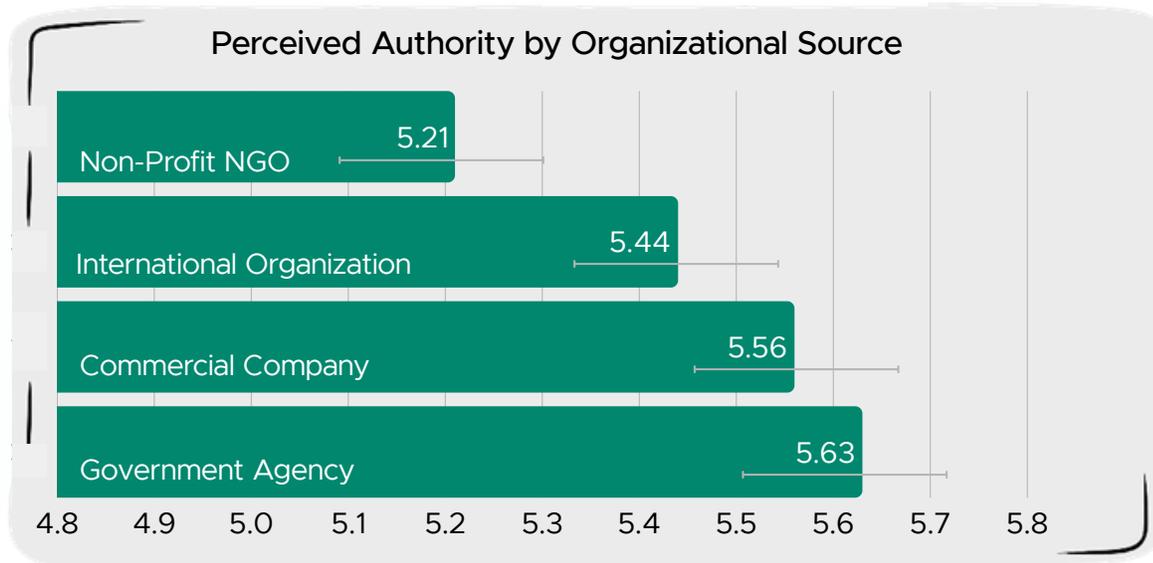
p-values = < 0.007, F (3, 363) = 9.57, p < 0.001, $\eta^2 p$ = 0.07, observed power = 0.99.

Examples:
Intellectual Property Owners Association, Alliance for Safe Online Pharmacies, American Apparel & Footwear Association

Examples:
International Court of Justice, World Trade Organization, World Health Organization, International Criminal Police Organization (INTERPOL),
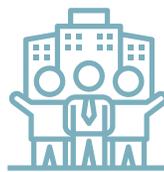
Examples:
Pfizer, Nike, GE, Ford, Procter & Gamble, Johnson & Johnson

Examples:
US Department of Justice, US Department of Homeland Security, US Patent & Trademark Office

Experimental Testing
Experiment 2: Reactance, Attitude, Intention, Credibility, and Risk

In Experiment 2, researchers added credibility and risk perceptions to the message characteristics and responses from Experiment 1 for evaluation across multiple aspects. The experiment used a 2 (format) x 3 (reactance) x 4 (source) x 2 (message repetition) mixed factorial design, and multiple mixed between-within-subjects analyses of covariance were performed with each outcome variable, including frequency of counterfeit purchase as a control variable.

Emotional Reactance

The format of the anti-counterfeit messages **had a significant effect on participants' emotional reactance (anger),** *F (1, 348) = 6.70, p = 0.01, $\eta^2 p$ = 0.02, observed power = 0.73.* Participants felt **less angry after viewing print messages** *(M = 4.13, SD = 1.93)* than video messages *(M = 4.61, SD = 1.90)*. No effect of the manipulation was found on the threat to freedom.
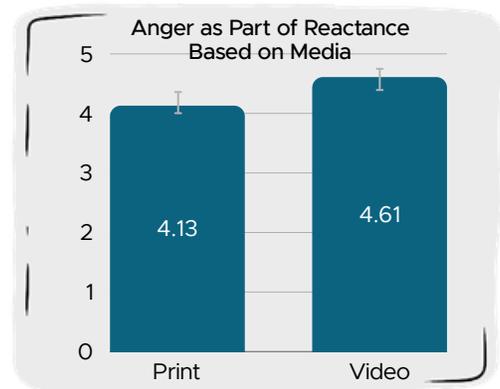
The frequency that a consumer knowingly buys counterfeit products plays a role in emotional reactance to the anti-counterfeit messages. **Frequent buyers** of counterfeits **exhibited greater anger toward messages** *(SD = 1.83), F (1, 341) = 6.12, p = 0.014, $\eta^2 p$ = 0.02, observed power = 0.70*, and threat to freedom *(SD = 1.05), F (1, 341) = 36.88, p < 0.001, $\eta^2 p$ = 0.10, observed power = 1.00,* than those who rarely buy counterfeits *(SD_{anger} = 1.89; $SD_{threat\ to\ freedom}$ = 1.32).*
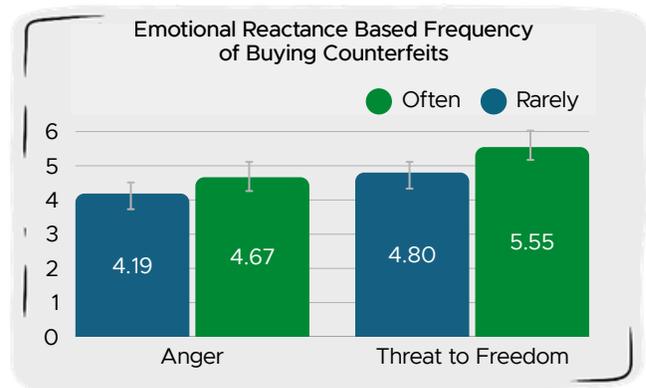
Anger as Part of Reactance Based on Media

Print	Video
4.13	4.61

Emotional Reactance Based Frequency of Buying Counterfeits

Legend: ● Often ● Rarely

Anger		Threat to Freedom	
4.19	4.67	4.80	5.55

Experimental Testing
Experiment 2: Emotion, Attitude, Intention, Credibility, and Risk

Message Attitude and Credibility

Participants liked messages that mainly included reactance inducing features significantly less than messages with mainly **reactance reducing features and messages with both types of features.** There was no significant difference between attitudes toward low and co-reactance messages.

- *Reactance inducing features: M = 5.35, SD = 1.93*
- *Reactance reducing features: M = 6.31, SD = 1.65*
- *Both types of features M = 6.11, SD = 1.64*

Frequent buyers of counterfeits exhibited greater message liking and perceived them as more credible than those who rarely buy counterfeits.

- *Frequent buyers: $Ma_{attitude}$ = 6.29, SD = 1.87; $M_{credibility}$ = 5.76, SD = 0.89*
- *Rare buyers: $M_{attitude}$= 5.57, SD = 1.51; $M_{credibility}$= 5.29, SD = 1.29*

Message Attitude by Reactance Feature

6.31	6.11	5.35
Low reactance	Co-reactance	High reactance

$p = 0.887$ $p < 0.001$ $p < 0.001$

F (2, 348) = 14.25, p < 0.001, η²p = 0.08, observed power = 0.99.

Message Attitude & Credibility by Reactance Feature
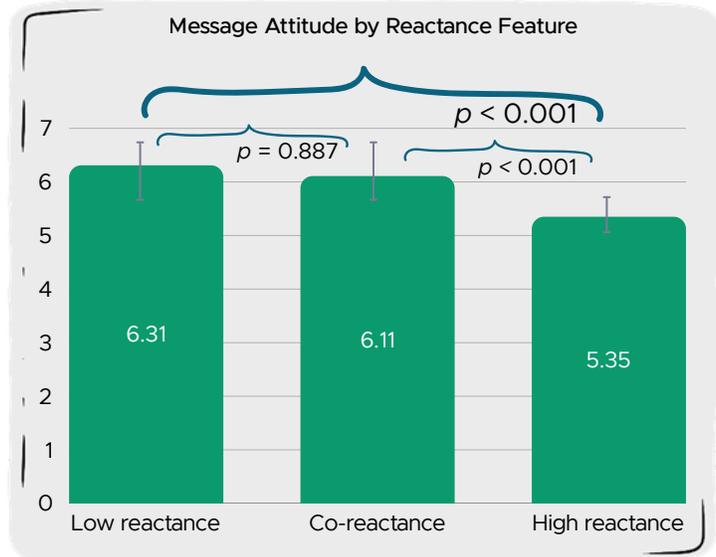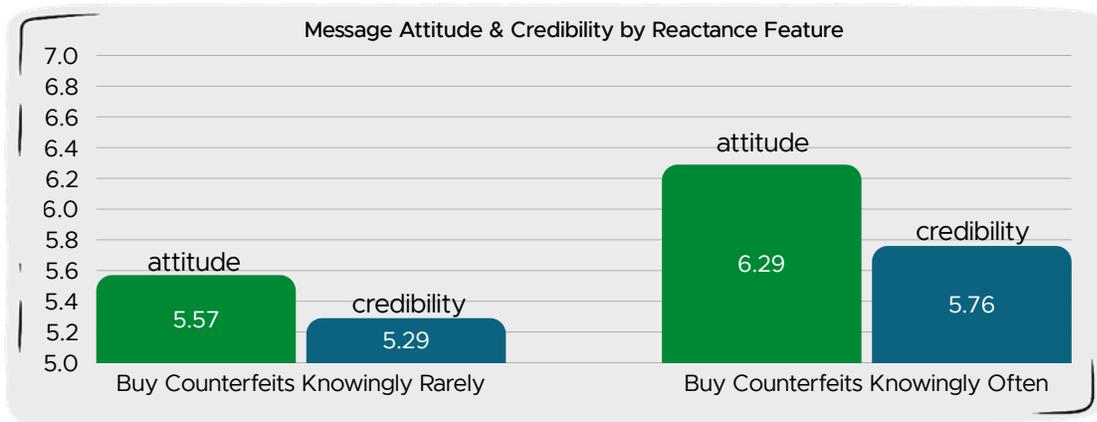
Attitude: F (1, 341) = 18.38, p < 0.001, η²p = 0.05, observed power = 0.99
Credibility: F (1, 341) = 17.70, p < 0.001, η²p = 0.05, observed power = 0.99

Experimental Testing
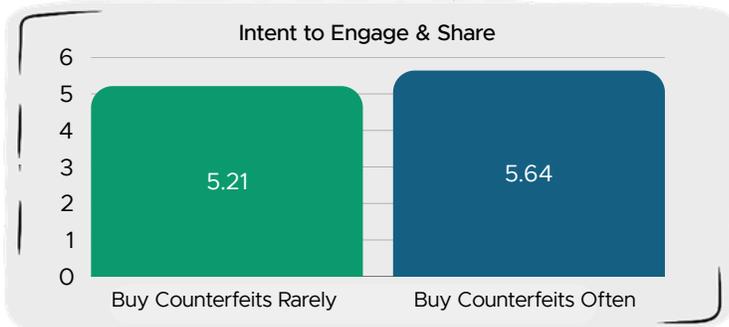## Experiment 2: Emotion, Attitude, Intention, Credibility, and Risk

Message Attitude

- Participants liked low reactance brands' and co-reactance NGOs' videos more than print messages in the same categories.
  - *Low reactance brand videos: M = 7.13, SD = 1.06*
  - *Co-reactance NGO videos: M = 6.52, SD = 1.58*
  - *Low reactance brand print: M = 5.68, SD = 1.82, p = 0.033*
  - *Co-reactance NGO print: M = 5.08, SD = 1.91, p = 0.005*

- High reactance print messages with government as a source were significantly less liked than low and co-reactance messages in the same category.
  - *High reactance print, government source: M = 4.90, SD = 1.90, p = 0.005*
  - *Low reactance print, government source (M = 6.28, SD = 1.90, p = 0.008)*
  - *Co-reactance print, government source: (M = 6.20, SD = 1.82, p = 0.044)*

- High reactance video messages from brands were also less liked than low and co-reactance messages in the same category.
  - *High reactance video, commercial company source: M = 5.07, SD = 2.12, p = 0.005*
  - *Low reactance video, commercial company source: M = 7.13, SD = 1.06, p = 0.001*
  - *Co-reactance video, commercial company source: M = 6.15, SD = 1.74, p = 0.029*

- Low reactance video messages without source attribution were liked more than high reactance messages.
  - *Low reactance video, no source: M = 6.78, SD = 1.49*
  - *High reactance video, no source: M = 5.15, SD = 1.53, p = 0.021*

- NGOs' co-reactance video messages were liked more than high reactance messages.
  - *Co-reactance video, NGO source: M = 6.52, SD = 1.58*
  - *High reactance video, NGO source: M = 4.93, SD = 2.30, p = 0.005*
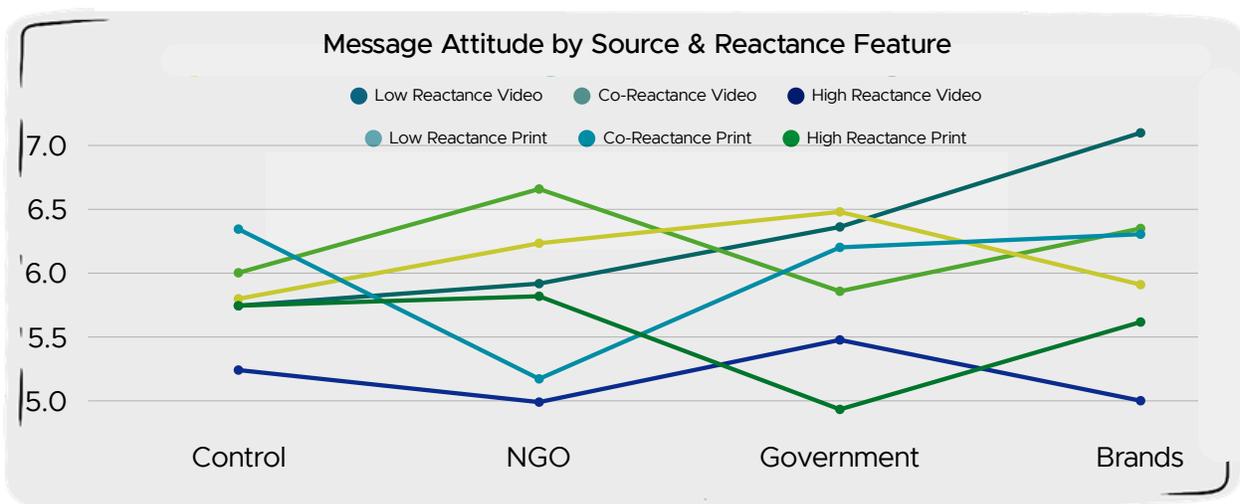
*F (6, 348) = 2.86, p = 0.01, η²p =0.05, observed power = 0.89.*

Experimental Testing
Experiment 2: Emotion, Attitude, Intention, Credibility, and Risk

Engagement Intention

- Participants expressed a **greater intention to engage with and share video messages** rather than print messages.
  - *Video: M = 5.47, SD = 1.15*
  - *Print: M = 5.26, SD = 1.26*

- Participants showed a **greater intention to engage with low-reactance** than high-reactance messages.
  - *Low reactance: M = 5.50, SD = 1.05*
  - *High reactance: M = 5.16, SD = 1.39*

Intent to Engage & Share (Print: 5.26, Video: 5.47)

F (1, 348) = 3.75, p = 0.055*, $\eta^2 p$ = 0.01, observed power = 0.49

- **Frequent buyers of counterfeits** exhibited a **greater intention** to engage with and share messages than those who rarely buy counterfeits.
  - *Often buy: M = 5.64, SD = 0.95)*
  - *Rarely buy: M = 5.21, SD = 1.18*

Intent to Engage & Share (Buy Counterfeits Rarely: 5.21, Buy Counterfeits Often: 5.64)

F (1, 341) = 14.85, p < 0.001, $\eta^2 p$ = 0.04, observed power = 0.97

Intent to Engage & Share (Low Reactance: 5.50, Co-Reactance: 5.43, High Reactance: 5.16), p < 0.042

F (2, 348) = 3.45, p = 0.033, $\eta^2 p$ = 0.02, observed power = 0.65

* marginal significance

Experimental Testing
Experiment 2: Emotion, Attitude, Intention, Credibility, and Risk

Counterfeit Buying Intention

- Participants showed a **greater intention to buy counterfeit products in the future after viewing low reactance** than high reactance messages.
  - *Low reactance: M = 5.32, SD = 1.16*
  - *High reactance M = 4.93, SD = 1.33*

- **Frequent buyers of counterfeits** exhibited a **greater intention to buy counterfeit** products in the future than those who rarely buy counterfeits.
  - *Intention to buy: Frequent buyer, M = 5.52, SD = 0.94; rare buyer, M = 4.92, SD = 1.26)*

Intent to Buy

$p < 0.012$

5.32	5.13	4.93
Low Reactance	Co-Reactance	High Reactance
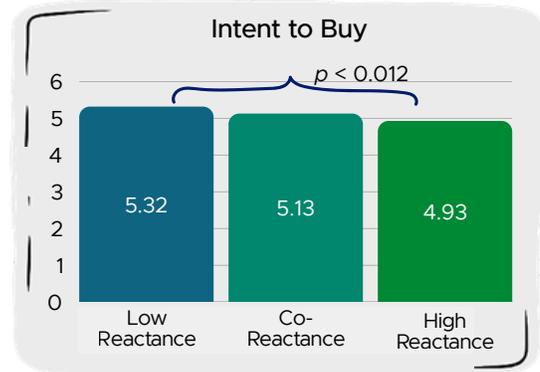
$F_{(2, 348)} = 4.22$, $p = 0.015$, $\eta^2 p = 0.02$, observed power = 0.74.

Risk Perception

- Participants who viewed **video** anti-counterfeit messages **rated the severity of the counterfeit buying problem slightly higher than** participants who viewed **print** anti-counterfeit messages.
  - *Severity of the counterfeit buying, video: M = 5.56, SD = 1.00*
  - *Severity of the counterfeit buying, print: M = 5.39, SD = 1.08*

Severity of Problem

5.39	5.56
Print	Video
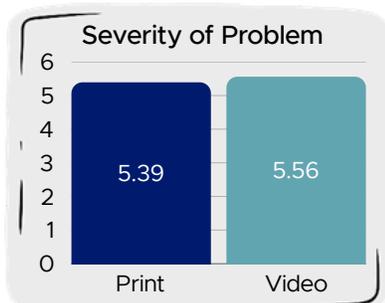
$F_{(1, 348)} = 3.81$, $p = 0.05^*$, $\eta^2 p = 0.01$, observed power = 0.50

Intent to Buy

4.92	5.52
Rarely Buys Counterfeits	Often Buys Counterfeits
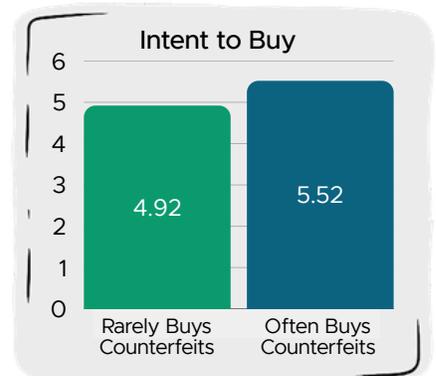
$F_{(1, 341)} = 27.95$, $p < 0.001$, $\eta^2 p = 0.08$, observed power = 1.00

- **Frequent buyers of counterfeits thought that the problem of buying fakes was more severe and they were more susceptible to it than those who rarely bought counterfeits.**
  - *Severity of counterfeit buying: Frequent buyer, M = 6.70, SD = 0.88: Rare buyer, M = 5.34, SD = 1.00*
  - *Susceptibility to counterfeit buying: Frequent buyer, M = 5.69, SD = 0.94: Rare buyer, M = 5.26, SD = 1.02*

Problem Severity & Buyer Susceptibility

● Buys Counterfeits Rarely, Knowingly ● Buys Counterfeits Often, Knowingly

Severity		Susceptibility	
5.34	6.70	5.26	5.69
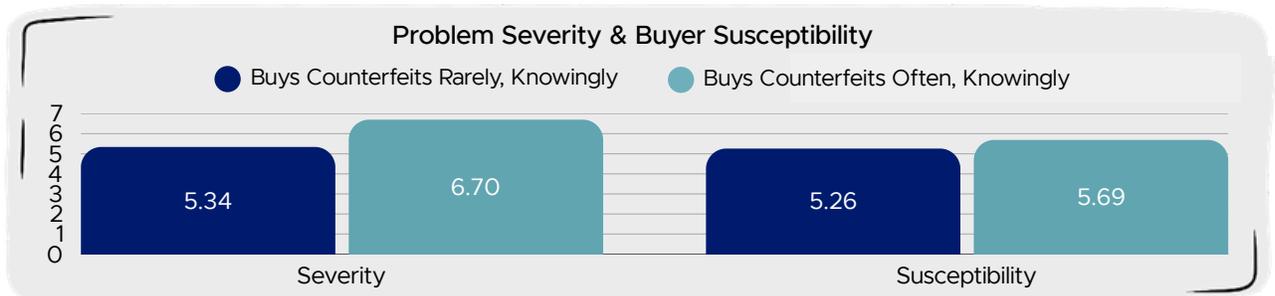
Severity: $F_{(1, 341)} = 15.80$, $p < 0.001$, $\eta^2 p = 0.04$, observed power = 0.98. Susceptibility: $F_{(1, 341)} = 20.60$, $p < 0.001$, $\eta^2 p = 0.06$, observed power = 1.00

*marginal significance

Experimental Testing
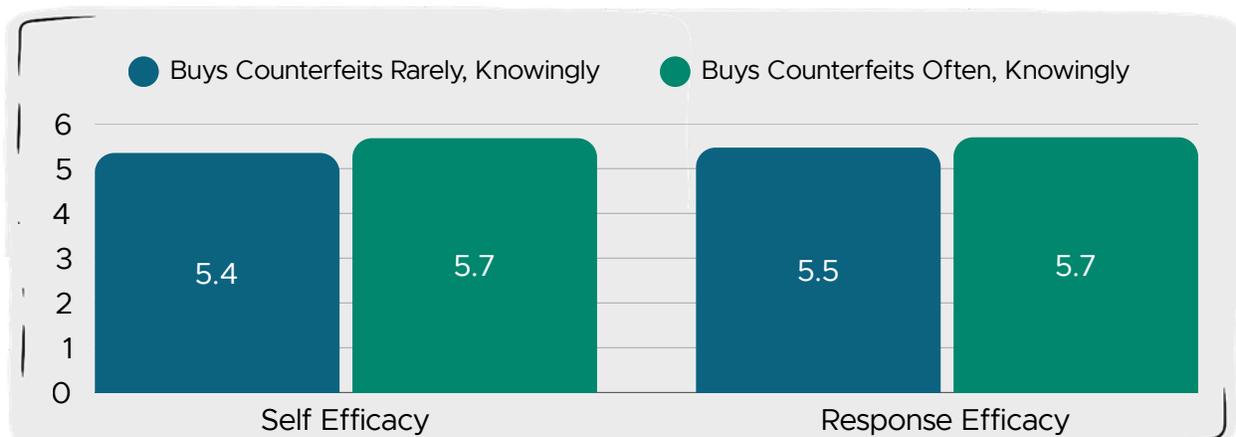## Experiment 2: Emotion, Attitude, Intention, Credibility, and Risk

Efficacy

- **Participants who viewed video** anti-counterfeit messages **expressed greater levels of self-efficacy** *(M = 5.55, SD = 0.93)* **and response efficacy** *(M = 5.72, SD = 0.87)* **than participants who viewed print** anti-counterfeit messages *(self-efficacy: M = 5.36, SD = 1.17; response efficacy: M = 5.55, SD = 1.08,*
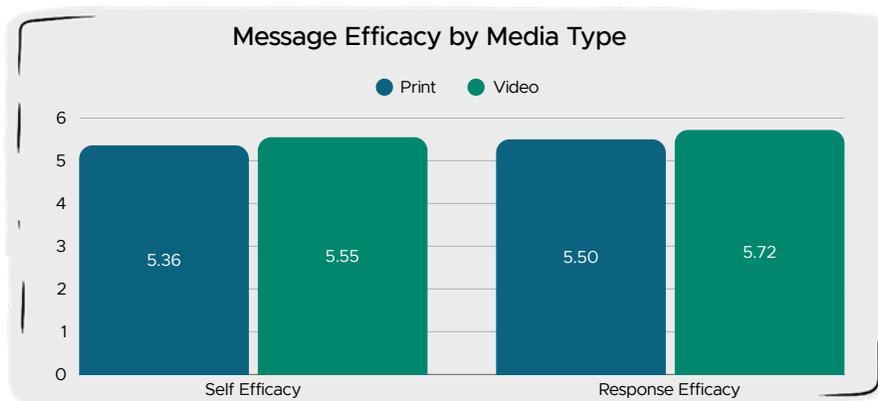
Self-efficacy: $F_{(1, 348)}$ = 3.64, p = 0.057*, $\eta2p$ = 0.01, observed power = 0.48; response efficacy: $F_{(1, 348)}$ = 8.52, p = 0.004*, $\eta2p$ = 0.02, observed power = 0.83.

- **Frequent buyers of counterfeits reported higher self-efficacy** *(M = 5.68, SD = 0.88)* and **response efficacy** *(M = 5.70, SD = 0.94)* **than those who rarely bought counterfeits** *(self-efficacy: M = 5.35, SD = 1.11; response efficacy: M = 5.47, SD = 1.02.*

Self-efficacy: $F_{(1, 341)}$ = 11.10, p < 0.001, $\eta2p$ = 0.03, observed power = 0.93; response efficacy: $F_{(1, 341)}$ = 7.63, p = 0.006, $\eta2p$ = 0.02, observed power = 0.79.

* marginal significance

Experimental Testing
Experiment 2: Emotion, Attitude, Intention, Credibility, and Risk

Response Cost Benefits and Protection Motivation

- Participants who **viewed video** anti-counterfeit messages assessed the **cost of responding to counterfeit-related situations to be greater** than participants who **viewed print** anti-counterfeit messages.
 - *Response cost, video: M = 5.51, SD = 0.97*
  - *Response cost, print: M = 5.34, SD = 0.93*

- **Frequent buyers of counterfeits** reported **greater response cost and response benefits** than those who rarely bought counterfeits. They also reported **higher motivation to protect themselves from the risks** of buying counterfeits than those who rarely purchased counterfeits.
  - *Frequent buyers: Response cost, M = 5.61, SD = 0.79; Response benefits, M = 5.67, SD = 0.78*
  - *Rare buyers: Response cost: M = 5.35, SD = 0.90; Response benefits: M = 5.39, SD = 0.85*
  - *Frequent buyers: Motivation to protect, M = 5.59, SD = 0.88*
  - *Rare buyers: Motivation to protect, M = 5.29, SD = 1.01*
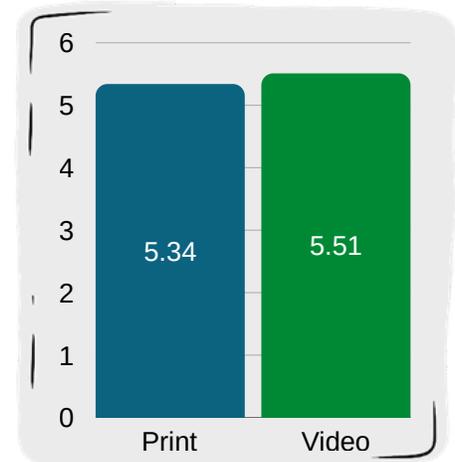
Response cost: F (1, 348) = 4.36, p = 0.038, $\eta^2 p$ = 0.01, observed power = 0.55
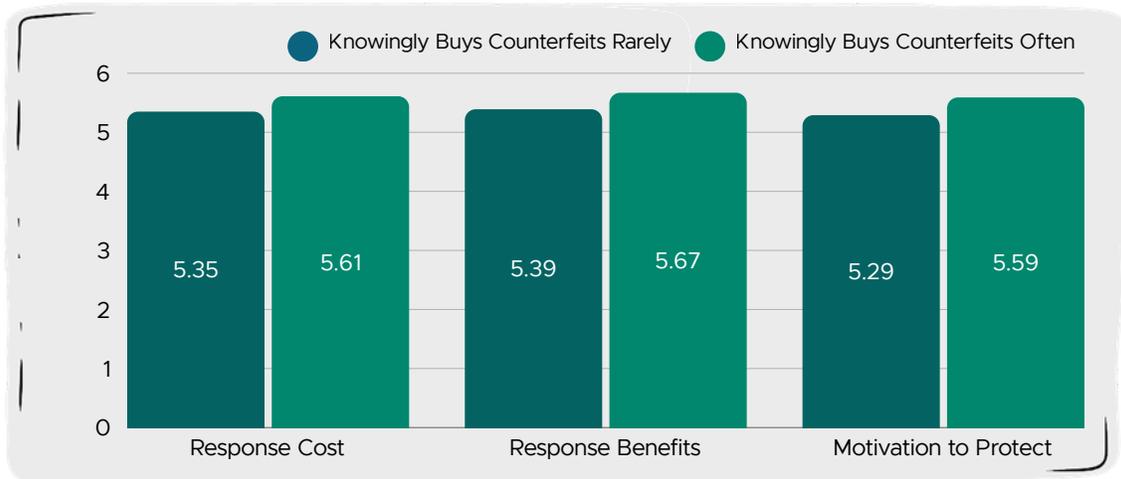
Rare buyers: Response cost: F (1, 341) = 9.76, p = 0.002, $\eta^2 p$ = 0.03, observed power = 0.88; response benefits: M = 5.39, SD = 0.85, F (1, 341) = 11.80, p < 0.001, $\eta^2 p$ = 0.03, observed power = 0.93; Rare buyers: Motivation to protect, M = 5.29, SD = 1.01, F (1, 341) = 9.38, p = 0.002, $\eta^2 p$ = 0.03, observed power = 0.86

Experimental Testing
Results Summary & Actionable Insights

When evaluating responses to print and video anti-counterfeiting messages **based on the type of reactance element,** the researchers found that:

- Messages that had a **greater presence of high reactance message elements** led to **greater anger** and higher likihood to **trigger psychological reactance**.

- Participants had more favorable responses to messages where low reactance elements were used. **Thus, future campaigns should prioritize low reactance or consider applying co-reactance strategies to encourage agreement rather than reinforcing resistance.**

- The perceived **threat to freedom remained relatively consistent** across all message conditions (high, co-, low). Campaign designers should **focus on reducing anger rather than overly restricting consumers' sense of independence**. **Structuring messages around positive emotional appeals is an effective strategy to achieve desired outcomes without inducing affective reaction.**

- **Purchase intentions were not affected by the reactance element or media used.** However, prior counterfeit buying behavior predictions do affect future buying behavior and **consumers who had previously purchased counterfeit goods were significantly more likely to do so again—**both online and offline. **Given this, campaigns should prioritize targeted interventions over format selection. Efforts should focus on behavior-based segmentation**, such as tailoring messages for past counterfeit buyers by **addressing their motivations and emphasizing risks** while reinforcing ethical consumption norms for those who have never purchased counterfeits.

Experimental Testing
Results Summary & Actionable Insights

Overall, **NGOs were perceived as the least authoritative** source of anti-counterfeit messages, compared with commercial companies (brands), government agencies, and international organizations. High-reactance video messages were the least liked when attributed to brands and NGOs and high-reactance print messages were less liked when attributed to government agencies. **Overall, message source mattered less than message format, reactance-related features, and participants' prior experiences of buying counterfeits.**

Anti-counterfeit messages in video format were found to be more powerful than print messages in eliciting both positive and negative reactions. Although this format leads to greater anger among the viewers and perceptions that buying originals is more effortful than buying fakes, **participants were more likely to share video anti-counterfeit messages online (digital advocacy), report greater seriousness of the counterfeit problem, believe that they can protect themselves from the risks of counterfeit buying, and exhibit lower counterfeit purchase intentions.**

Reactance-related features did not elicit greater anger or perceived threat to freedom among the viewers. However, they **affected attitude toward messages, with low-reactance messages being liked much more than high-reactance messages.** Thus, reactance reducing strategies may be useful for positive perceptions of anti-counterfeit campaigns.

Viewers expressed greater intentions to share low-reactance content online, compared to high-reactance content. **Viewing high-reactance messages led to lower purchase intentions.** Thus, **different reactance-related elements should be used for different communication strategies.** While low-reactance messages may be useful to increase awareness of the problem and online engagement, high-reactance strategies may help curb the counterfeit-buying behaviors.

Frequent counterfeit buyers exhibited greater reactance to anti-counterfeit messages **and confidence in being able to protect themselves** from the associated risks than those who rarely bought counterfeits. Frequent counterfeit buyers were more likely to purchase fakes in the future. However, frequent counterfeit buyers also **liked anti-counterfeit messages, considered them credible** and were open to **share these messages** online. They also **expressed greater problem severity, heightened vulnerability to related risks, and motivation to protect themselves from such risks.** These findings call for thorough consumer segmentation strategies in developing campaigns.

Conclusion

What We Learned
Overall Summary

The researchers conducted three studies to gain a better understanding of anti-counterfeit message content and how consumers respond to it. The first study was a content analysis of 398 messages from commercial companies (brands), NGOs, government agencies, and industry associations. We were interested in determining the extent to which these campaigns used reactance-inducing and reactance-reducing elements. **Reactance inducing messages** use elements that elicit anger and feelings of threat to personal freedom that make consumers resist persuasion. **Reactance reducing messages** have the opposite effect.

Our analysis showed that **anti-counterfeit campaign messages were most frequently found on channels** that required consumer effort to seek out information, **such as websites and print media.** Message content most frequently **focused on products with the greatest potential to harm consumers, i.e., pharmaceuticals and electronics.**

Reactance inducing message content was widely used in the messages we analyzed, **with loss frame** (or an emphasis on losing something) **and highly controlling language** being the most frequent reactance-inducing elements. Campaigns from **commercial companies were the least likely to use reactance-inducing** and more likely to use reactance-reducing elements. The prevalence of reactance-inducing elements – especially among messages from government agencies, non-profits, and partnerships—**suggests that message sources view inducing fear about the consequences of counterfeit purchasing as an effective communication strategy**. On the other hand, **most anti-counterfeit messages had at least one reactance reducing feature, with self-referencing** (highlighting personal experience with counterfeits) being most frequently used These findings suggest that **message creators see a need to balance fear-inducing and fear-reducing content.**

Researchers conducted two experiments following the content analysis to analyze how consumers perceive and respond to print and video anti-counterfeit messages that use high-low-co-reactance messages. After viewing these print and video messages, **participants evaluated their anger and threat to freedom levels, attitudes toward the messages, online engagement, and purchase intention**.

Consumers felt angrier after seeing high-reactance messages, but the reactance level did not affect the perceived threat to freedom. Message format (video or print) had no impact on participants' future counterfeit purchase intention, but those
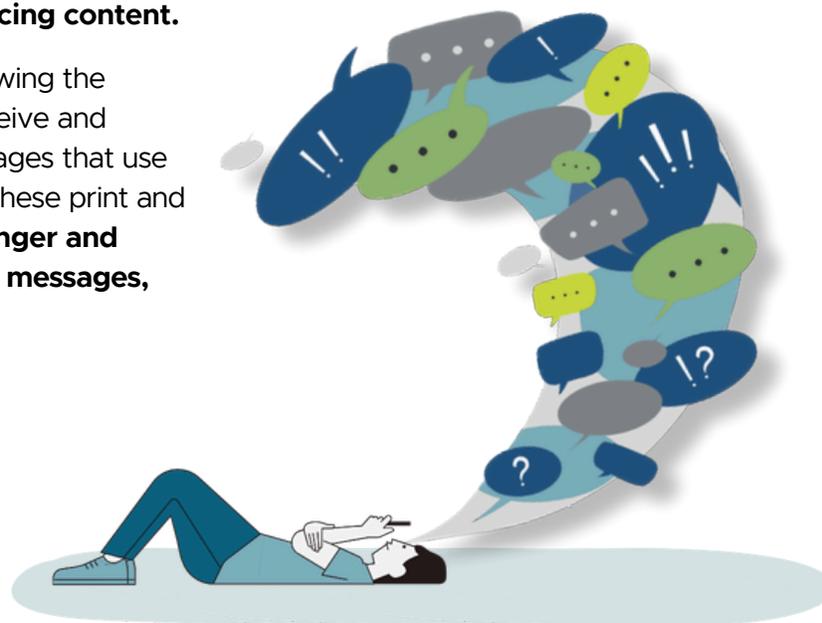
who had frequently purchased counterfeits were more likely to intend to do so in the future. This finding suggests that it may be difficult to persuade frequent counterfeit buyers to quit buying counterfeits. **Brands, government agencies, NGOs, and industry associations must work together to create message content that deters consumers from future purchases without inciting anger and other negative emotions.**

The second experiment built on the previous one and **added three message sources to measure consumers' anger and threat to freedom levels, attitudes toward the message's online engagement, purchase intention, message credibility, and risk perceptions.** Included were commercial companies, government, NGOs and international organizations as message sources, as well as a control condition with no source indicated.

Unlike the first experiment, **message format influenced emotional responses, with video messages eliciting greater anger**. **Frequent buyers reported higher anger and perceived threat to freedom** compared to non-frequent buyers, which may indicate underlying guilt associated with counterfeit purchases. Surprisingly, **these consumers preferred messages that induced psychological reactance**, rating them as more credible and appealing. This suggests that **confrontational messaging may resonate with habitual buyers** by reinforcing autonomy or defiance. Future research should examine the mechanisms underlying this effect.

When the message source was considered, **low and co-reactance video messages by NGOs were most liked.** In general, regardless of source or format, **high reactance messages were least liked.**

The results on engagement with anti-counterfeit messages were interesting. Overall, **consumers had a greater intention to engage with and share low-reactance messages, and frequent (vs. rare) buyers overall had a higher intention to share messages.** The message format influence on purchase intention contradicts Experiment 1; that is, the format did not influence the **intention** in the first experiment, but in Experiment 2— it **was higher for video messages.** In general, purchase intention was higher after viewing low reactance inducing messages, but again, frequent buyers had greater purchase intention. **Perhaps low reactance messages are less threatening to consumers, thus lowering cognitive and emotional barriers to purchasing counterfeits.**

Anti-counterfeit messages elicited different risk perceptions. For example, the perceived severity of buying counterfeits was higher for video (vs. print) and frequent buyers. Simultaneously, viewing a video anti-counterfeiting message made consumers feel more confident in their ability to protect themselves (self-efficacy) and respond to the risks presented by counterfeits (response efficacy). Frequent buyers reported both higher self-efficacy and response efficacy. **This suggests that their past experiences purchasing counterfeits have increased their confidence levels. However, viewing video messages led to heightened perceptions of response costs.** Frequent buyers were more likely to believe that response costs, benefits, and protection motivations were greater. **This presents a contradictory relationship: they knowingly and frequently buy counterfeit products, yet they believe they can protect themselves from subsequent dangers.**

Appendix A

Persuasive Message Elements
Reactance Inducing

Graphic Content
Graphic images with vivid, often negative visuals and explicit details.

Highly Controlling Language (HCL)
Dogmatic, intense, explicit, controlling, domineering language with an explicit intent to threaten one's sense of autonomy and freedom.
- Words and phrases, such as "don't," "you must," and "stop" are indicative of HCL (Bensley & Wu 1991; Buller et al., 1998; Dillard et al., 1996; Grandpre et al., 2003; McLaughlin et al., 1980; Miller et al., 2007; Quick et al. 2013).

Identity Threat
An attack on one's "self-esteem, self-efficacy, continuity, or distinctiveness" (Murtagh, 2012, p.319).
- For example, "Fake people buy fake stuff."

Loss Frame
Part of the prospect theory that explains how individuals estimate risks during the decision-making process (Kahneman & Twersky, 1979). Loss frame refers to emphasizing losing something or someone in a persuasive message.
- For example, "Counterfeit goods cost the U.S. government $500 billion every year" and "Using counterfeit medications can cost your life."

Negative Emotional Appeal
According to the two-dimensional approach to define emotion (Kensinger, 2004; Yik et al., 2023):
- One emotional dimension is valence, where message evaluation ranges from negative to positive.
- Another dimension is arousal, with responses ranging from calm/not arousing to exciting/very arousing (Gardner & Leshner, 2015; Shuman et al., 2023; Yousef et al., 2021; Zheng, 2020).
To evaluate negative emotional appeal, messages were coded as containing or not containing elements that induce negative emotions (negative valence). Such elements may include references to economic loss, death, illness, environmental disasters, crime, and other things that elicit aversive psychological reactions.

Social Identity Threat
An attack on one's belonging to a social group (Branscombe et al., 1999).
- For example, "Fake women buy fake products" is an attack on one's belonging to a gender group.

Persuasive Message Elements
Reactance Reducing

Descriptive Norms
Descriptive norms are perceptions of the extent to which others engage in a behavior (Lapinski & Rimmal, 2005). When most people are perceived as behaving in a certain way (e.g., avoiding buying counterfeit products), it motivates others to follow that perceived social norm in an unobtrusive way, e.g., it does not increase reactance to a message.

Epilogues
A part of a message, plot, or narrative that aims to revert attention to the prosocial behavior (e.g., refraining from buying counterfeits) at the end of the story (Rosenberg & Siegel, 2018; Staunton, Alvaro, & Rosenberg, 2020).

Gain Frame
Part of the prospect theory that explains how individuals estimate risks during the decision-making process (Kahneman & Twersky, 1979). Gain frame refers to benefits that one can obtain when refraining from a risky behavior, such as buying counterfeits.
- For example, "Buying originals can save your life," "Buying authentic products helps stop crime," "Save your health using originals," and "Original products will last longer than fakes."

Injunctive Norms
Injunctive norms are perceptions to what degree other people approve of or accept a behavior (Lapinski & Rimmal, 2005). When most people are perceived as not approving or accepting a behavior (e.g., "Most think that buying counterfeits is bad"), it may discourage others from engaging in it.

Inoculation
This is a technique that provides individuals with arguments to support desirable attitudes and behaviors. Inoculation persuasive messages help individuals defend why they choose to buy authentic products (Rosenberg & Siegel, 2018; Staunton, Alvaro, & Rosenberg, 2020).

Low Controlling Language (LCL)
Implicit, indirect, polite, and suggestive rather than imperative (Grice 1975). A strategy common for non-directive communication, where threat to freedom and persuasive intent are subtle and thought to be less likely to elicit reactance (Miller et al., 2007).
- May include words and phrases such as "perhaps consider," "should," and "maybe," which are used to make suggestions in a manner that is implicit and acknowledges individual freedom in making decisions.

Narrative
Narrative is the use of storytelling techniques. It is "a representation of connected events and characters that has an identifiable structure, is bounded in space and time, and contains implicit or explicit messages about the topic being addressed" (Kreuter et al., 2007).

"Other" Referencing

"Other" referencing emphasizes the influence of social norms. The other-referencing strategies employ human connections, such as perceived similarity with a message source (Silvia, 2005), which provide an avenue to overcome reactance and foster compliance (Rosenberg & Siegel, 2018; Staunton, Alvaro, & Rosenberg, 2020). For example, "None of your friends would ever buy counterfeit products."

Overhead Communication

This strategy is used in persuasive messages to appeal to the secondary audience that may influence the decisions of the primary audience (Rosenberg & Siegel, 2018; Staunton, Alvaro, & Rosenberg, 2020). For example, a message to teenagers about the dangers of buying drugs on social media may appeal not only to children but also to their parents, teachers, and so forth.

Positive Emotional Appeal

As noted earlier, the two-dimensional approach to emotion defines it through: valence (message evaluation ranges from negative to positive) and arousal (ranging from calm/not arousing to exciting/very arousing) (Gorn et al., 2001).

- To evaluate positive emotional appeal, messages were coded as containing or not containing elements that elicit positive emotions (positive valence). These elements may include humor, references to saved lives, accomplishments of law enforcement and government agencies in fighting against counterfeiting.

Post-Script

Refers to providing an individual with a choice to engage or not to engage in risky behavior at the end of a persuasive message (Rosenberg & Siegel, 2018; Staunton, Alvaro, & Rosenberg, 2020).

"Reversed" Reactance

"Reversed" reactance is a strategy that uses consumers' negative emotions to persuade them to reduce risky behaviors (Rosenberg & Siegel, 2018; Staunton, Alvaro, & Rosenberg, 2020). For example, "Buy fakes, help increase environmental pollution!" "Buy fakes, help criminals succeed!"

Self-Referencing

Self-referencing in persuasive messages highlights personal experiences with an issue (e.g., "This happened to me") and the consequences one suffered. Self-referencing in a persuasive message refers to the message character sharing their own experiences rather than referring to others (Burnkrant & Unnava).

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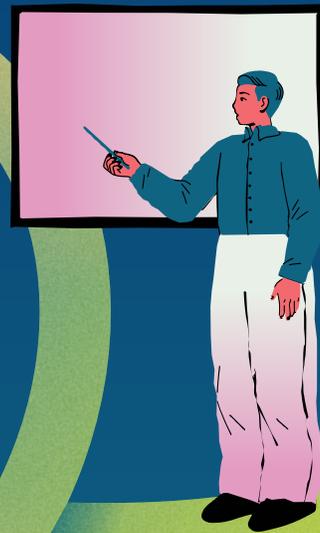
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About A-CAPP

Center for Anti-Counterfeiting
and Product Protection
MICHIGAN STATE UNIVERSITY

OUR **MISSION** Identify and examine the complex issue of trademark counterfeiting from a practical, actionable, academic nexus/viewpoint, working collaboratively with brand protection practitioners and communities worldwide.

OUR **VISION** Combat trademark counterfeiting and illicit trade in goods and services through our research, eduction and outreach.

OUR **TEAM** We are a small and committed team passionate about brand protection and anticounterfeiting. We engage in partnerships with others in the brand protection community for funding and engagement.

OUR **VALUES** As a public, research-intensive, land-grant university funded in part by the State of Michigan, MSU's mission is to advance knowledge and transform lives. At the MSU A-CAPP Center, these same values are at the core of what we do in the brand protection field. Through our vision, we live out these values by helping create tools and practices in the global context to address problems and risk caused by the illicit trade in goods and services. We also help train a diverse cadre of current and future industry professionals.

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