



## Experiments in Color For Web-Based Surveys

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### The Web: New Opportunities

Web has created possibilities not available in other modes:

- Dynamic
- Graphical images
- Media delivery
- Color

## But...

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They are not without impacts on respondents. For example:

- Couper et al. (2004), “Picture This.” *Public Opinion Quarterly*, 68:2, 255-266
  - Images impact reporting
- NSF experiments
  - Everything we do to the screen can have an impact on respondents

## The Issue of Color

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Typical Concerns:

- Readable
- Attractiveness (whatever that means)
- Browser safe
- Convey meaning (e.g., emphasis and error messages)

But are there other issues?

## Genesis for This Experiment

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### Waiting for the Web: How Screen Color Affects Time Perception

- Gorn et al. (2004) *Journal of Marketing Research*, XLI, 215-225
- Tested levels of relaxation and perceived download times on web pages with differing backgrounds
- Results show blue background produced greater levels of relaxation and perception of shorter download time

## The Experiment

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### Included in a web survey of college students

- Principal Investigator: MJ Paschall, Ph.D. Prevention Research Center
- Research federally-funded through grant from the National Institute on Alcohol Abuse and Alcoholism (NIAAA)
- Sample included random sample of 2125 students
- Respondents were randomly assigned to one of two color treatment groups
- Overall response rate of 28.2%
  - No significant differences across color groups

## The Screens

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### Blue Background

 **Prevention Research Center**  
PACIFIC INSTITUTE FOR RESEARCH AND EVALUATION

**Frequently Asked Questions**  
Email us at [collegealc@msisurvey.com](mailto:collegealc@msisurvey.com)  
Call toll free 1.866.674.3375

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**Demographics**

**What is your sex?**

Male

Female


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Next Screen

## The Screens

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### Pink Background

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**Demographics**

**What is your sex?**

Male

Female

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Next Screen

## The Hypotheses

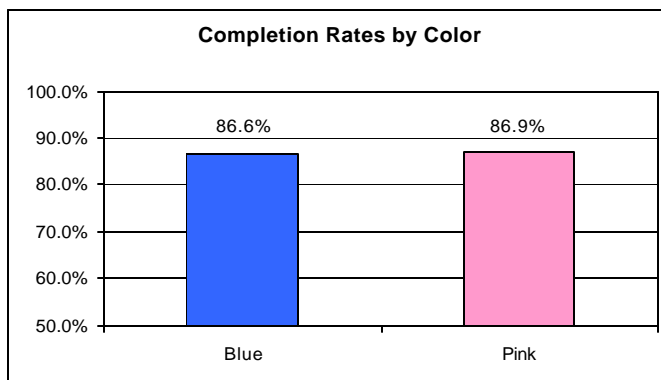
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1. Pink background will create more breakoffs.
2. Blue background creates an impression of a shorter survey and Pink background a longer survey.
3. Pink background influences respondents to select more aggressive/risk-oriented answers and blue background less so.
4. Color impacts will vary by gender.

## Breakoffs/Completion Rate

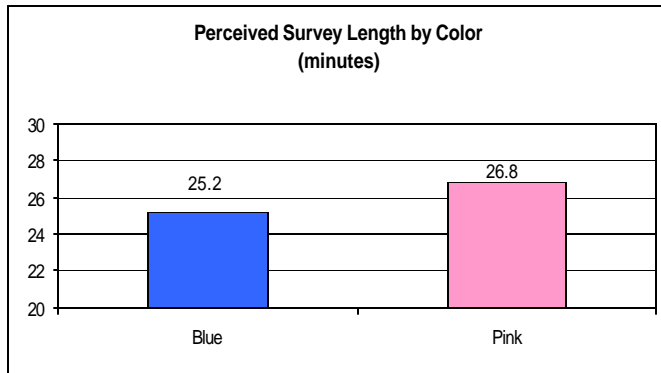
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No Significant Differences Found Between Groups



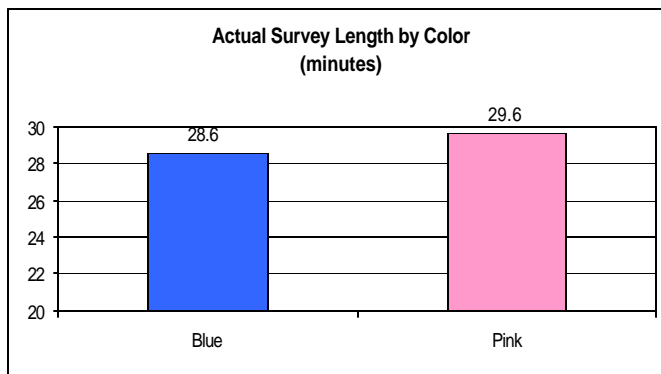
## Perceived Survey Length

The blue background condition produced a lower perceived time to complete the survey although the difference was not significant.



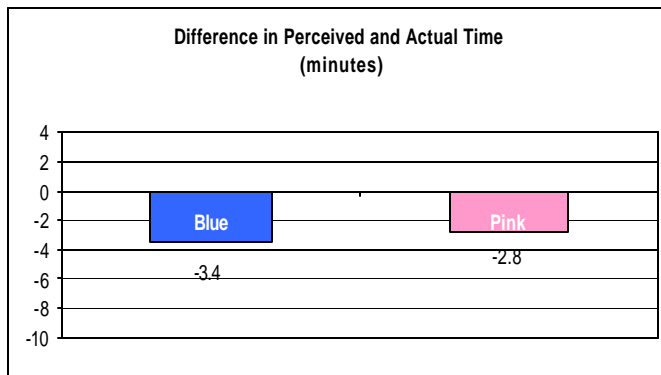
## Actual Survey Length

The average time to complete the survey was lower for the blue background condition although the difference was not significant.



## Difference in Perceived and Actual

Blue background condition produces larger difference indicating respondents perceived a shorter survey although the difference is not significant.



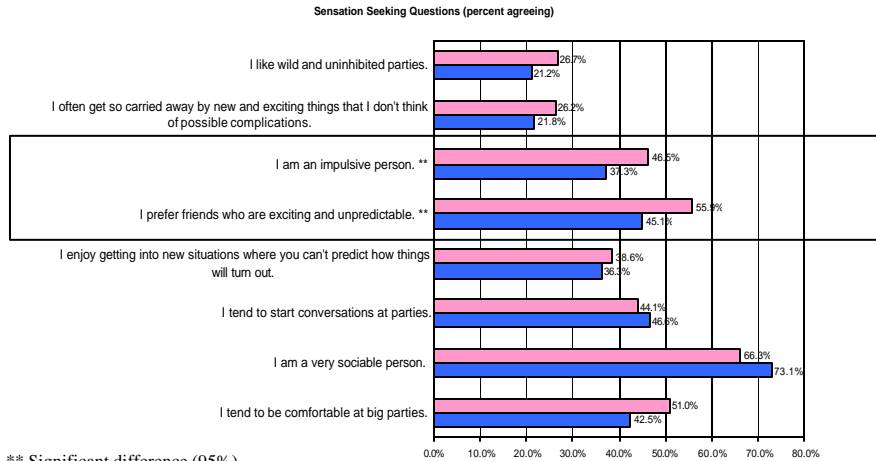
## Aggressive/risk-oriented Responses

Aggressive/risk-oriented responses measured in three groups of questions

- Sensation Seeking
- Alcohol Expectancies
- Changes in Alcohol-Related Behaviors

## Sensation Seeking

6/8 items show more aggressive/risk-oriented responses from pink background condition but only 2 are significant



## Alcohol Expectancies

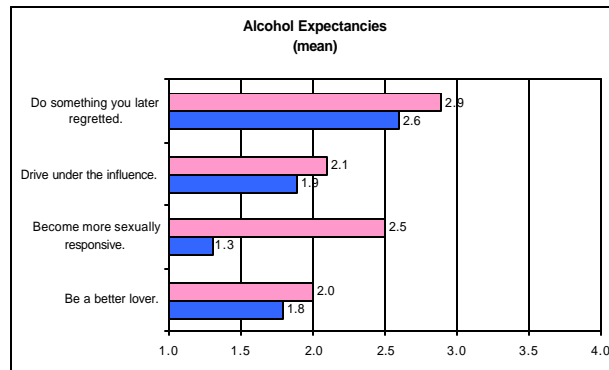
25 items included in this section

- 20 items show more aggressive/risk-oriented responses from the pink background condition.
- 4 items show statistically significant differences



## Alcohol Expectancies

Statistically significant differences



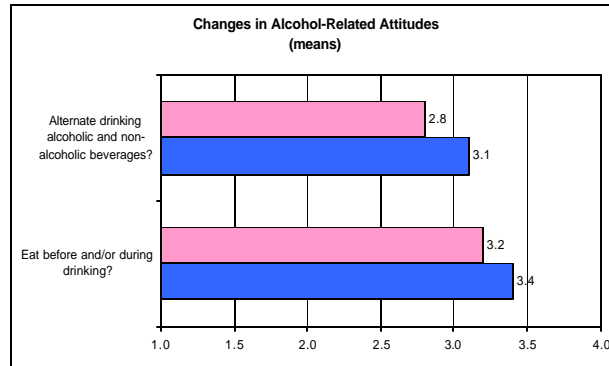
## Changes in Alcohol-Related Attitudes

19 items included in this section

- 12 items show more aggressive/risk-oriented responses from the pink background condition.
- 2 items show statistically significant differences

## Changes in Alcohol-Related Attitudes

Statistically significant differences



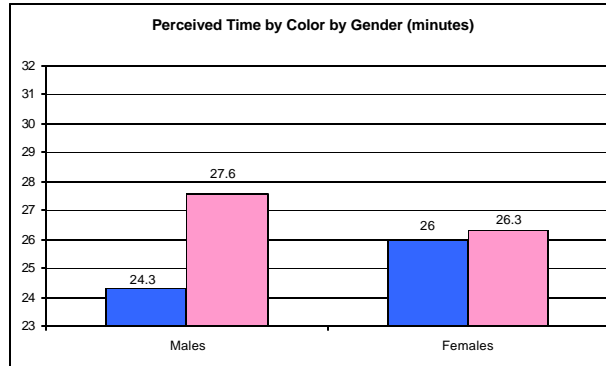
## Color Impacts by Gender

Breakdown of results from prior section by gender

- Colors used were inherently “gender loaded” so it was expected the results would differ by gender
- Very small sample sizes

## Color Impacts by Gender

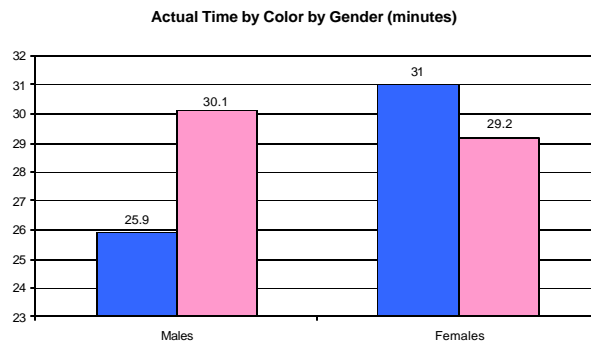
Blue background perceived shorter for both genders



Neither difference was statistically significant

## Color Impacts by Gender

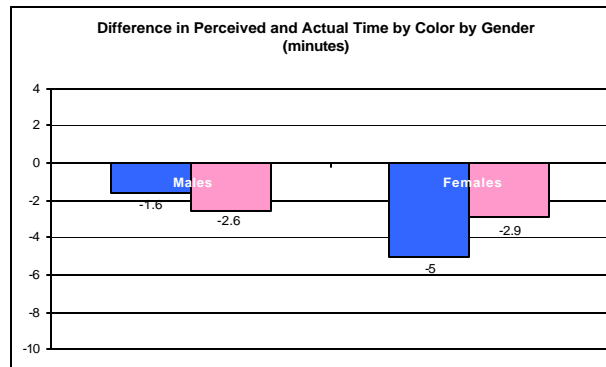
Blue background was shorter for males where pink background was shorter for females.



Neither difference was statistically significant

## Color Impacts by Gender

Difference for males was greater for pink/red background where the blue background had the greatest difference for females.

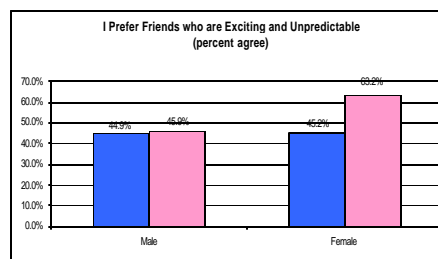
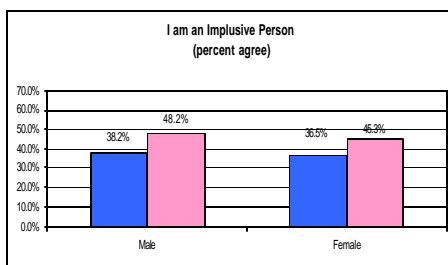


Neither difference was statistically significant

## Color Impacts by Gender

### Sensation Seeking

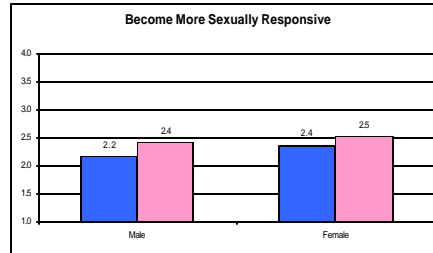
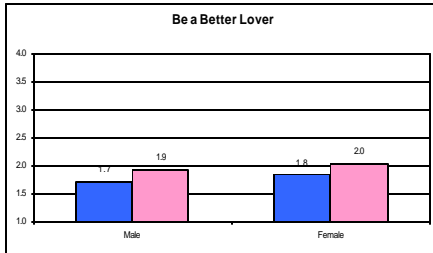
- 2 items resulted in statistically significant differences overall.
- 1<sup>st</sup> item does not show significant differences when split by gender.
- 2<sup>nd</sup> item does show significant differences for females.



## Color Impacts by Gender

### Alcohol Expectancies

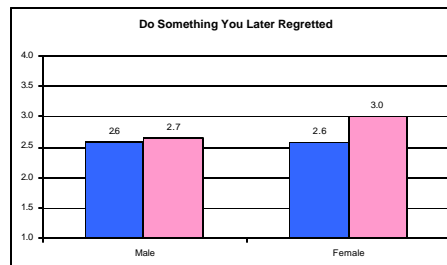
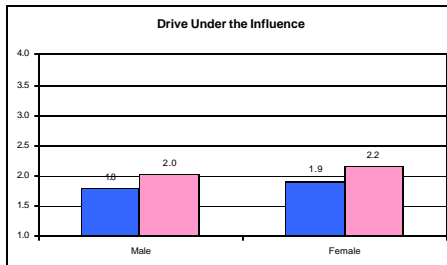
- 4 items resulted in statistically significant differences overall.
- 1<sup>st</sup> and 2<sup>nd</sup> items do not show significant differences when split by gender.



## Color Impacts by Gender

### Alcohol Expectancies

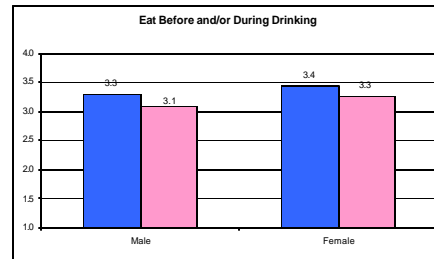
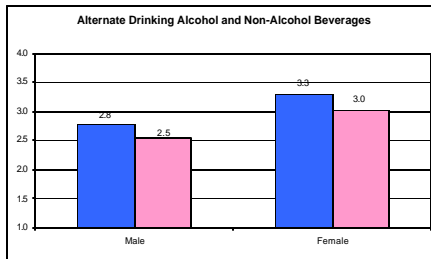
- 3<sup>rd</sup> item does not show significant differences when split by gender.
- 4<sup>th</sup> item does show significant differences for females.



## Color Impacts by Gender

### Changes in Alcohol-Related Attitudes

- 2 items resulted in statistically significant differences overall.
- 1<sup>st</sup> item does show significant differences for females.
- 2<sup>nd</sup> item does show significant differences for males.



## Discussion: Hypothesis #1

Pink background will create more breakoffs.

- No significant difference in completion rates across colors
- Hypothesis not supported by data

## Discussion Hypothesis #2

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Blue background creates an impression of a shorter survey and pink background a longer survey.

- Relationship is in the expected direction but not significant. Hypothesis rejected.

## Discussion: Hypothesis #3

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Pink background influences respondents to select more aggressive/risk-oriented answers and blue background less so

- A few items where statistically significant differences are seen across background colors
- Pink backgrounds produced a higher reporting of aggressive/risk-oriented answers although many differences were not significant

## Discussion: Hypothesis #4

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Color impacts vary by gender.

- Very small number of cases
- Effect seems to exist, however results were mixed
  - More research needed to answer this question

## Conclusions

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Background color seems to have an impact on perceived length and response patterns for this population.

- Effect is weak and seems to vary by gender
- Results suggest we should choose background colors with care when conducting web-based surveys
- Survey also included a white background condition. Data not fully analyzed but seems to fall in the middle for most measurements
- More research is needed using stronger colors and with different populations



## Thank You

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### Contact Information:

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