

Aroma of Chocolate: Effects on Affect and Creativity

Chiara Ostrin

Advisor: Dr. Maryalice Citera

Funding for this project was provided by a SUNY New Paltz Student
Association research grant.

Past Literature

Smell and affect

- Pleasant scent increased helping behavior and positive affect. Baron (1997)

Smell and aggression

- Results varied by sex; but concluded that smell does affect aggressive behavior. Baron (1980)

Chocolate and Positive Affect

- Chocolate consumption increases positive affect immediately after eating. Macht & Dettmer (2006)



Research Purpose

- Aromas affect behavior and mood
 - Beneficial for high stress environments such as work and school
- Gap in literature
 - Research done on aromatherapy
 - No research on chocolate aroma
 - Effects on affect and creativity



Hypotheses

Chocolate scent will:

1. Increase PA
2. Decrease NA
3. Increase creativity



Method

- Participants
 - N= 50
 - 33 Females, 15 Males, and 3 Other
 - Some received credit towards Psychology subject pool credits and others an \$8 amazon gift card
- Measures
 - Positive Affect Negative Affect Schedule (PANAS)
 - PA: Excited, strong, proud, alert, determined
 - NA: listless, hostile, nervous, worried, sad, tired



Examples of responses that are too vague to be accepted:

List as many as six possible uses

1. **CHAIR** (used for sitting)

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

2. **WATCH** (used for telling time)

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

To have fun with
To break
To make something
As a weapon (except chair, safety pin)
To burn (except chair, milk carton)
To get

As a game
To use the parts
To throw it
To hit with (except chair)
To throw away

Examples, item by item:

1. **CHAIR** (used for sitting)

Acceptable

Use as a desk (table; but not both)
As a hurdle
To fence in baby
To tame lion (or other animal)

As a doorstop
In juggling act
Weapon in the movies
To stand on to reach something

Unacceptable

Something to paint

To stand on (too vague)

2. **WATCH** (used for telling time)

Acceptable

Band for a bracelet
As a compass
As a decoration

Paperweight
To start fires

Methods (cont'd)

- Procedures

- Two rooms of the exact same dimensions and set-up
 - Each room received a spray of aroma (chocolate or control)
 - Amount was kept equivalent per square foot
- Scent was sprayed immediately before subjects arrived
- Participants were exposed to scents from 15 minutes to 30 minutes



Methods (cont'd):

- Design

- Independent Variable

- Aroma

- Chocolate vs. Neutral

- Dependent Variables

- Positive Affect

- Negative Affect

- Creativity Score



Results: Hypothesis 1

Hypothesis 1--**Not supported**

($t(48) = .086, p = .466$)

Mean Positive Affect did not differ by aroma.

Chocolate = 29.24

Control Group = 29.44



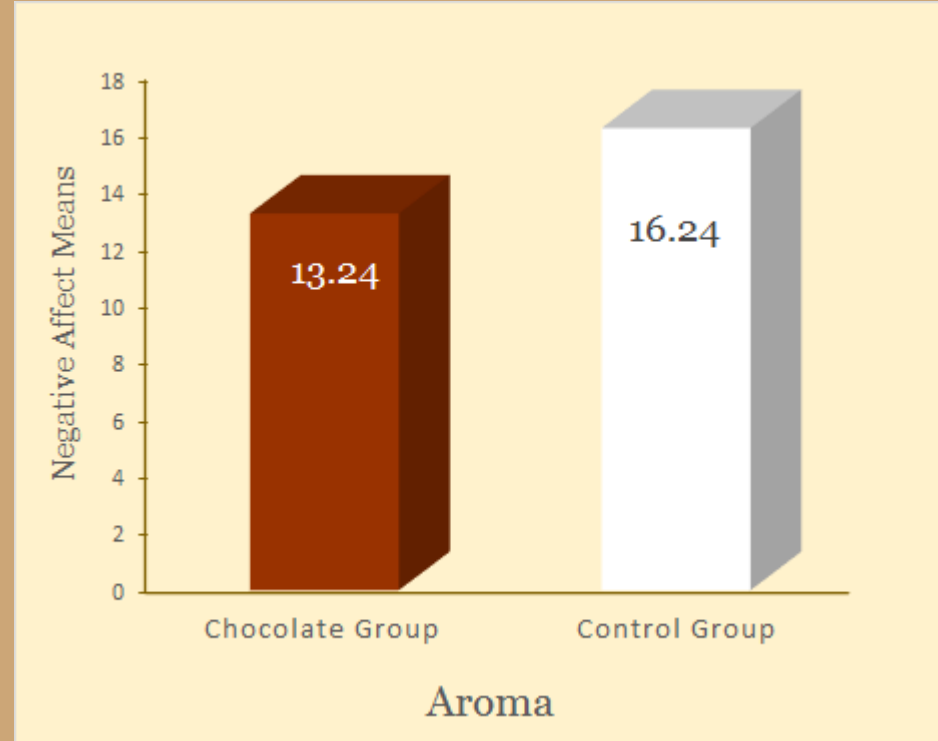
Results: Hypothesis 2

Hypothesis 2 -- **Supported**

($t(48)=2.15, p= .018$)

Mean Negative Affect
significantly differed by
aroma.

Chocolate = 13.24,
Control Group = 16.24



Results : Hypothesis 3

Hypothesis 3-- **Not Supported**

$t(48) = .92, p = .36$

Mean creativity did not differ
by aroma.

Chocolate = 17.00

Control Group = 15.56



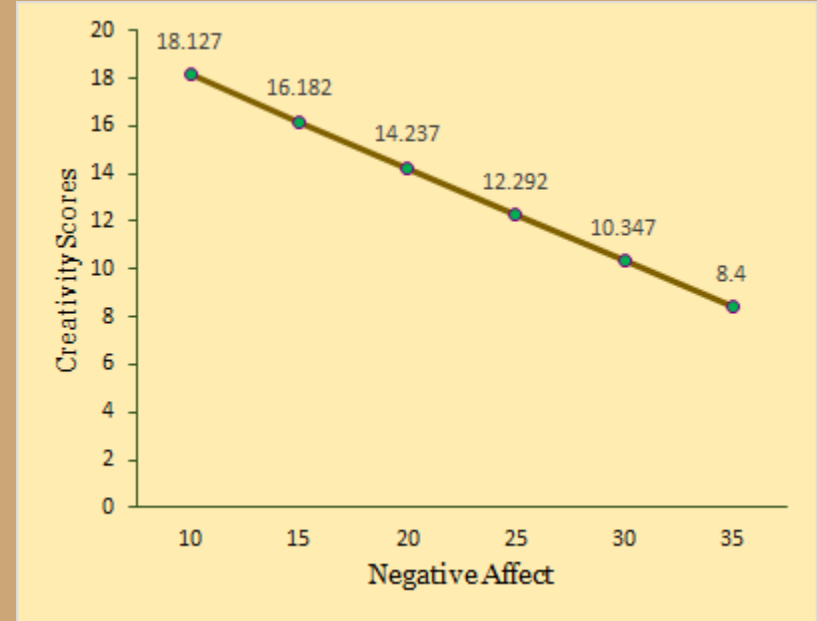
Additional Analysis

However...

A significant correlation was found between creativity and NA

$$r(50) = -.36, p = .005$$

As NA decreased, creativity increased



Discussion

Summary of Findings

- Predicted PA would increase (Baron, 1980, 1997; Macht & Dettmer, 2006)
 - Not supported
- Predicted NA would decrease (Not examined in past research)
 - Supported
- Predicted creativity would increase (Isen, Daubman, Nowicki, 1987; George & Zhou, 2002)
 - Not supported, however
 - NA and creativity negatively correlated suggesting that chocolate aroma would have an indirect effect on creativity by reducing NA
- Relation to creativity is supported by other researchers

Limitation

Smell adapts quickly and there was no way to keep spraying the scent



Takeaway and Implications

Chocolate scent relieves negative feelings and influences creativity



Questions??



Contact:

ostrincl@hawkmail.newpaltz.edu