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The Effects of Social Interactions on Consumption:

A Test of Social Facilitation

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Previous research by de Castro has shown that people consume different amounts while in certain social surroundings. In particular people consume more while in the company of family and friends and less when surrounded by strangers. In this experiment the pairing of friends or the pairing of strangers while watching a movie clip was applied to observe the effect that different social arrangements placed on the behaviour of consumption. It was also tested to see the effect that prior exposure to eating would have on the behaviour of consumption. Refreshments and snacks were readily available for the participants of this study. It was found through the analysis of a two-way, between subjects analysis of variance that there was a significant main effect of pairing of friends or strangers, $F(1, 36) = 28.98, p < 0.10$ but no main effect of prior exposure to eating, $F(1, 36) = 1.35, p < 0.10$ and no significant interaction, $F(1, 36) = .10, p < 0.10$. The results of this test show that people consume more while surrounded by friends than with strangers, but not necessarily more when previously exposed to eating.

Consuming refers to the act of eating, drinking or ingesting something, commonly through the mouth. The behaviour of consumption can be affected by many factors including mood, time of day and social surroundings. Specifically, researchers have been interested in how social surroundings affect the behaviour of consumption. Studies have shown that being surrounded by family and friends facilitates consumption (de Castro, 1994). In 1994 J.M de Castro did a series of experiments surrounding the hypothesis that “friends and families produc[ed] greater social facilitation of food intake.
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than other companions” (de Castro, 1994). De Castro paid 515 adults to maintain food journals for seven days, recording what they ate, how much, who they ate with and for how long (de Castro, 1994). De Castro concluded that “the presence of other people at a meal increases intake by extending the time spent at the meal, probably as a result of social interaction, and that family and friends have an even larger effect, probably by producing relaxation and a consequent disinhibition of restraint on intake” (de Castro, 1994). The rate at which people consume food is much greater in the company of close friends and family. The time spent eating is also increased in the company of family. De Castro completed numerous studies regarding social facilitation on consumption rates and in each study found that people ate more in the presence of friends then with strangers.

Further research has shown that social facilitation even happens in children. Social facilitation is defined as “an increase in a behaviour merely from the sight or sound of others engaged in the same behaviour. Eating behaviour is one of the clearest demonstrations of the social facilitation effect, and has been documented in animals and adult humans” (Lumeng and Hillman, 2007). A study by Julie Lumeng and Katherine Hillman, 2007, demonstrated that even “children consumed 30% more food when eating in a group of nine children than when eating in a group of three children during longer snacks. Social facilitation of food consumption operates in preschool-aged children” (Lumeng and Hillman, 2007). Through studies like this it proves imperative to educate even preschool aged children of healthy eating patterns. Education on the topic of social factors affecting eating needs to become more available and more prominent in healthy life style teachings, as ample amounts of studies have shown that the amount of food consumed in the presence of groups, especially friends, is significantly high.
The current study on social facilitation was based on de Castro’s hypothesis that people consume more in the presence of their friends as well as the idea that the prior exposure to eating will trigger people in the study to eat more. In the current study people were paired up with either a friend or a stranger, and exposed to the experimenter eating or not eating prior to viewing a short movie clip. The hypothesis that friends produce the greatest social facilitation on the consumption of food was evaluated in the current study. It is hypothesized that like de Castro’s study people will eat more when they are paired up with their friend than with a stranger, and they will eat more when exposed to eating by the experimenter prior to the movie.

Method

Participants

The participants of the current study were 40 randomly selected participants. The participants varied in age and gender. They were also from a variety of schools including Huron University College, the University of Western Ontario, and Fanshawe College. The study also contained participants of working professionals. Twenty of the participants were randomly paired with a friend and the other twenty participants were randomly paired with a stranger. There is no demographic knowledge known about the participants because participants were used based on convenience and availability. Also no data about the participants was collected.

Materials

The room in which the current experiment was carried out was 4.6 m long, 3.05 m across and 3.05 m high. The walls were mostly bare and an overhead fluorescent light illuminated the test room while participants arrived. During the experiment the lights were turned off and the door was closed. The doorway was 1.21 m across and 2.2 m


high. Two desks sat in the test room measuring 76 cm long, 63.5 cm across and 75 cm tall. Sitting on one of the desks was a 32 inch Samsung LED television and a Sony DVD player. Upon the other desk, prepackaged snacks and refreshments sat. The snacks consisted of approximately ten 43 g snack size chip bags of assorted Lays flavours and a 510 g box of assorted Nestle snack size chocolate bars, including Smarties, Kit Kat, Aero and Coffee Crisp. Refreshments consisted of four 200 ml Minute Maid orange juice boxes, two 355 ml Coca Cola cans and two Nestle Pure Life 500 ml water bottles. Two chairs, placed behind the desk were made available for the participants and one chair at the back of the room was made available for the experimenter.

The information booklets distributed for the current study contained a letter of information and participant consent form, which outlined the details of the study, the confidentiality of the study and a place for the participant’s signature. The booklets contained a total of three pages.

A twenty minute clip from the Star Trek DVD, 2009 widescreen edition was viewed. The movie clip ran from approximately 97 minutes into the movie until 117 minutes. A single sheet debriefing form was given to the participants after the completion of the experiment.

Procedure

During the current experiment materials for the information and consent booklets were arranged at home, as were the debriefing forms. A signup sheet with allotted times every half hour was made available to the participants. The participants were randomly assigned into one of four groups. Group 1 consisted of ten separate pairs of friends, and exposure to eating by the experimenter prior to the movie clip. Group 2 consisted of ten separate pairs of strangers and exposure to eating by the experimenter prior to the movie
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clip. Group 3 was composed of ten separate pairs of friends and no exposure to eating by the experimenter prior to the movie clip and Group 4 was composed of ten separate pairs of strangers and no exposure to eating by the experimenter prior to the movie clip. The room was prearranged so that the television sat on a desk at the front of the room, hooked up to a DVD player. Another desk sat in the middle of the room covered in prepackaged snacks and refreshments. The snacks consisted of chocolate bars and chips and the refreshments were juice, water and pop. The participants arrived to the room and were welcomed and asked to sit down. They were given the information booklet, containing the consent form. The consent forms were collected. The participants were told they were allowed to help themselves to any of the available snacks or refreshments. In groups 1 and 2 the experimenter also ate while offering the snacks and refreshments to the participants. The lights were turned off and approximately twenty minutes of the movie Star Trek was played. The experimenter sat at the back of the room on the chair recording how many snacks and refreshments were consumed. The participants were numbered on a sheet of paper and a tally was made every time the person with the corresponding number consumed a snack or beverage. At the end of the twenty minute movie clip the lights were turned back on. They were then allowed to leave and told to help themselves to any of the snacks or refreshments on the way out. These snacks or refreshments taken were also recorded. Upon departure the participants were given a debriefing sheet which explained the true nature of the study.

Results

As shown in Figure 1 there is a decline in consumption rate between those paired with a friend and those paired with a stranger. Being paired with a friend during the
Figure 1. Cell Means of Group 1–4 with pairings of friend versus strangers and prior exposure to eating versus no prior exposure to eating.
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movie as opposed to a stranger, tended to increase behaviour in regards to consumption. Appendix 1 shows the summary chart of a two-way, between-subjects analysis of variance that was used to analyze the effect that social surrounding had on the behaviour of consumption, as well as the effect that prior exposure to eating had on consumption behaviour (Refer to Appendix 1). The analysis shows that there was a main effect of friend pairings versus stranger pairings, $F(1, 36) = 28.98, p < 0.10$. Participants in the friend pairings during the movie consumed more (M=3.9) than in the stranger pairing (M=1.35). The effect size of the friend pairing versus stranger pairing was very large, $\eta^2 = 0.44$, therefore the effect of columns accounts for 44% of the total variance. Whether the participants were first exposed to the experimenter eating (M= 2.9) or not eating (M=2.35) prior to the movie made no significant difference $F(1, 36) = 1.35 \ p < 0.10$. There was no significant interaction between social pairing, friends or strangers, and prior exposure to eating $F(1, 36) = .10, p < 0.10$.

Discussion

The results of this study support the notion that people consume more while in comfortable company, such as their friends. The main effect of friend pairings versus strangers show that people will eat and drink more while surrounded by their friends than by strangers. Although a main effect was evident for friend versus stranger pairings, no main effect was evident for being previously exposed or not to an authority figure consuming food before the experiment. This means that being exposed to eating prior to the movie did not significantly change the behaviour of consumption in the participants. There was also no main effect of the pairings and prior exposure, which means that the effect of the pairings is not different based on the prior exposure to eating and vice versa.
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Problems in this study arose during measurement, sampling and control. A clear definition of what consumption meant should have been established prior to the experiment. Whether a food item or beverage needed to be completely consumed or just partially consumed was not established before recording consumption behaviour of the participants. Another problem was in the sampling of the study. The sampling, for convenience, was done through the use of a sign-up sheet, based on the willingness of volunteer participants. The participants were mostly peers and family members so they did not represent a large, random sample. This means that the sample cannot represent the general population. There was also little demographic knowledge known about the participants of the study. The age and location of the participants were all unknown; also meaning it was hard to generalize this study as being applicable for a larger population. However the participants were assigned randomly into one of the four groups to try and randomize the experiment as much as possible. Lastly the control of the study was done poorly. Due to time constraints and conveniences the twenty pairs of participants were all tested over the course of two days. They were all tested at different times so a condition such as the time of day that the movie was watched was not the same for all participants. This could affect the behaviour of consumption because people during the 10:00 am viewing may not have been as influenced to consume the snacks as the people during the 2:00 pm viewing. The variety of food was also severely limited to unhealthy, prepackaged food. A wider variety of healthy, prepackaged food items, such as oranges, may have changed the behaviour of consumption. Lastly mood should have been controlled for, allowing for all participants to view the movie in a similar state of mood. This could have been established through the use of a simple pleasant task, which would not have caused frustration or stress for any of the participants.
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For the study to be more applicable to a larger population the participants would need to be completely random. The group of participants preferably could have been a larger group, with no common underlying factors. This would give the study more credibility and would allow the study to be more applicable to a large population.

Through the knowledge of the current study, and previous studies such as the de Castro study, social facilitation can be applied to the aid of eating disorder patients and obese patients. Social factors that affect why people eat and the amount they eat can help aid an obese patient in losing weight. Being conscious of factors such as group settings and places where people are frequently eating can be used to avoid over consumption in people who are trying to maintain a healthy weight or lose weight. As stated by the Centres for Disease Control and Prevention in 2012 “more than one-third of U.S. adults (35.7%) and approximately 17% (or 12.5 million) of children and adolescents aged 2—19 years are obese” (CDC, 2012). The knowledge of social facilitation can be a highly influential source in decreasing obesity. A study done by Emily Brindal in 2010 showed that “eating with other people predicted the time spent eating which subsequently predicted energy consumption from fast food items. Beyond the simple effects of time-extension, further modelling showed that environmental factors, including reasons, for consumption could be associated with increased fast food intake” (Brindal, 2010). An understanding of how social settings and the people you eat with will influence your overall consumption is crucial in being a consciously healthy eater. Brindal explains that “given the potential association between weight gain and the consumption of fast foods, understanding these influences is a first step toward future intervention” (Brindal, 2010). Although it may be a marketing advantage for fast food restaurants, it is a major factor in the depleting health of North America. By using the information present in
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these studies the obesity rates in North America may be decreased. If nothing else it allows individuals to become more aware of their eating patterns, and how they are affected by social factors, such as the presence of others.
References


CDC Overweight and Obesity (2012). Overweight and Obesity Facts. *Centre for Disease Control and Prevention*


## Analysis of Variance Summary Chart

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