

# Hunger and Social Motivation: Hungry People are Less Interested in Social Activities than Satiated People

Terry F. Pettijohn II · Shujaat F. Ahmed ·  
Terry F. Pettijohn

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**Abstract** College students ( $N=207$ ) were asked their level of interest in sex, dating, and friendship affiliation before or after eating dinner at a dining hall. The threat of hunger before dinner was predicted to make participants focus on satisfying this need and therefore be less interested in social activities, compared to participants after dinner who were not hungry. Consistent with predictions, hungry males and females were less interested in sex, dating, and hanging out with friends compared to individuals who had just eaten. Results are considered in the context of motivation theory and recent research findings in the areas of physical attraction and social inclusion.

**Keywords** Motivation · Hunger · Sex · Social activities

Several recent studies have found relationships between social and economic conditions and preferences for facial and body features (see Nelson et al. 2007 for a review). More specifically, hungry males have been found to prefer females who are heavier, compared to males who were not hungry (Nelson and Morrison 2005; Swami and Tovee 2006). Other researchers have found hungry males prefer older females and females with more mature facial characteristics, and hungry females prefer males with more mature personalities compared to their satiated counterparts (Pettijohn et al. 2009). To further understand these preference patterns, interest in social behaviors (sexual activity, dating, and affiliation with friends) between individuals experiencing hunger and those not experiencing hunger should be considered.

Classic theories of motivation (Alderfer 1969, 1972; Maslow 1943; 1968; 1970) suggest lower level needs, such as hunger and thirst, take precedence over higher level needs, such as social needs, including belongingness and love. Maslow's need

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T. F. Pettijohn II (✉) · S. F. Ahmed  
Department of Psychology, Coastal Carolina University, P.O. Box 261954, Conway, SC 29528-6054,  
USA  
e-mail: pettijohn@coastal.edu

T. F. Pettijohn  
Psychology Department, The Ohio State University-Marion, Marion, OH, USA

hierarchy (1943) organizes human needs from more basic to more social. His physiological needs category usually focuses on hunger and thirst. According to Maslow, when “hunger is satisfied, it becomes unimportant” to the individual, and is instead replaced by higher order needs (Maslow 1970, p. 38).

Maslow argued that “motivated behavior is not a good basis for classification, since we have seen that it may express many things” (Maslow 1970, p. 26). Maslow used sex as an example, stating that “an individual going through the whole process of sexual desire, courting behavior, and consummatory love making may actually be seeking self-esteem rather than sexual gratification” (Maslow 1970, p. 26). Maslow argued that although sex could be considered a physiological need, it could also be a social need. “Ordinarily sexual behavior is multi-determined, that is to say, determined not only by sexual but also by other needs, chief among which are the love and affection needs” (Maslow 1943, p. 381).

In Alderfer’s (1969) ERG theory of motivation, hunger would be classified as an existence need, whereas sexual interactions, dating, and affiliation with friends would be classified as relatedness needs. Alderfer suggested that when existence needs are satisfied, the relatedness needs are more likely to be desired. Thus, we predict that when hunger (existence need) is satisfied, the social relatedness needs of sexual activity, dating, and friendship affiliation would increase in motivation.

Kenrick et al. (2010) recently provided a modern revision of Maslow 1943 hierarchy of needs. They kept Maslow’s category of physiological needs, such as hunger. However, they argued that sexual motivation should be considered a higher order motivation, and they added three levels, mate acquisition, mate retention, and parenting, to the hierarchy in their revision. They also suggested that sexual arousal should be considered as a social affiliation motive. In the current study, we consider hunger as a physiological need that is contrasted with the social motives of sexual behavior, dating, and friendship affiliation.

In the current study we predicted that when college students were hungry, they would experience an indirect threat and feeling of resource scarcity that would reduce their motivation to engage in social activities, including interest in sexual behavior, dating behavior, and affiliation with friends. When individuals are hungry, their motivational focus will be on finding food and satisfying this lower-order need, and therefore they will be less interested in social activities that would interfere with the hunger reduction goal pursuit. Therefore, hungry individuals were predicted to show less interest in social activities, compared to satiated individuals. In the current study, sex, dating, and friendship affiliation (hanging out with friends) are all considered to be examples of Maslow’s belongingness and love, or social needs, and hunger is considered to be a physiological need.

## Method

### Participants

Two hundred and seven (106 men and 101 women) undergraduates at a mid-sized public university in the southeastern United States volunteered to participate in this study. No compensation was offered to participants for survey completion.

## Materials and Procedure

Researchers waited outside a college dining hall and approached students as they entered or left dinner between 5 and 7pm on two subsequent days (105 students were approached before dinner and 102 after dinner). A male researcher interviewed the male participants and a female researcher interviewed the female participants. Researchers introduced themselves and asked if students would please help with a survey research project on “social motivation” that would take less than 5 min to complete. Researchers also asked participants if they had previously participated so we could exclude those individuals from completing the survey more than once.

The brief paper survey asked participant sex, current hunger state (“How hungry are you at this moment?”), and current interest in three social activities (sex: “How interested are you in engaging in sexual activity at this moment?”, dating: “How interested are you in going out on a date at this moment?”, and friendship affiliation: “How interested are you in hanging out with friends at this moment?”) either before or after eating dinner. Hunger and interest in the social activities were assessed using a 10 point Likert scale (1 = *Not at all* to 10 = *Very*). Picnic tables were available outside the dining hall for students to sit and complete the surveys anonymously. When finished, students folded the survey in half and returned it to the researcher.

## Results

Greater hunger scores were reported by participants who were surveyed before eating dinner compared to participants surveyed after eating dinner,  $F(1, 205)=312.42$ ,  $p<.001$ ,  $\eta^2=.61$ ,  $M_s=6.78$  ( $SD=1.97$ ) and 2.55 ( $SD=1.50$ ), respectively. Mean hunger scores before eating were 7.26 ( $SD=1.69$ ) for males and 6.41 ( $SD=2.09$ ) for females, and mean hunger scores after eating were 2.65 ( $SD=1.52$ ) for males and 2.40 ( $SD=1.48$ ) for females.

Satiated participants, surveyed after eating, showed a significantly greater interest in sex compared to hungry participants,  $F(1, 205)=224.48$ ,  $p<.001$ ,  $\eta^2=.53$ ,  $M_s=7.51$  ( $SD=2.09$ ) and 2.98 ( $SD=2.20$ ), respectively. In addition, males reported an overall greater interest in engaging in sexual activity than females,  $F(1, 205)=22.14$ ,  $p<.001$ ,  $\eta^2=.10$ ,  $M_s=6.19$  ( $SD=3.08$ ) and 4.19 ( $SD=2.84$ ), respectively, but there was no significant interaction between participant sex and hunger scores,  $p=.41$ .

Satiated participants also showed a significantly greater interest in dating compared with hungry participants surveyed before eating,  $F(1, 205)=24.24$ ,  $p<.001$ ,  $\eta^2=.11$ ,  $M_s=5.68$  ( $SD=2.66$ ) and 3.80 ( $SD=2.67$ ), respectively. The main effect for participant sex and the interaction effect regarding interest in dating were not statistically significant,  $p_s>.36$ . Mean overall dating scores were 4.90 ( $SD=2.86$ ) for males and 4.54 ( $SD=2.79$ ) for females.

Calorically full participants surveyed after eating reported a significantly greater interest in friendship affiliation (hanging out with friends),  $F(1, 205)=4.23$ ,  $p=.04$ ,  $\eta^2=.02$ ,  $M_s=7.46$  ( $SD=2.23$ ) and 6.90 ( $SD=2.33$ ), respectively, compared to hungry participants surveyed before eating. The participant sex main effect was significant for the friendship affiliation variable,  $F(1, 205)=5.32$ ,  $p=.02$ ,  $\eta^2=.03$ , with females overall having higher affiliation scores ( $M=7.50$ ,  $SD=2.33$ ), compared to males

( $M=6.87$ ,  $SD=2.21$ ). The interaction between friendship affiliation and participant sex was also significant,  $F(1, 205)=10.68$ ,  $p<.001$ ,  $\eta^2=.05$ , such that females reported more interest in friendship affiliation before dinner, ( $M=7.66$ ,  $SD=2.26$ ), and males reported less interest in friendship affiliation before dinner ( $M=5.93$ ,  $SD=2.07$ ) than after dinner. Both males and females reported similarly high motivation for friendship affiliation after dinner,  $M_s=7.58$  ( $SD=2.44$ ) and  $7.29$  ( $SD=2.06$ ), respectively.

Hunger and social activity interest were negatively correlated. Self-reported hunger level was significantly negatively correlated with interest in sex,  $r(205)=-.47$ ,  $p<.001$ , significantly negatively correlated with interest in dating,  $r(205)=-.19$ ,  $p<.01$ , and negatively correlated with friendship affiliation,  $r(205)=-.10$ ,  $p=.17$  (but not significantly so).

## Discussion

Overall, the hypothesis that hungry individuals would report less interest in social activities (interest in sex, dating, and friendship affiliation) compared to satiated individuals, was supported. We found that participants showed higher levels of interest in sex, dating, and friendship affiliation after eating dinner at a college dining hall. These results are consistent with theories of motivation (i.e., Maslow 1943; Alderfer 1969; and Kenrick et al. 2010) which suggest that needs follow a loose hierarchical order, whereby basic needs such as hunger must be satisfied before higher social needs can be pursued.

The present results may also provide further explanation for recent research in the area of attraction and threat which finds hungry men, compared to satiated men, prefer heavier women (i.e., Nelson and Morrison 2005; Pettijohn et al. 2009; Swami and Tovee 2006). Perhaps individuals who experience the threat of hunger are less interested in mating, so their preferences for characteristics (for example, weight) in a potential mate that are less discriminating than if the individuals were satiated. In the current study we did not ask specifics about social relationship status of the participants, so we do not know whether increases in the motivation for sex, dating, and friendship affiliation that was shown by participants were for specific individuals they were in a relationship with or just a general increase in social activity interest.

Furthermore, recent research suggests that interest in mating increases when basic needs are met. Specifically, individuals made to feel socially included, and thus experiencing satisfaction of needs related to survival, showed an elevated interest in mating compared to individuals made to feel excluded and individuals in a control condition (Brown et al. 2009). Perhaps eating in a social situation such as a college dining hall increases social motives, such as esteem, that leads college students to increase their interest in sexual interactions. Kenrick et al. (2010) argue that mate acquisition and retention are higher order needs compared with immediate physiological needs and self-protection needs.

Limitations of the current research include the lack of extreme hunger among participants, the use of self-reported hunger instead of experimentally manipulated hunger state, and potential social desirability effects in responding. According to Maslow (1970, p. 38), when a person indicates hunger, he or she is actually

experiencing appetite rather than a life and death starvation level of hunger. However, people commonly indicate hunger when they desire to eat rather than when they are in extreme physiological deprivation. Thus, our use of the term hunger in the current study corresponds to the custom of indicating a desire to eat.

We found the greatest absolute score increases for social motivation after eating was for interest in sex, followed by dating, and finally friendship affiliation. Kenrick et al. (2010) proposed affiliation and status/esteem are lower needs compared to mate acquisition, mate retention, and parenting. It is possible that the friendship affiliation need was partially satisfied during eating, but interest in dating and mating were reserved for after dinner when the participants were no longer hungry.

We found that females showed a higher friendship affiliation score before dinner compared with males, and overall, affiliation scores were significantly higher for females. This might be due to females affiliating more during dinner or it may be due to a generally higher affiliation tendency for females in college. However, friendship affiliation scores for both males and females were significantly higher after dinner. The scores of females for friendship affiliation may also be due to social desirability or expectations that they should show more affiliation, especially in a college setting.

Results of the current research study contribute to further understanding of how resource scarcity and environmental security influence our desire for social interactions. This study also supports research that suggests that social motivation, such as mate acquisition, are important higher order human needs. Future research may further consider how various types of threat influence different aspects of social motivation.

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