The relationship of situated social cognition factors and consent to search perceptions in innocent suspects Sarah A. Moody, Joshua A. Haby, Jennifer L. Groscup, & Eve M. Brank University of Nebraska-Lincoln

# Abstract

A surprising majority of people acquiesce to search requests, though there is no obligation to do so under the Fourth Amendment. The current research analyzes consent to search perceptions of innocent suspects via the interaction of demographic and situated social cognition variables. Factorial ANOVA analyses revealed significant two-, three-, and four-way interactions between age, gender, room size, and amount of lighting, as they relate to voluntariness of consent and freedom to refuse consent. The results of this research are relevant to policy makers in considering the safeguards necessary to protect citizen rights against unreasonable searches and seizures.

# Introduction

The United States Constitution guarantees a number of rights to Americans, including the protection against unreasonable searches and seizures under the Fourth Amendment. This provision maintains that "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause..." (U.S. Const. amend. IV). The courts were left to determine what constitutes an "unreasonable" search or "probable cause," and they have taken a "totality of the circumstances" approach (Illinois v. Gates, 1983).

It is difficult to find statistics on the percentage of people who consent to a search; however, the state of Illinois produced analyses of traffic stops and consent searches therein and the rate of consent was around 90 percent ("Traffic stop"; "Illinois"). In addition, we know that many suspects consent to a search request, even if they have something to hide (Lichtenberg, 2000). A number of factors may exist that contribute to the decision to consent to a search; this paper contends that situated social cognition is another factor that is of significant import.

Situated social cognition (SSC) purports that "much cognitive activity operates directly on real-world environments" (Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005). This is a burgeoning subfield of psychological research with many interesting findings of late. For example, Niedenthal and colleagues (2005) found that head nodding could increase ratings of agreement with an argument or preference for a previously seen object. In addition, haptic sensations were shown to influence affect and play a role in judgments and decisions when Ackerman, Nocera, and Bargh (2010) found touch influences shoppers' impressions of clothing.

Situated social cognition can be related to decision-making both literally and figuratively, such as in the instance of weight. Weight influences perceptions of distance and slope steepness,

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as well as the importance of a social issue (Proffitt, 2006; Ackerman, et al., 2010). Jostmann, Lakens, and Schubert (2009) studied the influences of weight in a figurative sense when they asked Dutch students to rate a variety of items. Participants gave higher ratings when they were using a weighted (2.29 pounds) versus non-weighted (1.45 pounds) clipboard.

A final germane study is that of Cesario, Plaks, Hagiwara, Navarrete, and Higgins (2010). They found different fight or flight responses are elicited depending on which options are available. In each study, words associated with "fight," "flight," or "neutral" appeared on a screen and measurements recorded latencies of reaction times to press a corresponding button. Participants in a small booth elicited shorter latencies for fight-related words and those in an open field reacted more quickly to "flight" words. Cesario and colleagues (2010) also found that fight responses are more likely in tight spaces, where there is no perceived escape.

SSC studies have shown that such variables often play a role in perceptions of a situation and decision-making within it. Though this area of research has rarely been applied to the realm of consents to search, it is reasonable to suggest it is relevant in these decisions. Situational or environmental variables may play a role in the increase or decrease of the likelihood of consent, potentially through coercive means. If this is the case, legal authority figures need to consider these variables as within the "totality of the circumstances" when requesting consent. The variables are also relevant to courts when deciding what safeguards must be in place to protect against unlawful searches and seizures and in evaluating the validity of consent.

# **Current Study**

The current research sought to examine factors related to consent to search perceptions and decisions. The study employed a cheating paradigm that encouraged participants to be dishonest so an authority figure could accuse them of cheating and ask to search their

belongings. This research, in looking only at those who did not cheat and who consented to the search, examines the interaction of demographic variables and situated social cognition factors (room size and lighting) on perceptions of the search request. Approximately 93 percent of participants consented to the search, a number similar to that reported in the Illinois traffic reports ("Traffic stop", "Illinois"). Consequently, it was not reasonable to study the effects of the SSC variables on decisions of whether or not to consent. Instead, the effects of these variables on perceptions of the consent decisions were examined, namely the freedom to refuse consent to the search request and voluntariness of the consent.

We hypothesized that gender differences would occur in perceptions of the search request and these would relate to the situated social cognition factors. In addition, following Cesario and colleagues (2010), we hypothesized that room size would be related to both voluntariness of consent and freedom to refuse consent, such that those in the larger room would give higher ratings of both voluntariness and freedom to refuse. The effects of lighting on social cognition have had little to no research. Therefore, we hypothesized that the relationship between lighting condition and search request perceptions would follow the pattern of room size, such that those in the lit condition would be more comfortable, thus giving higher ratings of both freedom to refuse consent and voluntariness of consent. As a result, we hypothesized that those in the lit and large room condition would give the highest ratings for both dependent variables.

#### Method

# Sample

The sample was drawn from a pool of undergraduate students enrolled in psychology courses at the University of Nebraska-Lincoln. The study was approximately one and a half hours in length and students earned research credit toward fulfilling requirements in their 5

courses. As previously stated, because such a large majority of participants consented to the search, those who did not consent were excluded from the analyses. A similar percentage of participants did not cheat; likewise, those who cheated were removed from the analyses, leaving only the innocent participants. The resultant filtered sample was comprised of 277 undergraduates with ages ranging from 18 to 24 (mean = 19.74 years, SD = 1.29). The sample was predominately Caucasian (77.98%) and female (72.92%).

# **Materials**

Numerous scales, questionnaires, and physical items were used in the study. The study description asked participants to bring items from home (a pair of socks, house/apartment/dorm key, something from the kitchen, and a book, magazine, or something similar) under the pretext that they were participating in a study on juror decision-making and feelings of being at home. An informed consent form, two videos of a trial simulation, a Personal and Home questionnaire, a 20-question memory quiz over the trial videos, a demographic questionnaire, and an Incident Report Form (with details about the search request and the participant's perceptions of it) were also used in the study. The trial simulations and Personal and Home questionnaire were created to aid in the cover story of examining the effects of home priming on juror decision-making. The study took place in two different rooms, one small and one large. A desk lamp and various light bulbs manipulated the amount of light in the room to be "lit" or "dark."

# Procedure

Participants were asked to meet a research assistant (RA1) outside of the laboratory. RA1 took the participant to the randomly assigned experimental room (small/large and lit/dark). Upon acquisition of consent, RA1 stepped outside while the participant completed the demographic questionnaire. The participant retrieved RA1 to begin the first trial video.

After the first video finished, the participant again retrieved RA1 to start them on the Personal and Home questionnaire, with a quiz over the trial video questions on the back of the document. This questionnaire contained very personal questions, designed so participants would be less willing to allow their belongings to be searched. Before the participant graded the quiz, RA1 explained that if they got all 20 of the quiz questions correct, they would receive entry into a lottery of their choosing for one extra research credit or a \$50 gift card. RA1 gave the participant the answer key and left them to grade their own quiz and enter the number correct into the computer, before putting the quiz in their bag to take home. The computer prompted the participant to get RA1 again to start the second video.

RA1 alerted RA2 that the participant was watching the second video, so RA2 could enter the study room upon its completion. RA2 explained to the participant that they were the research assistant in charge of the lottery and there was evidence of cheating in the study. RA2 asked the participant if they cheated on the quiz and inflated their score, presumably to attain entry into the lottery. Then, RA2 stated they and the professor had decided a full search of the room and the participant's belongings was necessary and asked for consent to the search. RA2 retrieved the Incident Report Form (IRF) from the lab and gave the participant instructions to complete it, then left the room so the participant could fill it out. When the participant finished the IRF, RA2 took it back to the lab and sent RA1 to debrief the participant and grant them a lottery entry. All participants were eligible for the lottery, regardless of prior statements.

#### Results

Between-groups factorial ANOVAs were conducted to examine the relationships between situated social cognition predictors, gender, and perceptions of the search request and the participants' consent. Table 1 displays a summary of the descriptive statistics.

## Freedom to refuse consent to the search request

The results yielded a significant three-way interaction between gender, room size, and lighting conditions, as they relate to freedom to refuse consent to the search request, F(1,256)=5.53, MSe=5.50, p=.02, r=.15. Table 2 displays all *F*-tests. Estimated marginal means were used to compare the cell means to determine the direction of the interaction. The results were such that for males, those in the lit condition reported higher ratings of freedom to refuse consent when in the small room (5.67>2.68, p<.01, r=.54), a finding contrary to the research hypothesis that those in the large room would give higher ratings. Males in the dark condition reported no difference in levels of freedom to refuse consent between the small and large room conditions (2.68=3.21, p=.49), also contrary to that which was hypothesized. Likewise, for females, there was no difference in ratings of freedom to refuse consent by room size for either the lit (3.25=3.12, p=.78) or dark condition (3.20=2.95, p=.62).

The factorial ANOVA also yielded a significant two-way interaction for the situated social cognition factors—room size and lighting—as they relate to freedom to refuse consent to the search request, F(1,256)=4.72, MSe=5.50, p=.03, r=.14. This effect showed that those in the small room gave higher ratings of freedom to refuse consent in the lit condition than in the dark condition (4.46>2.94, p<.01, r=.31), as was hypothesized. However, there was no difference in ratings between the lit and dark conditions in the large room (3.18=3.08, p=.82). This overall interaction is descriptive for males but not for females, as females had no difference in freedom to refuse consent ratings between lit and dark conditions in the small room. We also hypothesized that the interaction between room size and lighting would yield the highest ratings. This effect is indeed the largest of the two-way interactions and is only smaller than the three-way interaction and main effect for lighting.

There is also a significant two-way interaction between gender and lighting,

F(1,256)=4.62, MSe=5.50, p=.03, r=.13, such that males in the lit condition gave higher ratings of freedom to refuse consent than did those in the dark condition (4.46>2.95, p<.01, r=.31). This effect supports the research hypothesis that those in the lit condition would give higher ratings than those in the dark condition. The effect was descriptive for males in the small room, as hypothesized, but not for males in the large room, for whom there was no difference between the lighting conditions in ratings of freedom to refuse consent (3.25=3.21, p=.80). For females, however, there was no difference in ratings of freedom to consent between the lit and dark conditions (3.18=3.07, p=.74), an effect that was descriptive for both room size conditions.

The two-way interaction between gender and room size is not significant, F(1,256)=1.345, MSe=5.50, p=.25, although this is not descriptive, as there is a marginally significant effect for males, such that those in the small room gave higher ratings of freedom to refuse consent than did those in the large room (4.18>3.23, p=.09, r=.19). There was no effect for females (3.22=3.04, p=.58), for whom the (lack of) interaction is descriptive.

There is also a main effect of lighting, F(1,256)=6.22, MSe=5.50, p=.01, r=.15, such that those in the lit condition gave higher ratings of freedom to refuse consent than those in the dark condition, in support of the research hypothesis. This main effect is descriptive for males in the small room (5.67>2.68, p<.01, r=.54), but is misleading in all other conditions, for which there are no significant effects.

The main effects of gender and room size were both marginally significant, F(1,256)=3.12, MSe=5.50, p=.08, r=.11 and F(1,256)=3.05, MSe=5.50, p=.08, r=.11, respectively. Males gave higher ratings of freedom to refuse consent than did females. This effect was descriptive for participants in the small room in the lit condition (5.67>3.25, p<.01, *r*=.46), but is misleading in all other conditions. The main effect of room size shows that those in the small room gave higher freedom to refuse consent ratings than did those in the large room, opposite of the research hypothesis and that which Cesario and colleagues (2010) would have predicted. However, this effect was only descriptive for males in the lit condition (5.67>3.25, p<.01, *r*=.46), and is misleading in all other conditions.

# Voluntariness of consent to the search request

The same three-way interaction examined voluntariness of consent to the search request as the dependent variable. (Refer to Table 3.) However, the three-way interaction was non-significant with few significant lower-order effects. We exploratorily added age as a fourth independent variable to analyze if a four-way interaction would be viable. In fact, the four-way interaction was significant, F(1,256)=4.22, MSe=6.75, p=.04, r=.13. Follow-up analyses of the estimated marginal means of the cells revealed that older males in the small room and lit condition gave higher ratings of voluntariness of consent than did younger males in the same conditions (7.80>4.50, p<.01, r=.54). There was no difference between older and younger males in the large rooms, regardless of age or lighting condition. Although, there was a marginally significant effect for females in the small and lit room condition, such that younger females gave higher ratings of voluntariness ratings between younger and older females in the dark, small room condition.

As previously stated, the original three-way analysis of gender, room size, and lighting condition was not significant, F(1,256)=1.226, MSe=6.75, p=.27. Similarly, none of the additional three-way interactions involving age was significant.

Of the two-way interactions, one was significant and another was marginally significant, though the other four did not achieve statistical significance. There is an interaction between gender and lighting, as they relate to perceptions of voluntariness of consent to the search, F(1,256)=3.90, MSe=6.75, p<.05, r=.12. This interaction showed that males gave marginally higher ratings of voluntariness of consent in the lit condition than did females (5.19>4.25, p=.07, r=.18). However, this effect is only descriptive for males in the small, lit, and older condition, compared to females in the same condition (7.80>3.42, p<.01, r=.64). There is no difference at any other level of the lit conditions. In addition, this two-way interaction shows there is no difference between the genders in the dark condition (411=4.65, p=.32), which is descriptive at all levels of the dark condition.

There is a marginally significant two-way interaction for gender and room size, as they relate to voluntariness of consent to the search request, F(1,256)=3.68, MSe=6.75, p=.06, r=.12. This interaction shows males rate their voluntariness of consent as marginally higher than do females when both are in the small room condition (5.26>4.34, p=.08, r=.17). This interaction is descriptive for older males in the small and lit room, as compared to older females in the same condition (7.80>3.42, p<.01, r=.64), but is misleading at all other levels of the small room condition. However, for this interaction, there is no difference by gender in voluntariness ratings when in the large room condition (4.04=4.56, p=.33), which is descriptive across all levels of the large room condition. No other two-way interaction or any of the main effects was significant.

#### Discussion

The results of this research were surprising, especially in relation to the room size variable and the differences across dependent variables. To begin, we hypothesized that gender differences would appear across the various conditions, and this turned out to be the case. While

the main effect of gender on freedom to refuse consent was only marginally significant (p=.08), pairwise comparisons did reveal small differences between genders in specific conditions. In fact, it seems as though the SSC manipulations did little to nothing in relation to females' freedom to refuse consent scores, as there were no differences between cell means, regardless of condition. For men, however, there were numerous differences: in the small room, males gave higher ratings in the lit condition than in the dark; in the lit condition, males gave higher ratings in the lit condition than in the dark; in the lit condition, males gave higher ratings in the small room than in the large; and there were main effects for both lighting and room size that matched these patterns. These findings may be related to the unequal sample sizes between the two genders. Further research should investigate these gender differences to determine if this is the case or another factor is playing a role to moderate or mediate the relationship. Gender may be acting as a proxy.

Next, we hypothesized room size would be related to both voluntariness of consent and freedom to refuse consent, such that those in the larger room would give higher ratings of both voluntariness and freedom to refuse. Cesario and colleagues (2010) found that, in confrontational situations, "fight" responses are more likely in enclosed spaces, while "flight" responses are more likely in open fields. This finding, however, did not appear in our research. There was a main effect for room size such that higher ratings of freedom to refuse consent were given in the small room than in the large room, opposite of that which we hypothesized. It is not clear why this relationship materialized and, again, it was only descriptive for the males. Additional studies can examine room size in other situations to see how and if the effects replicate.

Because there has been little to no research on the influence of lighting as an SSC manipulation, we hypothesized that the lit condition would be analogous to the open area condition in Cesario and colleagues' study (2010), with higher ratings of freedom to refuse

consent being related to the lit condition. The effects of lighting did follow this hypothesized pattern, though they were then conflicting with the effects of room size. Again, there was no effect for females, but there was a main effect for lighting for males (with higher ratings in the lit condition). This effect was descriptive in the small room; there was no difference by lighting condition in the large room. This was also surprising. Brightness was balanced across room conditions with differing light bulb wattage, so the total output of light did not vary with room size in that regard.

Finally, we hypothesized that those in the lit and large room condition would give the highest ratings for both dependent variables, so that the two-way interaction between the SSC variables and freedom to refuse consent would yield a larger effect than the other two-way interactions. This was indeed the case, though the *F*-test was just larger than the gender by lighting interaction. Again, though, the effect was only partially in the hypothesized direction: the small and lit room yielded the highest ratings of freedom to refuse consent. Overall, the main effect of lighting was the strongest effect in the analysis (*F*=6.22, *p*=.01).

We anticipated that the relationships would be similar between the independent variables and each dependent variable. It had been assumed that "voluntariness of consent" and "freedom to refuse consent" were similar enough to yield analogous results. However, this was not the case. Although nearly every effect significantly related to the former outcome variable, very few related to the latter. While the three-way interaction was the second largest effect for freedom to refuse consent, it had no relationship to voluntariness of consent. For this reason, age was exploratorily investigated, too. The resultant four-way interaction between gender, room size, lighting condition, and age was in fact significant. Apart from this effect, only the two-way interactions between gender and room size and gender and lighting were significant. While the

former analyses demonstrated the relationships that SSC variables can have with decision perceptions, the voluntariness of consent analyses lean toward the importance of the demographic variables.

Interestingly, there continued to be no differences in ratings of voluntariness between conditions within the large room condition. In the small and lit room, there were differences between age and gender: older males gave higher ratings than younger males and younger females gave higher ratings than older females. These findings may speak to processing differences between males and females or may be due to the age cutoffs we used in discriminating between older and younger students. The distribution is roughly even between younger (18-19, likely underclassmen) and older (20-24, likely upperclassmen) students. Additional analyses using other age groups or through a continuous variable and ANCOVA may add to the findings presented here.

There was again an effect for lighting for males in the small room, but it is now limited just to those males in the older condition. This group may have also been driving the effect in the freedom to refuse consent interaction. No other effects were found with voluntariness of consent as the dependent variable. As previously stated, we had assumed that these outcome variables were of relatively equal valence, but that appears not to be the case. As such, vocabulary is another factor that may need to be taken into account, as it relates to the justice system. The independent variables are included herein to discuss their relationship to perceptions of a search request to help inform courts what safeguards ought to be in place to protect their constituents against unlawful searches and seizures. However, the differences between "voluntariness" and "freedom to refuse" may attest that not just the judicial branch, but also the legislative branch has a role in dictating consent validity. The vernacular used in legislation pertaining to searches may alter perceptions of such search requests and, in turn, play a role in litigation related to the legality of search requests. Thus, it must also be included in the "totality of the circumstances."

Future initiatives should acquire a more diverse and balanced sample; the sample used here lacked equality in both race and gender, categories with groups that likely differ in important ways. Other SSC variables should be included and tested in innovative ways to add to the literature and further examine how environmental influences relate to decision-making and perceptions of such decisions. Likewise, other outcome variables may yield different results, as shown here. The wording of the variables may be important and weighed appropriately. Finally and ultimately, the results of this research show that certain search request characteristics may be more important than others may and such interpretations may vary by group. Thus, all, and likely others, should be considered when evaluating the nature of a search request.

# Table 1.

Variable		Univariate Statistic		
Gender <sup>1</sup>		Male	75 (27.08%)	
		Female	202 (72.92%)	
Age <sup>2</sup>		Younger	140 (50.54%)	
		Older	135 (49.46%)	
Lighting condition <sup>3</sup>		Lit	144 (51.99%)	
		Dark	128 (48.01%)	
Room Size condition <sup>4</sup>		Small	148 (53.43%)	
		Large	129 (46.57%)	
Voluntariness of Consent to Search Request	<i>M</i> =4.50	<i>SD</i> =2.70	<i>N</i> =264	
Freedom to Refuse Consent to Search Request	<i>M</i> =3.29	<i>SD</i> =2.41	<i>N</i> =264	

<sup>1</sup>Coded 1=Male, 2=Female <sup>2</sup>Coded 1=Ages 18-19, 2=Ages 20-24 <sup>3</sup>Coded 1=Lit, 2=Dark <sup>4</sup>Coded 1=Small, 2=Large Table 2.

Freedom to Refuse Consent to the Search Request

df	F	р	r
1	3.124	.078*	.110
1	3.046	.082*	.108
1	6.222	.013**	.154
1	1.345	.247	.072
1	4.622	.033**	.133
1	4.718	.031**	.135
1	5.527	.019**	.145
256	MSe = 5.497		
	df 1 1 1 1 1 1 1 1 256	$\begin{array}{c cccc} df & F \\ \hline 1 & 3.124 \\ 1 & 3.046 \\ 1 & 6.222 \\ 1 & 1.345 \\ 1 & 4.622 \\ 1 & 4.718 \\ 1 & 5.527 \\ 256 & MSe = 5.497 \end{array}$	dfFp1 $3.124$ $.078*$ 1 $3.046$ $.082*$ 1 $6.222$ $.013**$ 1 $1.345$ $.247$ 1 $4.622$ $.033**$ 1 $4.718$ $.031**$ 1 $5.527$ $.019**$ 256MSe = 5.497

<sup>2</sup>Coded 1=Small, 2=Large

<sup>3</sup>Coded 1=Lit, 2=Dark

\*p<.10

\*\**p*<.05

Table 3.
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Effect	df	F	р	r
Gender <sup>1</sup>	1	.298	.585	.034
Room Size <sup>2</sup>	1	1.808	.180	.084
Lighting <sup>3</sup>	1	.822	.366	.057
Age <sup>4</sup>	1	.288	.592	.034
Gender*Room Size	1	3.680	.056*	.119
Gender*Lighting	1	3.899	.049**	.122
Gender*Age	1	2.192	.140	.092
Room Size*Lighting	1	.598	.440	.048
Room Size*Age	1	.123	.727	.022
Lighting*Age	1	.530	.467	.045
Gender*Room Size*Lighting	1	1.226	.269	.069
Gender*Room Size*Age	1	1.591	.208	.079
Gender*Lighting*Age	1	1.944	.164	.087
Room Size*Lighting*Age	1	1.063	.304	.064
Gender*Room Size*Lighting*Age	1	4.221	.041**	.127
Error	253	MSe = 6.752		

Voluntariness of Consent to the Search Request

<sup>1</sup>Coded 1=Male, 2=Female

<sup>2</sup>Coded 1=Small, 2=Large

<sup>3</sup>Coded 1=Lit, 2=Dark

<sup>4</sup>Coded 1=Ages 18-19, 2=Ages 20-24

<sup>\*</sup>*p*<.10

<sup>\*\*</sup>*p*<.05

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