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On the nature of creepiness

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ABSTRACT

Surprisingly, until now there has never been an empirical study of "creepiness." An international sample of 1341 individuals responded to an online survey. Males were perceived as being more likely to be creepy than females, and females were more likely to associate sexual threat with creepiness. Unusual nonverbal behavior and characteristics associated with unpredictability were also predictors of creepiness, as were some occupations and hobbies. The results are consistent with the hypothesis that being "creeped out" is an evolved adaptive emotional response to ambiguity about the presence of threat that enables us to maintain vigilance during times of uncertainty.

1. Introduction

It is the goal of this paper to introduce a theoretical perspective on the common psychological experience of feeling "*creeped out*," and to uncover the cues that we use to label other people as creepy. In other words, we are attempting to identify the building blocks of this thing we call "creepiness." Most people have probably used the concept of "creepiness" to describe their reactions to individuals whom they have encountered, and an initial perception of an individual as "creepy" undoubtedly creates an impediment to comfortable future social interactions with that person. The "creepy" psychological reaction is both unpleasant and confusing, and it may be accompanied by physical symptoms such as feeling cold or chilly (Leander, Chartrand, & Bargh, 2012). Given its pervasiveness in everyday human social life, it is very surprising that no one has studied it in a scientific way. The only research that is even close is the aforementioned study by Leander and colleagues who discovered that interacting with individuals displaying inappropriate levels of nonverbal mimicry during social interaction produces an actual physical sensation of feeling cold. Their explanation for the phenomenon is that such non-normative nonverbal behavior signals a social mismatch and put us on our guard against a cold and potentially untrustworthy interaction partner. The fact that social exclusion and other types of social threat produce similar feelings of "getting the chills" is consistent with the idea that our "creepiness detector" is in fact a defense against some sort of threat (Knight & Borden, 1979; Zhong & Leonardelli, 2008).

But what exactly is it that our creepiness detector is warning us about? It cannot just be a clear warning of physical or social harm. A mugger who points a gun in your face and demands money is certainly threatening and terrifying. Yet, most people would probably not use the word "creepy" to describe this situation. It is our belief that creepiness is anxiety aroused by the *ambiguity* of whether there is something to fear or not and/or by the ambiguity of the precise nature of the threat (e.g., sexual, physical violence, contamination, etc) that might be present. Such uncertainty results in a paralysis as to how one should respond. In the mugging situation, there is no ambiguity about the presence or nature of threat. It may be that it is only when we are confronted with uncertainty about threat that we get "creeped out," which could be adaptive if it facilitates our ability to maintain vigilance during periods of uncertainty. Thus, it is our contention that "creepy" is a qualitatively different characteristic than related concepts such as "terrifying" or "disgusting" in which the conclusions drawn about the person in question are much more clear-cut.

Creepiness may be related to the "agency-detection" mechanisms proposed by evolutionary psychologists (Atran, 2002; Barrett, 2005). To oversimplify a bit, these mechanisms have

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evolved as adaptations to protect us from harm at the hands of predators and enemies. If you are walking down a dark city street and hear the sound of something moving in the dark alley to your right, you will respond with a heightened level of arousal and sharply focused attention and behave as if there is a willful "agent" present who is about to do you harm. If it turns out that it is just a gust of wind or a stray cat, you have lost little by over-reacting, but if you fail to activate the alarm response when there is in fact a threat present, the cost of your miscalculation may be quite high. Thus, humans have evolved to err on the side of detecting threats in such ambiguous situations. Consequently, people become uneasy in environments that are dark and/or offer a lot of hiding places for potential predators and also lack clear, unobstructed views of the landscape. These environmental qualities have been called "prospect" and refuge" by the British geographer Jay Appleton (1975, 1984). Fear of crime and a pervasive sense of unease are experienced in environments with less than optimal combinations of prospect and refuge (Fisher & Nasar, 1992). So, it is not the clear presence of danger that makes us feel creepy, but the uncertainty of whether danger is present or not.

Consequently, the feeling of being creeped out is unpleasant. It would be considered rude and embarrassing to run away from an odd person who has done nothing overtly threatening, but, on the other hand, it could be perilous to ignore your intuition and remain in an interaction that is dangerous. This ambivalence leaves you frozen in place, wallowing in unease.

We are essentially starting from scratch when identifying the building blocks of "creepiness." Szczurek, Monin, & Gross (2012) have found that we wish to keep greater social distance between ourselves and individuals who display inappropriate or non-normative expression of emotion, and Leander et al. (2012) indicated that inappropriate nonverbal behavior may serve as a creepiness cue, but surely there must be other things. Are particular physical characteristics or types of people considered creepy? Do certain occupations or hobbies also cause us to perceive others as creepy? Is creepiness a characteristic of humans alone, or can places, things, and animals be thought of as creepy too? At this time, we simply do not know the answers to these questions.

Since there is no previous body of research and theory to build upon directly, this study is unavoidably exploratory in nature. However, there are a few hypotheses that can be tested.

1) If creepiness communicates potential threat, males should be more likely to be perceived as creepy than females, since males are simply more violent and physically threatening to more people (McAndrew, 2009).
2) Related to the first prediction, females should be more likely than males to perceive some sort of sexual threat from a creepy person.
3) Occupations that signal a fascination with threatening stimuli (e.g, death or "non-normative" sex) may attract individuals that would be comfortable in such a work environment. Hence, some occupations should be perceived as creepier than other occupations.
4) Since we hypothesize that creepiness is a function of uncertainty about threat, non-normative nonverbal behavior and actions or characteristics associated with unpredictability will be positively associated with perceptions of creepiness.

2. Materials and method

2.1. Participants

A snowball sampling technique was employed to recruit participants. People were recruited through invitations to Facebook events that were created by the researchers, through campus-wide emails distributed to students, faculty, and staff at a liberal arts college in the American Midwest, and through the "Social Psychology Network" website. Volunteers were encouraged to forward the link to the online survey to their friends and acquaintances. Participants were simply told that it was a study on the nature of creepiness. A brief description of the study and a link to the survey were posted on the invitation page. This resulted in a final sample of 1341 individuals (1029 females, 312 males) ranging in age from 18 to 77 with a mean age of 28.97 (SD = 11.34). We did not ask participants to report their country of origin, but in an unrelated study using an identical recruitment strategy, respondents from 54 different nations were acquired. Thus, although our sample was primarily American, we are confident that there was significant international representation. Participants had to check a box confirming that they were at least 18 years of age before they could access the survey.

2.2. Procedure and materials

An online survey was created using Google Documents. Participants began the survey by reporting their sex and age and by responding to a forced choice question that asked them to choose whether they thought that a creepy person was more likely to be a male or a female. They then proceeded to a survey divided into four sections.

In the first section of the survey, participants considered the following scenario:

> Imagine a close friend of yours whose judgment you trust. Now imagine that this friend tells you that she or he just met someone for the first time and tells you that the person was "creepy."

After reading this scenario, the participants rated the likelihood that the creepy person exhibited 44 different patterns of behavior (e.g., the person never looked your friend in the eye) or physical characteristics (e.g., this person had visible tattoos) on a "1" (very unlikely) to "5" (very likely) scale.

In the second section of the survey, participants rated the creepiness of 21 different occupations on a "1" (not at all creepy) to "5" (very creepy) scale.

In the third section of the survey, participants simply listed two hobbies (via free response) that they thought were creepy.

In the fourth and final section of the survey, participants expressed their degree of agreement with 15 statements about the nature of creepy people on a "1" (strongly disagree) to "5" (strongly agree) scale. Examples of these statements include the following:

> "I am uncomfortable because I cannot predict how he or she will behave."
>
> "I think that the person has a sexual interest in me."
>
> "People are creepier online than when I meet them face-to-face."

There was one final question on the survey. Participants chose a response of "yes," "no," or "unsure" to the question "Do most creepy people know that they are creepy?"

3. Results

3.1. Tests of hypotheses

The first prediction was that creepy individuals would be expected to be males more often than females. This prediction was assessed directly via the question that asked people to choose whether a creepy person was more likely to be a male or a female. 95.3% of our respondents thought that creepy people were much more likely to be males than females, a finding that was highly significant, X^2 (1, N = 1341) = 1100.84, $p. < .00001$. This perception was equally likely to be held by male participants (95.5% vs. 4.5%) and female participants (95.2% vs. 4.8%). Thus, our first prediction was supported: males are more likely to be creepy than females.

The second prediction was that females are more likely to perceive a sexual threat from a creepy person than are males. This hypothesis was tested with a-priori t tests comparing male and female responses to two items: The degree to which steering a conversation toward sex was perceived as a probable characteristic of a creepy person and the degree to which the respondent agreed with the statement that the creepy person "has a sexual interest in me." The prediction was supported by both of these items. Females were more likely than males to think that steering a conversation toward sex was characteristic of a creepy person, t (1339) = 5.46, $p. < .0001$, Means (SD) = 4.23 (.930) vs. 3.90 (1.03), and they were also more likely to think that the creepy person had a sexual interest in them, t (1339) = 7.63, $p. < .0001$, Means (SD) = 3.51 (1.02) vs. 2.99 (1.15).

The third prediction was that occupations would differ in their level of creepiness according to how threatening or strange the "subject matter" of the occupation is. The means and standard deviations of the creepiness ratings for the 21 stimulus occupations are displayed in Table 1. A repeated measured ANOVA using a Greenhouse-Geisser adjustment revealed that the differences in how occupations were rated was highly significant, F (13.636, 18271.956) = 734.29, $p. < .00001$, $\eta^{p2} = .354$. A Tukey test (HSD = .01) indicated that all of the occupations except two (construction workers and computer software engineers) were significantly different from each other. However, one-sample t tests revealed that only four occupations were judged to be significantly higher than the neutral value of "3" on the creepiness rating scale: Clowns, t (1340) = 21.14, $p. < .0001$, Taxidermists, t (1340) = 21.46, $p. < .0001$, Sex Shop Owners, t (1340) = 9.09, $p. < .0001$, and Funeral Directors, t (1340) = 6.58, $p. < .0001$. Therefore, it appears that occupations associated with death (taxidermy and funeral directors) or reflective of a fascination with sex (sex shop owners) are perceived as creepy; clowns were the creepiest of all.

Table 1
Creepiness ratings of occupations.

Occupation	Mean	SD
Clown	3.71	1.24
Taxidermist	3.69	1.19
Sex Shop Owner	3.32	1.30
Funeral Director	3.22	1.23
Taxi Driver	2.86	1.19
Unemployed	2.83	1.29
Clergy	2.57	1.28
Janitor	2.51	1.19
Garbage Collector	2.25	1.12
Guard	2.18	1.08
Writer	2.14	1.08
Actor	2.13	1.02
Construction Worker*	2.09	1.09
Computer Software Engineer*	2.09	1.11
Cafeteria Worker	2.08	1.06
Financial Adviser	1.78	0.98
Doctor/Physician	1.77	0.96
College Professor	1.67	0.86
Farmer	1.65	0.90
Teacher	1.57	0.82
Meteorologist	1.53	0.83

Note: Occupations marked with an asterisk are not significantly different from each other (Tukey HSD = .01). Ratings were made on a "1" (not very creepy) to "5" (Very creepy) scale.

The fourth prediction was that things that make a person unpredictable also predict creepiness. One item among the ratings of creepy individuals ("I am uncomfortable because I cannot predict how he or she will behave") and one item among the items assessing beliefs about creepy people ("Even though someone may seem creepy, I usually think that I understand his or her intentions") allowed a direct test of this prediction. A one-sample t test revealed that the mean rating for being uncomfortable because of an inability to predict behavior (4.33 on a 5 point scale, SD = .815) was significantly above the neutral point of 3.0, t (1340) = 59.96, $p. < .00001$ and therefore highly likely to be characteristic of creepy individuals. The mean for the item about understanding the intentions of a creepy person (2.96 on a 5 point scale, SD = .966) just below and not significantly different from the neutral point of "3", meaning that believing that one understands the intentions of an individual makes them less creepy, t (1340) = 1.67, $p. = 0.10$. Collectively, the results of the analyses of these two items indicate that unpredictability is indeed an important component of creepy behavior.

3.2. Data reduction and exploratory analyses

The many items in our survey afford ample opportunities for exploration of the elements of creepiness. Our first step in this direction was to combine items that seemed to be measuring the same thing within the two longest sections of our questionnaire. The first section contained 44 items assessing the likelihood that a creepy person described by one's trusted friend would display a particular behavior or possess a particular physical characteristic. In an attempt to reduce the number of "dependent" variables to be analyzed, these 44 items were subjected to a principal components factor analysis using varimax rotation. Only items with factor loadings exceeding .50 on a common factor would be combined into a single composite variable for further analysis, and at least three items must have loaded on that factor for it to become a composite variable. The factor analysis was able to identify only one factor that connected multiple variables. This factor included 15 of the 44 items, all of which reflected a nonverbal behavior or physical characteristic of creepy people. A new variable called Appearance/NVB was calculated by computing a mean based upon the scores of each individual on these 15 items. The 15 items that comprised this new variable are as follows. The factor loading for each item is given in parentheses.

The person stood too close to your friend (.509)

The person had greasy hair (.582)

The person had a peculiar smile (.546)

The person had bulging eyes (.563)

The person had long fingers (.503)

The person had unkempt hair (.609)

The person had very pale skin (.566)

The person had bags under his or her eyes (.599)

The person was dressed oddly (.601)

The person licked his or her lips frequently (.580)

The person was wearing dirty clothes (.571)

The person laughed at unpredictable times (.546)

The person made it nearly impossible for your friend to leave the conversation without appearing rude (.500)

The person relentlessly steered the conversation toward one topic (.519)

This new composite Appearance/NVB variable along with the remaining 29 items from the first portion of the questionnaire were analyzed via one-sample t tests to determine which of these characteristics was significantly above the neutral point of "3," and therefore very likely to be a characteristic of a creepy person. The means, standard deviations, and results of the t tests are presented in Table 2. Given the large number of comparisons that were made and the exploratory nature of these comparisons, a Bonferroni correction suggested that a more conservative p-value of .002 should be the guide for determining which differences are least likely to have been due to chance. An examination of Table 2 reveals that the following elements were thought to be very likely to be found in a creepy person: The appearance and nonverbal behavior items in the composite variable (Appearance/NVB), being of the opposite sex (probably due to the predominantly female sample in our study), being extremely thin, not looking the interaction partner in the eye, asking to take a picture of the interaction partner, watching people before interacting with them, asking about details of one's personal life, having a mental illness, talking about his/her own personal life, displaying too much or too little emotion, being older, and steering the conversation toward sex.

Similarly, the section of the questionnaire consisting of 15 items that reflected beliefs about the nature of creepy people was subjected to a principal components factor analysis using varimax rotation. Only items with factor loadings exceeding .50 on a common factor would be combined into a single composite variable for further analysis, and at least three items must have loaded on that factor for it to become a composite variable. The factor analysis was able to identify only one factor that connected multiple variables. This factor tapped into how fearful or anxious the person felt while interacting with a creepy person, and it included the following items, with factor loadings in parentheses. Each statement began with the expression "When I meet someone that seems creepy …

I am sure that the person intends to harm me (.691)

I am uncomfortable because I cannot predict how he or she will behave (.718)

I feel anxious (.756)

I believe that he or she is intentionally hiding something from me (.509)

A new composite variable labeled "fearfulness" was calculated by computing a mean of the four items that loaded on that factor.

The composite "fearfulness" variable along with the remaining 11 items from the last portion of the questionnaire were analyzed via one-sample t tests to determine which of these characteristics was significantly different from neutral point of "3," and therefore strongly believed to be characteristics of a creepy person. The means, standard deviations, and results of the t tests are presented in Table 3. Given the large number of comparisons that were made and the exploratory nature of these comparisons, a Bonferroni correction suggested that a more conservative p-value of .004 should be the guide for determining which differences are least likely to have been due to chance. An examination of Table 3 reveals that the following things were believed to be true of a creepy person:

They make us fear fearful/anxious (composite fearfulness variable)

Creepiness resides in the individual more than in his/her behavior

We think they may have a sexual interest in us

Table 2
One sample t-test results for ratings of probable characteristics of a hypothetical. Creepy person interacting with friend of participant.

Variable/Questionnaire item	Mean (SD)	t value	p.<
Appearance/NVB (Composite)	3.87 (0.54)	59.69	.0001
Talked a lot about clothes	1.91 (0.91)	44.13	.0001
Extremely thin	3.18 (0.90)	7.45	.0001
Dressed too formally for situation	2.64 (1.13)	11.73	.0001
Never looked friend in the eye	3.74 (1.23)	22.20	.0001
Opposite sex of friend	4.01 (1.09)	33.99	.0001
Muscular	2.41 (0.93)	23.18	.0001
Asked to take picture of friend	4.11 (1.03)	39.55	.0001
Watched friend before interacting	4.55 (0.67)	84.66	.0001
Asked for personal details of friend's family	4.09 (0.94)	42.70	.0001
Tall	3.08 (0.91)	3.02	.0003
Greasy Hair	3.90 (0.91)	36.43	.0001
Same sex as friend	2.25 (0.91)	30.35	.0001
Smiled a lot	2.82 (1.07)	6.26	.0001
Had mental illness	3.45 (1.06)	15.57	.0001
Talked a lot about personal life	3.41 (1.15)	13.03	.0001
Touched friend frequently	4.24 (0.92)	49.55	.0001
Was a child	1.67 (0.89)	54.53	.0001
Significantly older than friend	3.72 (1.03)	25.73	.0001
Displayed a lot of emotion	3.15 (1.12)	5.04	.0001
Had facial hair	2.89 (0.97)	4.29	.0001
Crossed arms	2.61 (0.97)	14.65	.0001
Obese	2.63 (0.93)	14.45	.0001
Steered conversation toward sex	4.16 (0.96)	43.89	.0001
Dressed too casually for situation	2.89 (1.04)	3.71	.0001
Fashionably Dressed	1.92 (0.92)	43.19	.0001
Frequently played with hair	2.57 (0.96)	16.49	.0001
Wore revealing clothing	2.57 (0.96)	16.65	.0001
Showed little emotional expression	3.62 (1.07)	21.46	.0001
Nodded frequently	2.82 (0.98)	6.61	.0001

Note: All degrees of freedom (df) = 1340. Ratings are on a "1" (very unlikely that creepy person displayed this characteristic/behavior) to "5" (very likely that creepy person displayed this characteristic/behavior) scale.

Table 3
One sample t-test results for beliefs about the qualities of creepy people.

Variable/Questionnaire item	Mean (SD)	t value	p.<
Fearfulness (Composite)	3.79 (0.65)	44.63	.0001
Expected to follow rules of society	2.40 (1.31)	16.82	.0001
People choose to act creepy	2.67 (1.04)	11.46	.0001
Creepier online than in person	2.69 (1.21)	9.45	.0001
Person is creepy, not just behavior	4.35 (.835)	59.17	.0001
Less creepy if you never have to speak With them again	2.87 (1.23)	3.90	.0001
Behaviors in real life creepier than In movies or on TV	4.01 (.942)	39.14	.0001
Has bad intentions	2.74 (0.97)	9.87	.0001
Has sexual interest	3.39 (1.08)	13.16	.0001
Intentions are understood	2.96 (0.97)	1.67	.096
Creepier with multiple characteristics	4.35 (0.82)	60.13	.0001
Not possible for creepy person to change	2.66 (1.14)	10.93	.0001

Note: All degrees of freedom (df) = 1340. Ratings are on a "1" (strongly disagree with statement about creepy person) to "5" (strongly agree with statement about creepy person) scale.

They are creepy when they exhibit multiple "symptoms" of creepiness rather than just one

The expected intimacy and frequency of interaction with the person moderates perceptions of creepiness

Creepy people are unable to change, but they do not necessarily have bad intentions

People who follow social rules of behavior are not perceived as creepy

There was also one final item in which participants chose among "yes," "no," and "unsure" in response to the question "Do most creepy people know that they are creepy?" The responses were 115 "yes" (8.6%), 797 "no" (59.4%), and 429 "unsure" (32%), indicating that our participants did not believe that most creepy people know that they are creepy, X^2 (2, N = 1341) = 401.02.84, *p.* < .0001.

3.3. Correlations with age

There were many significant correlations between the age of the participant and his/her responses to the items in the survey. Given the exploratory nature and large number of these correlation coefficients, we will not discuss them in any detail here. However, the general finding of interest was that older people seemed to be less alarmed by creepy people than are younger people, being less likely to perceive sexual threat, r (1341) = −0.21, *p.* < .0001, or intended harm, r (1341) = −0.11, *p.* < .0001. They also expressed less anxiety at the prospect of interacting with a creepy person, r (1341) = −0.13, *p.* < .0001.

3.4. Creepiness of hobbies

Just for fun, we asked our participants to list two hobbies that they thought of as creepy. Easily, the most frequently mentioned creepy hobbies involved collecting things (listed by 341 of our participants). Collecting dolls, insects, reptiles, or body parts such as teeth, bones, or fingernails was considered especially creepy. The second most frequently mentioned creepy hobby (listed by 108 participants) involved some variation of "watching." Watching, following, or taking pictures of people (especially children) was thought to be creepy by many of our participants, and bird watchers were considered creepy by many as well. A fascination with pornography or exotic sexual activity and taxidermy were also frequently mentioned.

4. Discussion & conclusions

Everything that we found in this study is consistent with the notion that the perception of creepiness is a response to the ambiguity of threat. Males are more physically threatening to people of both sexes than are females (McAndrew, 2009), and they were more likely to be perceived as creepy by males and females alike. The link made by females between sexual threat and creepiness is also consistent with the fact that females are simply at greater risk of sexual assault and have potentially greater costs associated with it than males. We are placed on our guard by people who touch us or exhibit non-normative nonverbal behavior, or those who are drawn to occupations that reflect a fascination with death or unusual sexual behavior. People who have hobbies that involve collecting things that we are predisposed as a species to fear such as spiders and snakes (Rakison, 2009; Öhman, Flykt, & Esteves, 2001) or things that can only be acquired after something has died (e.g., skulls or bodies to be stuffed) seem creepy to us as well. We are also wary of individuals who have a preoccupation with monitoring the activity of others.

While they may not be overtly threatening, individuals who display unusual patterns of nonverbal behavior (Leander et al., 2012), odd emotional responses (Szczurek et al., 2012), or highly distinctive physical characteristics are outside of the norm, and by definition unpredictable. This may activate our "creepiness detector" and increase our vigilance as we try to discern if there is in fact something to fear or not from the person in question. Interestingly, our results indicate that we do not necessarily assume ill intentions from people who are creepy, although we may still worry that they are dangerous. Most of our subjects believed that creepy people cannot change, and only a small minority of our subjects (8.6%) believed that creepy people are aware that they are creepy.

As always, after the fact we can think of things that should have been done differently. We are assuming significant international representation in our sample, but in hindsight it would have been nice to have data on the nationalities of our participants so that cross-cultural comparisons could have been made. This may have been especially useful since many of the nonverbal variables that we studied, such as eye contact and interaction distance, are strongly affected by an individual's cultural background (Hall, 1966; Malandro, Barker, & Barker, 1989). Similarly, we cannot be entirely confident that reactions to occupations such as taxidermy or being a funeral director would be cross-culturally consistent. We also wish that we had specifically identified the hypothetical friend interacting with a creepy person in the first part of our questionnaire as a *same-sex* friend, as this would have allowed a more nuanced examination of sex differences in the perception of creepy individuals. It looks as if most of our participants were thinking of the scenario in this way, but there is no way that we can be sure. It might also have been enlightening to ask individuals to rate *themselves* on creepiness on the chance that this may have been a good predictor of something else. Finally, we must also acknowledge the limitations of self-selection that occur in any study in which people voluntarily spend time filling out an online survey, especially when the sample is drawn primarily from individuals who were recruited by way of Facebook pages.

There is another issue that bears mentioning. Correlational analyses and factor analysis presume that any detectable relationships among the items in our survey are linear. While we have no reason to doubt that the variables discussed in this paper are likely to have a linear relationship with creepiness and with each other (i.e., the more extremely non-normative the characteristics or actions, the more they will concur regarding the creepiness of the individual expressing them), we cannot be sure. Thus, we must remain open to the possibility that some patterns of behavior may have a curvilinear relationship with each other and with creepiness. This is something that certainly should be explored in future studies.

In spite of these limitations, we believe that our research is a good first step in looking at a topic that has not been studied before, and we see nothing in our data to discourage us from pursuing the idea that creepiness is an adaptive human response to the ambiguity of threat from others. In other words, creepy individuals provide us with the social equivalent of the less than optimal "prospect and refuge" found in the physical settings that make us uneasy (Fisher & Nasar, 1992). Consequently, we would like to extend this line of research in future studies by looking at responses to creepy places (e.g., haunted houses) as well as to creepy people to determine if our creepiness detectors are attuned specifically to social interaction, or if they function in response to the ambiguity of threat in general.

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