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This Week's Citation Classic

Griffitt W & Veitch R. Hot and crowded: influences of population density and temperature on interpersonal affective behavior.
J. Personal. Soc. Psychol. 17:92-8, 1971.
[Department of Psychology, Kansas State University, Manhattan, KS]

This paper demonstrates that high temperature and high population density evoke negative affective states in humans. It also demonstrates that these negative affective states exert negative effects on feelings about other people and about the nonsocial environment. [The *Social Sciences Citation Index*® (*SSCI*®) indicates that this paper has been cited over 160 times since 1971.]

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"The experiment reported in this paper resulted from the convergence of two of my major areas of interest at the time it was conducted. First was my interest in interpersonal attraction stimulated by my major professor, Donn Byrne. In what ultimately became known as a 'reinforcement-affect model of attraction,'[1] our view was that *inter*personal liking and disliking resulted from *intra*personal positive and negative feelings that might be evoked in a variety of ways. Second was an interest in the popular, but untested, assumption that uncomfortable environmental conditions such as high temperatures, high noise levels, crowding, and the like contribute to interpersonal dislike, hostility, and even violence. To the extent that such environments evoke negative feelings, it seemed theoretically and logically likely that social behaviors would be negatively affected by negative environments. Thus, we set out to examine the effects of high temperatures and high population density on liking and disliking others.

"Our attraction methodology was well established and it seemed a relatively simple matter to manipulate the human population density of a given space. Manipulating temperature precisely, however, posed other problems. One needs to control, or at least take into account, humidity and airflow even as the number of people in a room changes radically.

"We were fortunate to have access to laboratory space devoted to studies of the effects of temperature extremes on performance, comfort, and animal behavior. In our 'hot' condition, subjects participated at an *effective temperature* of 93.5° F (109° F, 46 percent relative humidity) and in the 'normal' condition at an effective temperature of 73.4° F (74° F, 93 percent relative humidity). Experiments were run either in high density conditions (4.06 square feet per person) or low density conditions (12.73 square feet per person). After 45 minutes in such conditions, subjects were provided with information about an anonymous person and recorded their feelings about the person. They also recorded their moods and feelings about various aspects of the experiment and environment. As expected, subjects in the 'hot and crowded' conditions reported more negative feelings and moods, reacted to the other person more negatively, and evaluated the experiment and experiment room more negatively than those in the normal temperature and low density conditions. With perspiration flowing, makeup smearing, and clothing soaked, some subjects in the 'hot and crowded' conditions even became verbally abusive toward the experimenter, the psychology department, and the university. We were eminently successful in demonstrating the potential for unpleasant environments to provoke negative social behavior.

"I believe that this article has become a *Citation Classic* because it was the first, using rather tight experimental controls, to demonstrate the potentially negative impact of high temperatures and high population density on social behavior. It also had the benefit of timing. It appeared when serious concern was growing over the 'population explosion,' ghetto living conditions, and when 'environmental psychology' was in its seminal stages."

1. **Clore G L & Byrne D.** A reinforcement-affect model of attraction. (Huston T L, ed.) *Foundations of interpersonal attraction.* New York: Academic Press, 1974. p. 143-70.