

Towards understanding the person-environment interactions behind aggression:
The measurement of atmosphere in an urban bar street

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Aggression in urban nightlife areas affects negatively patrons' enjoyment and sense of safety; perhaps in turn diminishing the economic viability of the area. Preventing aggression thus is important. It is generally acknowledged that aggression emerges through person-environment interactions (Goldstein, 1994). Recently, Kalinauskaite and colleagues (in press) suggested dynamic changes in atmosphere to explain how aggression may arise in a bar street through such person-environment interactions. They defined atmosphere as an attribute of the social-physical context that affects the behavior of groups and individuals by emerging from and feeding into ongoing social interactions.

In the present study, we developed and tested a survey instrument for measuring dynamic changes in atmosphere. The instrument consisted of 18 adjectives (e.g., welcoming or fearful), each of which had to be rated on a 5-point scale with respect to how well they described the atmosphere at a specific time and location. In addition, we explored whether manipulation of the street lighting can affect atmosphere in a positive way (thus potentially preventing aggression to occur).

The study was conducted during 29 nights (Thursdays, Fridays, and Saturdays) on bar street Stratumseind in Eindhoven, The Netherlands. Two different lighting conditions were counterbalanced across the three week days: the regular street lighting and a warmer one. In total, the atmosphere on Stratumseind was measured 860 times, simultaneously but independently, by two observers.

Results indicated fair to excellent inter-rater agreement with ICCs of $r \geq .57$. Hence, for all terms and all 860 atmosphere measurements, we averaged the observers' ratings. Factor analysis revealed three dimensions of atmosphere, together explaining 83.2% of the variance: liveliness, pleasantness, and tenseness. The instrument was sensitive in detecting differences between weekdays and different parts of the street, as well as in detecting changes in atmosphere across the duration of the night. On Saturdays, for example, when the crowd is largest and most heterogeneous, a significant difference in the occurrence of tense atmospheres was found between night hours, with $\chi^2(5)=48.1$ and $p < .01$. Post-hoc Fisher's exact tests indicated that tense atmospheres were comparably more frequent in the last three hours of the night.

We found the atmosphere to be more lively under the warmer as compared regular street lighting, even after inclusion of time, day, and street location as additional predictors (with $\beta = 0.12$ and $p = .05$). No effects on pleasantness or tenseness were found. However, based on this single quasi-experimental field study, no definite claims on the effects of lighting on atmosphere can be made. In addition, whether or not such changes in atmosphere indeed affect the likelihood of individuals to aggress could not be determined in this study. These and other limitations of our work, and its implications will be discussed.

References

Goldstein, A. P. (1994). *The ecology of aggression*. New York: Plenum.

Kalinauskaite, I., Haans, A., de Kort, Y. A. W., & IJsselstein, W. A. (in press). Atmosphere in an urban nightlife setting: A case study of the relationship between the socio-physical context and aggressive behavior. *Scandinavian Journal of Psychology*.