Survey Research Unit
School of Public Affairs
Baruch College / CUNY
1 Bernard Baruch Way
New York, NY 10010

Special Report #3

Neighborhood Noise and its Consequences

A survey in collaboration with

By Arline Bronzaft, PhD, with Gregg Van Ryzin, PhD

December 2004

Executive summary

This Special Report discusses findings of an eTownPanel online survey, conducted in collaboration with The Council on the Environment of New York City, about neighborhood noise. The survey focused on general perceptions of neighborhood noise, specific sources of noise in communities, complaints about noise, and the behavioral and emotional consequences of neighborhood noise.

Compared to respondents nationally, the survey found that New Yorkers reported being bothered more frequently by noise and that they were more likely to have made a complaint about it. New Yorkers also suffer various behavioral and emotional consequences of noise much more often. The most bothersome noises reported by New York City respondents are honking horns, car alarms, car stereos (or boom cars), and traffic. Nationally, respondents were most often bothered by lawn mowing, car stereos (or boom cars), barking dogs, and sirens.

New York City is currently considering a new noise code that addresses some, although not all, of the noises ranked most bothersome by respondents. This survey will be repeated annually in an effort to begin to track the noise problem in New York and the nation.

Methodological note: The survey was conducted from July 10 through July 30, 2004, and included online responses from 710 panelists, 135 of whom live in New York City. The panelists were recruited using the Internet and other sources to participate in online research; they are not a random sample, and thus the results are not scientifically projectable to the larger population. However, results are adjusted by gender, race, age, and geography to more closely reflect the general demographic profile of the US and New York City.

Background

New York Mayor Michael R. Bloomberg's announcement this summer that the City's Department of Environmental Protection had prepared an Updated Noise Code was met with much excitement by the citizens of a city that has been overwhelmed by noises from myriad sources. The Mayor presented this Revised Noise Code to the City Council, the legislative body of New York City, and the Council will examine the revisions, hold hearings inviting citizens to comment on revisions, and then, hopefully, pass legislation that will give New York City a Noise Code that can more appropriately address its growing noise problem.

That noise has diminished the quality of life for New Yorkers is underscored by reports from the city's complaint hotline, 311, which ranks noise as the number one complaint (New York Post, September 16, 2004). The Council on the Environment of New York City (1999) found that noise pollution was one of the top three environmental issues of concern to the City's Community Boards. An updated Noise Code for New York City is indeed

welcome, but more important will be the effectiveness of this noise code to lessen the city's din. The Code should abate the intrusive, disturbing sounds that are bothering citizens and visitors alike but at the same time allow for the exhilarating sounds that have made New York famous. Thus, there must be some measure to assess whether or not the revised Code will indeed abate the troubling noises that have New Yorkers dialing into 311 on a regular basis.

One way to measure the effectiveness of the Code is to examine the number of noise complaints from the City's 311 system, including the types of noises complained about and the manner in which noises were handled by the appropriate agencies, both before the Code was passed and again after implementation. This assessment would, to some degree, answer the question as to whether the Code was effective in abating noise. Of course, such an assessment would also reflect the effectiveness of the agencies charged with enforcing the Code, so it would become necessary to distinguish between the Code itself and the performance of the city's enforcement agencies.

Another way to assess effectiveness would be to survey New Yorkers before the Code is passed and periodically afterwards on how bothered they are by noise, types of noises that disturb them, and whether they are satisfied with their calls to city agencies regarding noise. Questioning individuals directly on how bothered they are by noises and whether or not they complain is a commonly used technique. The Urban Noise Survey (1977), based on data collected from seven United States cities, found that 46% of the respondents rated their neighborhoods as noisy, but only 9% of the respondents had complained about noise. Borsky (1980) would concur with this statement in that he found that only about 20% to 23% of the people bothered by noise actually complain. Kryter (1985) and, more recently, Berglund and Lindvall (1995) came to a similar conclusion. However, a study by Bronzaft, et al. (2000) found that 40% of the respondents to a questionnaire on urban noise complained to authorities about noise. Susan Staples (1996) concluded that not fully understanding the reasons why people fail to complain has prevented us from adequately predicting noise annoyance levels. These studies suggest that complaint data alone may be an incomplete indicator of the true prevalence of noise disturbances, and thus New York City's 311 complaints may well underestimate the scope of the problem.

Thus, both data from call-in complaints to authorities as well as surveying individuals on noise annoyance are necessary methodologies to tap into the actual extent of the noise problem. Yet no one has conducted a recent survey of New Yorkers about the problem of noise, and the more general surveys that have been done fail to ask detailed questions about the specific sources of bothersome noise and the behavioral and emotional consequences of noise. Therefore, this survey was conducted as part of a modest effort to use online research methods to begin a regular survey of New Yorkers specifically on their experiences with noise in the city. The Bronzaft et al. (2000) noise study collected some of its data from individuals who responded to the survey on the League for the Hard of Hearing's website, so there is some precedence for using such methods to study noise. Moreover, the eTownPanel project at Baruch College was created specifically for nonprofit organizations and government agencies to gather timely survey data on important local issues.

An eTownPanel online survey was used to gather preliminary information on perceptions of neighborhood noise, sources of noise, complaints about noise, and the behavioral and emotional consequences of neighborhood noise in New York City and the nation. The use of an online panel, because it tracks and records the responses of many of the same individuals over time, also offers the potential to serve as a gauge of the effectiveness of New York City's Noise Code in the future. Thus, we plan to repeat this survey next year and beyond.

Method

The survey was conducted from July 10 through July 30, 2004, and included online responses from 710 panelists, 135 of whom live in New York City. The panelists are part of the eTownPanel project and were recruited using the Internet and other sources to participate in online research, including web directory listings, Google ads, Craigslist postings, and announcements sent via email to membership lists of various nonprofit organizations in New York City that have partnered with eTownPanel over the years. It is important to point out that the panel of respondents is not a random sample, and so the results are not scientifically projectable to the larger population. However, results are weighted by gender, race, age, and geography to more closely reflect the general demographic profile of the US and New York City. Both national and New York City weights were constructed using simple post-stratification methods.[1]

Table 1 presents the demographic profile of the survey respondents, both weighted and unweighted, and compares this profile to data from the US Census. As the unweighted results in Table 1 show, respondents nationally are disproportionately white, female, and in the 25 to 44 age group. Respondents nationally over-represent the northeast and under-represent blacks, Hispanics, those 65 and older, and those in the lowest income group. The weighted results, by design, more closely mirror the Census figures nationally. The unweighted New York City respondents, compared to Census figures for New York City, are again disproportionately white and female, and they under-represent blacks, Hispanics, those 65 and older, and the lowest income group. The weighted results again bring the profile of New York City respondents into line with Census figures for the city (except for income, which was not a weighting variable). The following results in this report for both New York and the nation are all weighted results.

Findings

The findings below are reported separately for the nation as a whole and for New York City. This section begins with general perceptions of neighborhood noise. It then focuses on sources of noise within a neighborhood as well as complaints made about noise. It concludes with an analysis of the behavioral and emotional consequences of neighborhood noise.

Perceptions of neighborhood noise

Figure 1 compares New York City, similar cities, and the nation in terms of an overall index of perceived neighborhood noise. The index ranges from 0-100 and is based on three questions designed to measure overall perceptions of the level of neighborhood

[1] The weighting procedure involved two steps. First, weights were constructed to bring the sample into geographic balance based on the population of Census regions. This geographic weight was then applied to the data, and new weights were calculated to align the sample to the Census in terms of gender, race, and age. This weighting procedure was carried out separately for New York City and the nation. Income was not used as a weighting variable because of missing data on the income question.

noise.[2] The score for similar cities is a statistically adjusted average representing respondents living in large cities in the northeast. The results show that New Yorkers surveyed perceive somewhat more neighborhood noise than their counterparts in other large, northeast cities. New Yorkers perceive much more neighborhood noise than the average respondent nationally.

A majority of both nationwide and New York City respondents reported that problems with noise have remained the same since last year (**Figure 2**). New Yorkers surveyed, however, are more likely to report that noise problems have gotten worse rather than better.

Sources of noise

New York City respondents reported different top sources of noise problems than respondents nationwide, as indicated in **Figure 3** and **Figure 4**. Nationwide, "Lawn mowing or other power tools" is the top source of noise, followed by "Car stereos or boom cars," "Barking dogs or other pet noises" and "Sirens from police cars, fire trucks, etc." In New York City, "Honking horns" tops the list, followed by "Car alarms," "Car stereos or boom cars" and "Highway or street traffic." The only source of noise that appears in both top-five lists is "Car stereos or boom cars," listed second on the nationwide list and third on the New York City list.

Noise complaints

New Yorkers were more likely than their counterparts nationwide to issue a complaint to their neighbors and to a government helpline, such as 311 (see **Figure 5**). The large difference in New Yorkers use of a government helpline can be seen as an indication, not only of the increased level of noise in the city, but also of the success of New York City's efforts to promote 311 as way for citizens to express their grievances. Still, only 12 percent of New Yorkers surveyed report that they have called 311 in the last year to make a noise complaint.

Behavioral and emotional consequences

New York City residents report that they more frequently experience various behavioral and emotional consequences of noise, compared with respondents nationwide. New Yorkers surveyed are more likely to close their windows, lose sleep, have trouble relaxing, and have trouble reading (**Figure 6**). And New Yorkers surveyed are much more likely to feeling annoyed, angry, upset, tired, anxious, and helpless because of neighborhood noise (**Figure 7**).

Noises most associated with consequences

Correlations were calculated between the various sources of noise and an index of the behavioral and emotional consequences of noise (formed by summing the ratings of behavioral and emotional consequences listed in Figures 6 and 7). The correlation coefficient (Pearson r) measures the statistical association of one variable with another in standardized units. Because being bothered by a noise generally produces more consequences, rather than fewer, the correlations are all positive (with a possible range from 0 to 1). Thus, each correlation measures the extent to which being bothered by a given noise is associated with overall behavioral and emotional consequences.

[2] The three questions asked about overall satisfaction with peace and quiet in the neighborhood, comparison to expected level of noise, and comparison to ideal level of noise in a neighborhood.

Nationally, as can be seen in **Figure 8**, the noises most associated with behavioral and emotional consequences are foremost those caused by neighbors (music, TV or radio, rowdy passersby, or neighbors activity or voices), followed by car stereos (or boom cars), car alarms, and honking horns.

In New York City, as **Figure 9** demonstrates, the noises most strongly associated with behavioral and emotional consequences are car alarms, rowdy passersby, car stereos (or boom cars), motorcycles, neighbors' activity or voices, and honking horns.

Conclusions and Policy Implications

In revising the Noise Code, special attention should be paid to those noises that New Yorkers rank high as disturbing: honking horns, car alarms, car stereos and highway or street noise. That New Yorkers, more than their counterparts nationwide are more likely to lose sleep, have greater difficulty relaxing, are less able to listen to music, television or radio undisturbed, and find it hard to concentrate as a result of noise should hasten the passage of the revised Code. That noises in turn lead to greater anger, annoyance and helplessness amongst New Yorkers indicates that noises have emotional consequences and underscores the importance of lessening the decibel level in New York City.

Neighbor noises rank fifth as well as correlate highly with behavioral and emotional consequences, and so it is important for legislators to examine how to best deal with such noises. In some cases, the Code can handle neighbor complaints (such as noisy parties), but in other cases the Code falls short (for example, proper installation of soft floor coverings). Legislation that would encourage city landlords to enforce those sections of apartment leases that guarantee tenants the "quiet enjoyment of their homes" should be considered.

Educational materials must accompany the passage of the Noise Code to inform people about the hazards of noise, the ways to protect themselves against noise, and the activities individuals can undertake to protect other people's rights to quiet.

It is hoped that the revised Code will be an improvement over the present one, which was forward-thinking when it was first passed over thirty years ago but has not kept up with the times. As an instrument in and of itself, the revised Code should be better able to deal with New York's growing noise problem. However, appearance alone is not the measure of whether the Code will indeed be able to do the job of abating noise in New York City. That is why it is critical to pass accompanying legislation that will evaluate the effectiveness of the Code during the years ahead. If indeed there are sections of the Code that are not able to abate certain noise problems, it is important to overhaul those sections. The Noise Code should not be "written in stone" but rather in a way that allows for improvements and alterations.

REFERENCES

Berglund, B. & Lindvall, T. (Eds.) 1995. Community Noise. Stockholm, Sweden: Center for Sensory Research.

Borsky, P. N. (1969). Effects of noise on community behavior. In Proceedings of the The Third International Congress on Noise as a Public Health Hazard (Washington), ASHA Reports 4, eds, W. D. Ward & J. Fricke. Washington, D. C.: Speech-Language-Hearing Association.

Bronzaft, A. L., Deignan, E., Bat-Chava, Y. & Nadler, N. B. (2000). Intrusive community noisesyield more complaints. Hearing Rehabilitation Quarterly, 25, 116-22, 34.

Council on the Environment of New York City (March 1999). Survey of New York CommunityBoards: Perceptions and priorities concerning New York City's Environment.

Kryter, K. D.(1985). The Effects of Noise on Man. 2nd ed. Orlando, Florida: Academic Press.

Seifman, D. (September 16, 2004). 311 ju$t the ticket for complaint calls. New York Post.

Staples, S. (1996). Human response to environmental noise: Psychological research and public policy. American Psychologist, 51, 143-150.

U. S. Environmental Protection Agency, Office of Noise Abatement and Control (1977).The Urban Noise Survey. Washington, D.C. Contract No. 68-01-4184.

About eTownPanel. eTownPanel is a university-based, nonprofit project that aims to expand the potential of the Internet as a tool for measuring the quality of life in communities across the US and for providing citizen-driven feedback on the performance of local governments. eTownPanel also serves as a cost-effective research tool for local nonprofit organizations and government agencies that seek to understand what citizens think about important local issues. The project currently focuses on New York City but will soon include additional cities and towns from across the US.

For more information visit www.etownpanel.com or email info@etownpanel.com

TABLE 1. Demographic profile of survey respondents (percents)

	The Nation (n=710)			New York City (n=135)		
	Census	Weighted	Unweighted	Census	Weighted	Unweighted
Northeast	19.0	20.9	36.9	100.0	100.0	100.0
South	35.6	35.9	26.4	0.0	0.0	0.0
Midwest	22.9	20.1	21.4	0.0	0.0	0.0
West	21.9	23.1	15.4	0.0	0.0	0.0
White, non-Hispanic	69.1	73.3	84.6	35.0	37.8	73.3
Black or African American	12.3	9.4	5.4	24.5	24.4	7.6
Asian or Pacific Islander	3.7	3.1	4.2	9.7	9.0	9.2
Hispanic or Latino	12.5	10.6	3.0	27.0	22.6	5.3
Other	2.4	3.6	2.8	3.8	6.3	4.6
Male	49.0	46.6	20.9	49.0	48.8	31.1
Female	51.0	53.4	79.1	51.0	51.2	68.9
18 to 24 years	13.4	18.4	9.2	13.1	20.2	11.7
25 to 44 years	40.7	43.6	59.1	43.5	47.0	58.6
45 to 64 years	29.6	31.4	30.4	27.9	24.4	28.1
65 years and over	16.7	6.6	1.3	15.5	8.3	1.6
Less than $25,000	28.7	17.9	16.4	34.9	18.4	13.6
$25,000-$49,999	29.3	37.3	35.2	25.7	29.6	26.0
$50,000-$74,9999	19.5	23.4	27.2	16.7	20.3	22.9
$75,000 or more	22.5	21.4	21.3	22.7	26.5	37.4

Note: Census figures from American FactFinder, 2000 Census Quick Tables, available at www.census.gov.
Weighted results reflect post-stratification adjustments for region, race, age, and gender.

FIGURE 1. Overall index of perceived neighborhood noise (0-100 scale)

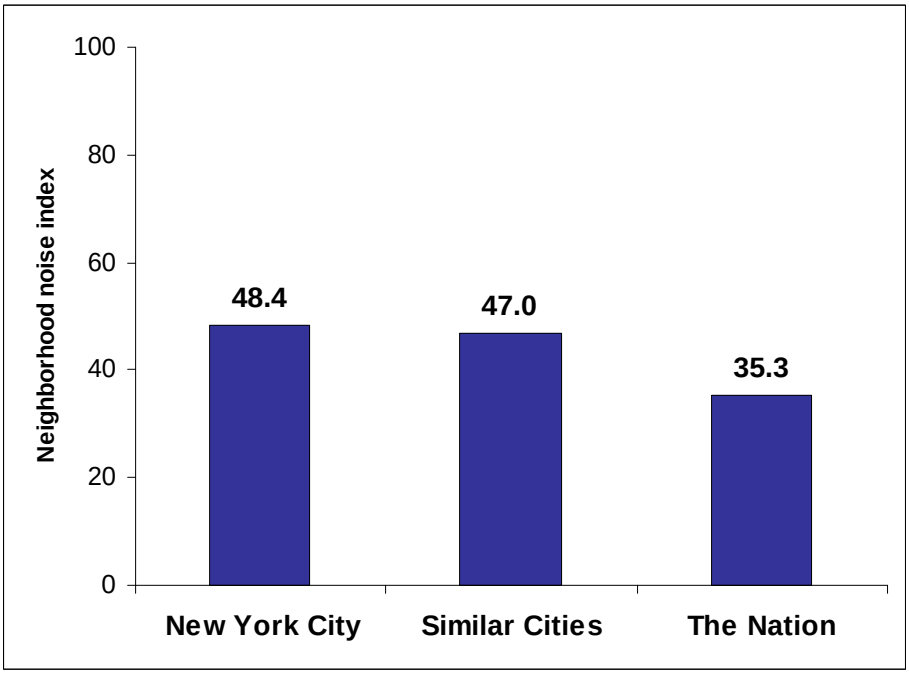


FIGURE 2. Compared to this time last year, would you say the problem of noise in your neighborhood has gotten . . .

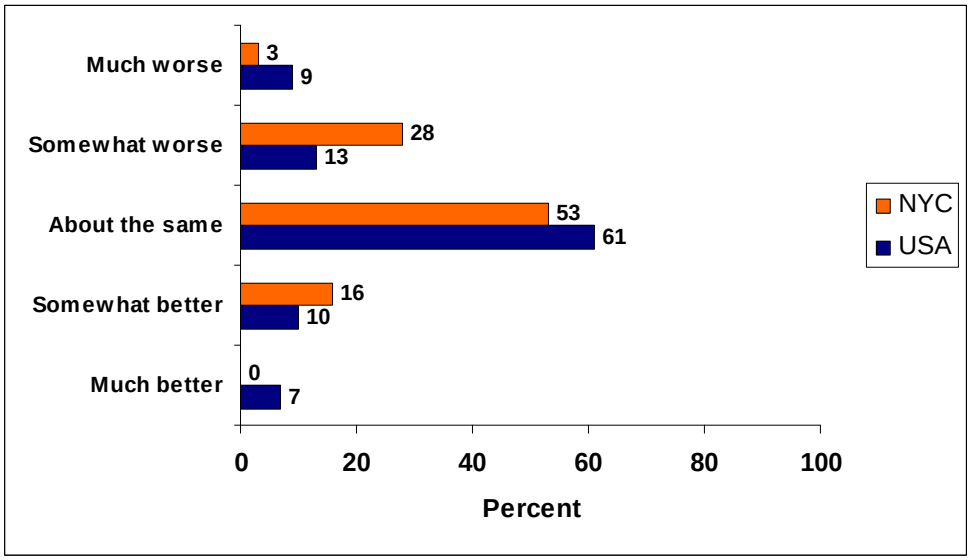


FIGURE 3. How often are you bothered by the following sources of noise in your neighborhood? (The Nation)

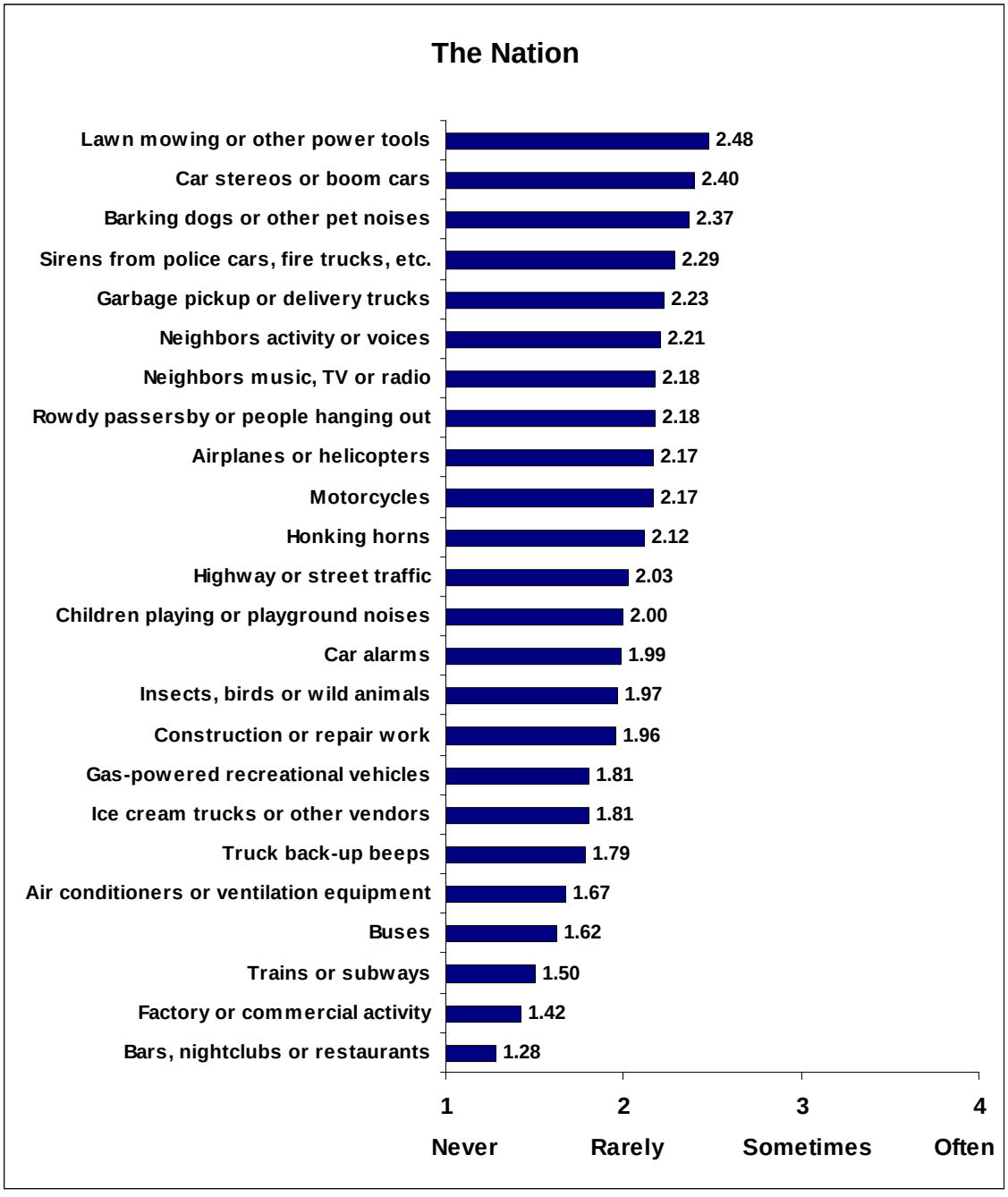


FIGURE 4. How often are you bothered by the following sources of noise in your neighborhood? (New York City)

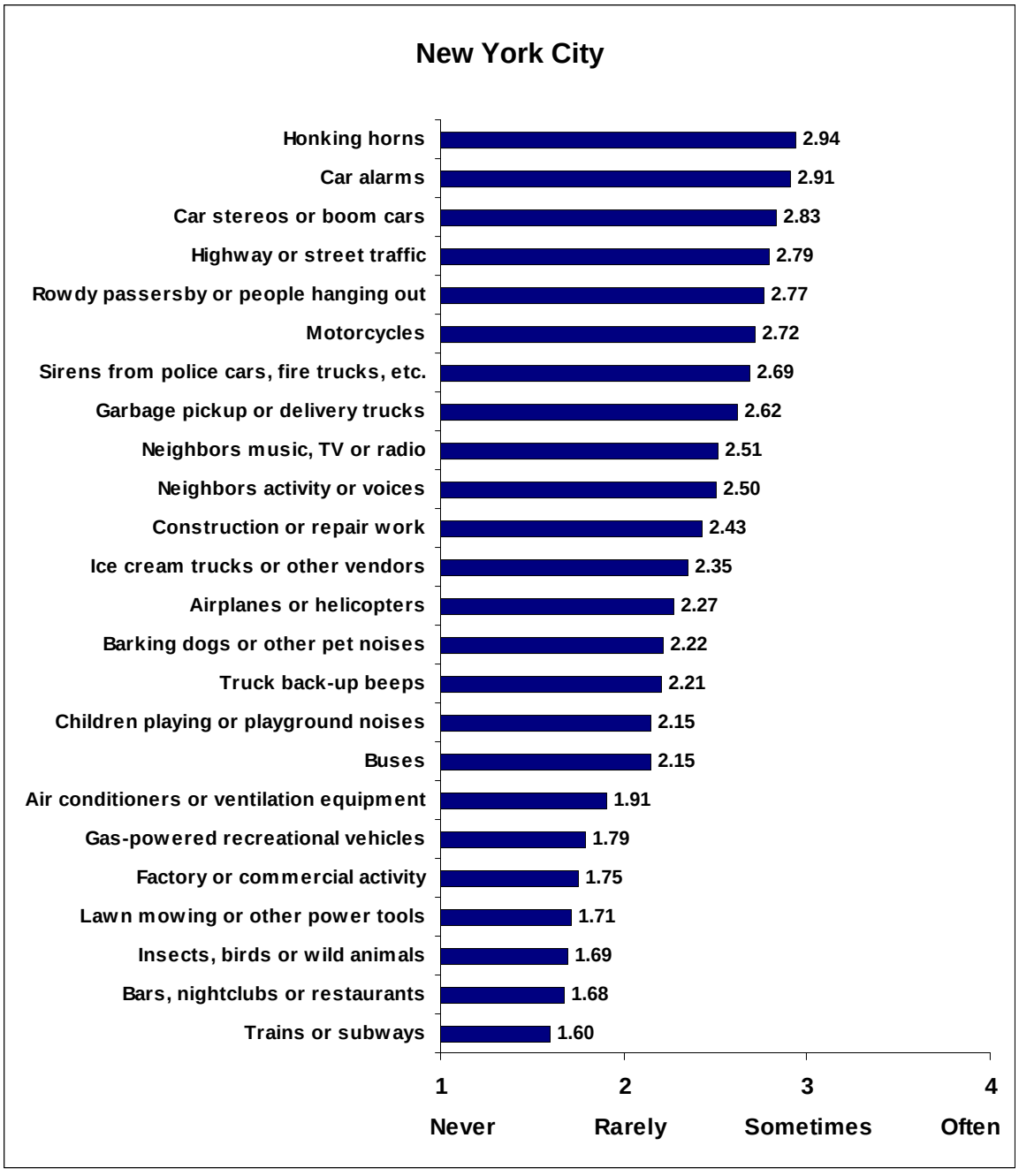


FIGURE 5. In the last year, did you make a noise complaint to any of the following?

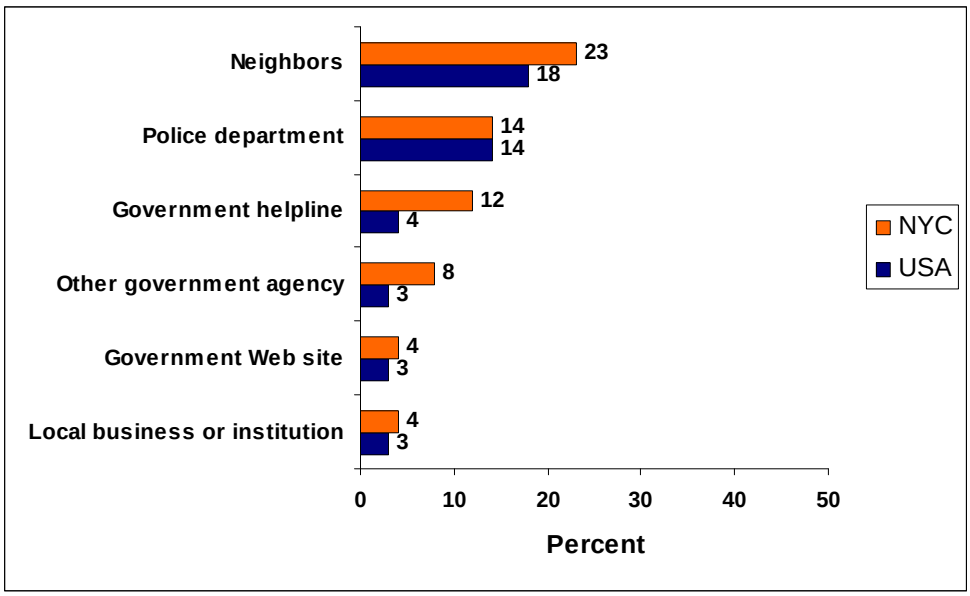


FIGURE 6. Behavioral consequences: "Because of noise, how often while at home do you . . ."

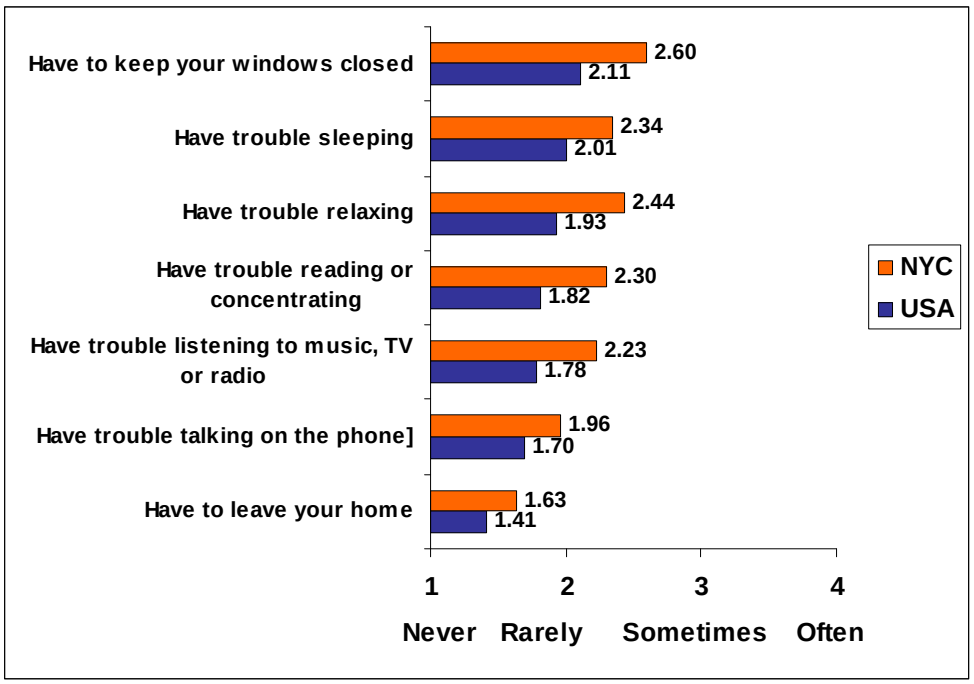


FIGURE 7. Emotional consequences: "Because of noise, how often do you feel . . ."

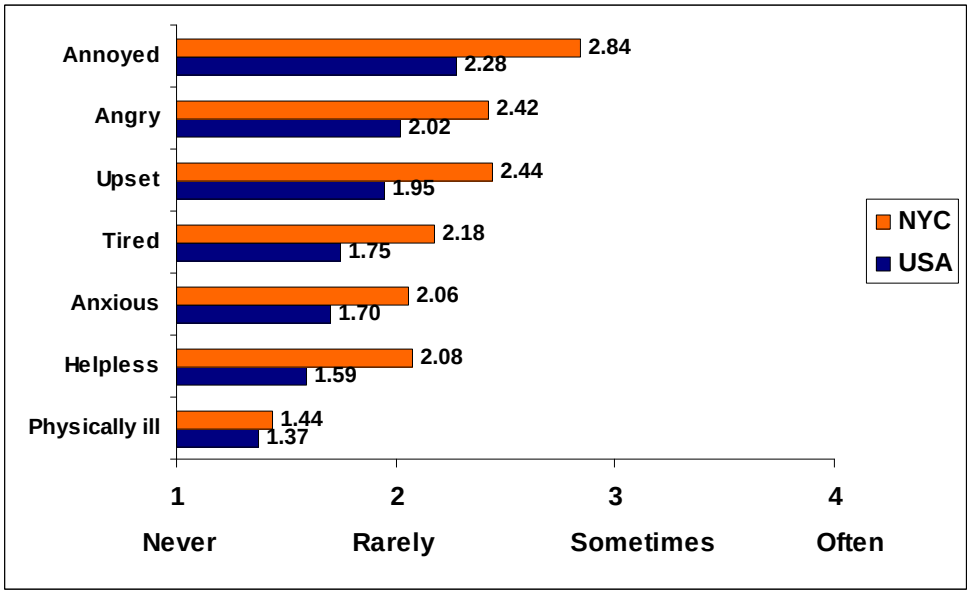


FIGURE 7. Correlation of noises with index of behavioral and emotional consequences (The Nation)

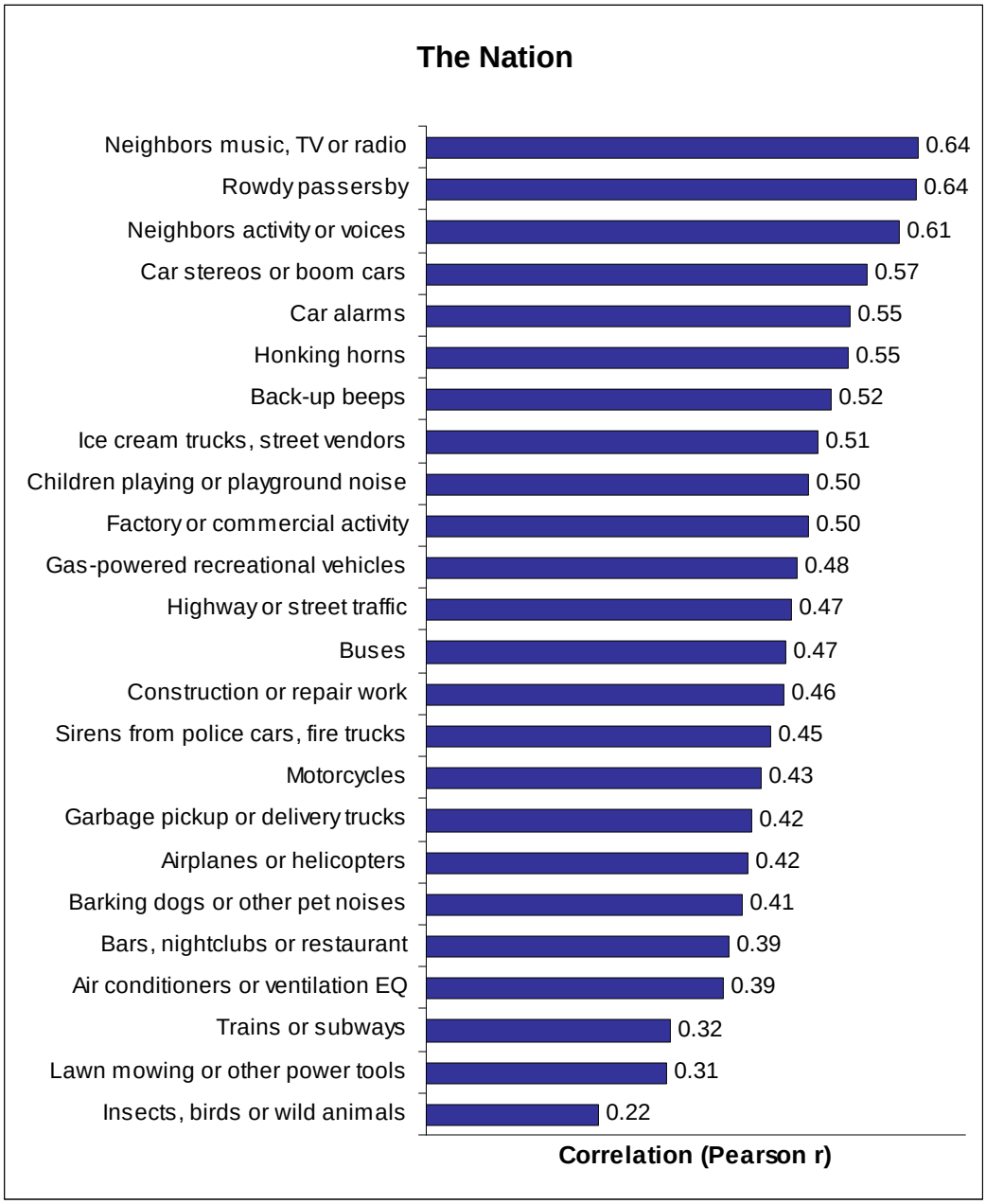
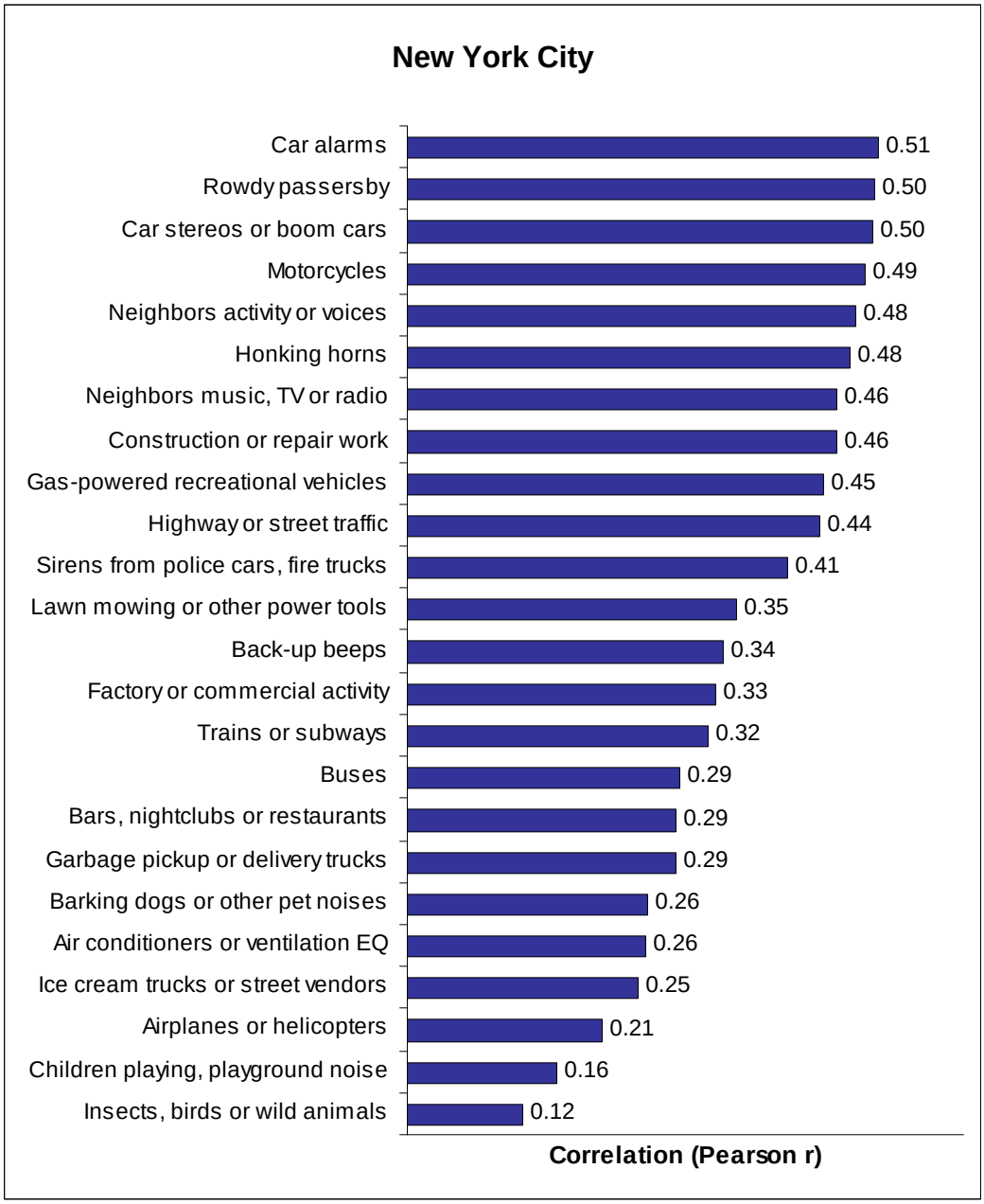


FIGURE 7. Correlation of noises with index of behavioral and emotional consequences (New York City)




eTown
Panel
.com