

Stress and the Family

8. Making Your World More Livable

COOPERATIVE EXTENSION SERVICE

• MICHIGAN STATE UNIVERSITY

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Noise, air and water pollution, traffic jams, crowding—don't we all agree that these elements of our environment are irritating, discomforting, *stressful*?

Yet scientists have trouble agreeing upon just what is a source of stress (a stressor). The fact is that almost anything that one person finds stressful, someone else finds enjoyable.

Thus, while some citizens are busily forming committees to combat rising noise levels, others are happily attending concerts and dances where the noise level clearly exceeds all legislative standards for minimal danger.

Even more puzzling are cases where scientists finally agree on what a stressor is only to see their findings belied in the outside world. For example, a standard laboratory method of stressing a person is to plunge his hand or foot into a bucket of ice water. This sounds dreadful. Yet, every January, members of the New York Polar Bear Society take pleasure in swimming in the frigid waters of the Atlantic Ocean. Even more dramatically, all through the year, thousands of Finns and other Scandinavians dash straight from their sauna baths into ice-cold water or snow.

There is a lesson to be learned from these examples. The amount of stress in the immediate environment cannot be determined by examining the source of stress alone. The context in which the stress occurs and the attitudes and previous experiences of the people affected are also important.

This does not mean that everything is so inconsistent or complicated that no conclusions can be reached. Quite the contrary, there are findings or principles which seem to apply across the board:

- Most stressors in the environment occur at levels below that which would cause immediate physical damage. Smoggy air, crowded buses and noisy streets,

even when uncomfortable, do not, except in a few rare cases, cause immediate blindness, break bones or deafen people. The physical impact of these stressors is cumulative, yet their discomfort is felt almost immediately. The source of the discomfort must be found at levels other than that of gross physical damage.

- Circumstances alter the impact and even the harm of a stressor. The social and emotional context of an event is as important as its physical properties in producing pleasure or displeasure. When the person behind you in the supermarket line gives you a shove, that's aggravation; when your grandchild sneaks up behind you for a surprise hug, it's a delight. Studies of stress must be able to account for the differences produced by these factors.

- People are remarkably adaptable. Things which are at first too unpleasant to bear become less and less so over time and eventually get to be just a routine part of normal life. A person who moves from one part of the country to another may not be able to stand the taste of the new area's drinking water. Yet after a few weeks it seems bland and unflavored to him. The immediate impact of a stressor probably is different from its long-term consequences.

- There are factors and circumstances which can ease or exaggerate the effects of a stressor. These circumstances, mostly psychological or social in nature, provide a fruitful way of looking at stress to see how much and what kinds of damage are being done, and to arrive at strategies for coping with it.

There seems to be contradiction between the common-sense notion that some things are annoying and the findings from study after study that people are able to adapt to work under stress. The authors have found in their research that people may adapt to almost anything, but they pay a price—a cost of adaptation.

Someone surveying the quality of work in a noisy office versus a quiet office might find it hard to notice a difference. It is as if people gird up to work under

stressful conditions and, unless pushed to the limit, are able to manage it. Yet, differences appear when people leave work. Those from noisy, crowded, bureaucratic working conditions are less efficient, civil or tolerant of frustrations after work than those whose conditions are more congenial.

Over the past few years, the authors have been studying the question of how stress bothers people in this indirect, after-effect fashion. We have worked extensively with noise, especially the kinds that people are likely to encounter in their everyday work: i.e., garbled conversation, the sounds of typewriters and calculators and the rumble of trucks. We have also worked with other types of stressors as well: bureaucracy, wage discrimination, traffic and garbage.

We have found three general characteristics of the environment which soften its effects:

- The predictability of a stressor is of great importance in how large its after-effects will be. If the stress is signaled in some way, or occurs with predictable regularity, it will not be as harmful as if it is unpredictable. For example, people who live next to railroad tracks where trains run on a regular schedule very soon do not even notice when one goes by. This is not just a case of adapting, for if the schedule is sufficiently regular, there won't be any after-effects. Routinely, when such people have an overnight guest who asks the next morning, "How can you sleep with those trains rolling by all night?" the reply is, "What trains?"
- The social context in which stress occurs is also of prime importance. Let us say you are in your office trying to read a complicated balance sheet. From the hall comes the sound of a typewriter. If the noise is from your secretary typing your work there are almost no stressful after-effects; if it is somebody else's secretary the after-effects will be quite pronounced.
- The most important factor is what we call a feeling of control. In one experiment, we bombarded two groups of working subjects with identical noise. One group had the option of pressing a button if the noise became too bothersome, to stop it. The other group did not. Most of the people in the first group completed their work without pushing the button, and thus were subjected to the same noisy conditions as the second group. Yet the two groups of people showed startling differences in their ability to do all sorts of tasks after the noise was over. Those who worked in a noisy environment without the button made errors on reading tasks and arithmetic problems, showed little tolerance of frustration and were unwilling to do favors for other people. People who worked in an equally noisy environment, but with access to the button, showed almost none of these after-effects. They had a feeling of control.

Quite often people do not know or do not realize when their performance is affected by stressors in the environment. For example, persons exposed to loud noises while they work will complain about them, but

will not show after-effects if the noises are predictably regular and periodic. If people are subjected to mild noises at unpredictable intervals, they will not report being bothered by them, but will show harmful after-effects.

In trying to improve the environment, it is important to decide whether to try to reduce the obvious things people complain about, which may not affect their performance or cause after-effects; or the less obvious unpredictable elements which affect them subconsciously. Ideally, we would like to do both, but that is not always possible.

Many court cases involving disturbing noise, such as the location of jet airports, hinge on whether or not performance is affected. People living near jet airports may be bothered all day long by the loud sounds of planes overhead, but their performance may not be affected because the noise is regular and predictable. On the other hand, people living in a town which limits noise levels may suffer performance deficits because of low-level noise intrusions by passing trucks and the like, and not realize they are being stressed.

Let us consider a situation which illustrates how people can adapt to direct effects of environmental stress and still show indirect effects:

In a major city, a group of apartment buildings has been built on a platform which spans a highway that is crowded and heavily traveled 24 hours a day. The noise from the traffic is particularly intense when measured inside the buildings. The apartments on the first floor have a background noise level equivalent to having an orchestra playing in the living room.

The fact that people adapt to noise is illustrated by interview reports from people on the lower floors that their apartments are not any noisier and that the noise is no more bothersome than that reported by people on the higher floors, such as the 26th or the 32nd. In addition, when children are tested in school, those who live on the higher floors show no better hearing acuity than those who live on the lower floors. This is an indication that the cumulative effect of the lower-floor noise has not directly harmed the children's hearing.

But when the children are tested in their ability to discriminate kinds of sounds, those on the lower floors were found to have greater problems in discriminating between similar sounds in different words, such as "gear-beer" or "cope-coke." It is as if the lower-floor children "tune out" some sounds. This failure is of great importance because the ability to discriminate sounds is directly related to reading ability; and, in fact, lower-floor children read significantly less well than upper-floor children.

The indirectness of environmental effects often makes it hard for investigators to discover them and to specify what changes should be made and for what reasons.

Given that people adapt to a stressful environment and that this adaptation may have unfortunate consequences, it is instructive to look upon the specialized ways in which control can reduce these effects.

In Stockholm, Sweden, researchers studied the stressful effects of commuting to work by train. They found that beginning-of-the-line passengers—who traveled for 1 hour and 40 minutes—experienced considerably less stress than the mid-line passengers—who traveled only 50 minutes. This unexpected and somewhat strange result can best be explained in terms of “feelings of control” concept. Those who board the train at its first stop can choose whatever seats they want, arrange their parcels and coats as they wish, sit with whom they please and in general structure their own immediate territory and environment. Those who board at mid-journey, although they also get a seat, have much less freedom and control over their own actions and environment.

The moral of the study is that seemingly greater amounts of physical stress may be much easier for people to tolerate if they are accompanied by greater feelings of control and greater actual control.

Now for some final recommendations. Since everybody lives in a stressful environment at one time or another, are there any general rules for combatting stress?

First, relax. It is likely that you are going to adapt to most stresses anyhow and there is nothing to be gained by working yourself up.

Second, try to place your stress in a favorable context. If you can convince yourself that the source of stress is useful or necessary, you will have fewer or no stress after-effects.

Third, try to regularize your environment. The same stressors will be less harmful if they occur predictably. Often you can make them predictable by arranging your own schedule to fit the occurrences of the stress.

Fourth, try to arrange situations so you have the possibility of controlling the stress, even though you may choose not to exercise this control. This may be the single most effective way to minimize its consequences.

Fifth, and perhaps most important, become sensitive to long-term time perspectives. For example, the best way to get a feeling of control over commuting might be to drive alone in your car so that you can choose the route, the speed and the time at which you travel. In the short run, this may make commuting less stressful than traveling by bus or by train. Yet, clearly, in the long run, as we are all beginning to realize, a nation of people all on the road at the same time will result in greater stress and harmful consequences to almost everybody. Sometimes a moderate stress must be endured in order to avoid ultimate disaster.

We live in a stressful environment, and it is doubtful that this general fact of life will ever be changed. We are, however, learning more about what causes stress, where to look for its effects and how to moderate it. If we can achieve greater consensus about our social values, we can use our knowledge of stress; and with an astute combination of personal and public social engineering, we can provide modifications necessary to make even a stressful world more livable and pleasant.

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