EFFECTS OF NOISE

In general, it is plausible( ) to suppose( ) that we should prefer( ) peace and quiet to noise. And yet most of us have had the experience of having to adjust to sleeping in the mountains or the countryside because it was initially( ) 'too quiet', an experience that suggests that humans are capable( ) of adapting to a wide range of( ) noise levels. Research supports this view. For example, Glass and Singer (1972) exposed( ) people to short bursts( ) of very loud noise and then measured( ) their ability to work out problems and their physiological( ) reactions( ) to the noise. The noise was quite disruptive( ) at first, but after about four minutes the subjects( ) were doing just as well on their tasks as control subjects who were not exposed to noise. Their physiological arousal( ) also declined( ) quickly to the same levels as those of the control subjects( ).

But there are limits to adaptation( ) and loud noise becomes more troublesome( ) if the person is required( ) to concentrate ( )on more than one task. For example, high noise levels interfered( ) with the performance of subjects who were required to monitor( ) three dials( ) at a time, a task not unlike that of an aeroplane( ) pilot ( )or an air-traffic ( )controller (Broadbent, 1957). Similarly( ), noise did not affect a subject's ability to track( ) a moving line with a steering( ) wheel( ), but it did interfere with the subject's ability to repeat numbers while tracking (Finkelman and Glass, 1970).

Probably the most significant( ) finding( ) from research on noise is that its predictability( ) is more important than how loud it is. We are much more able to 'tune out( )' chronic( ) background( ) noise, even if it is quite loud, than to work under circumstances( ) with unexpected( ) intrusions ( )of noise. In the Glass and Singer study, in which subjects were exposed to bursts of noise as they worked on a task, some subjects heard loud bursts and others heard soft bursts. For some subjects, the bursts were spaced( ) exactly one minute apart (predictable noise); others heard the same amount( ) of noise overall( ), but the bursts

	Unpredictable Noise	**Predictable Noise**	**Average**
Loud noise	40.1	31.8	35.9
Soft noise	36.7	27.4	32.1
Average	38.4	29.6	

Table 1: ***Proofreading Errors and Noise***

occurred at random intervals (unpredictable noise). Subjects reported finding the predictable and unpredictable noise equally annoying, and all subjects performed at about the same level during the noise portion of the experiment. But the different noise conditions had quite different after-effects when the subjects were required to proofread written material under conditions of no noise. As shown in Table 1 the unpredictable noise produced more errors in the later proofreading task than predictable noise; and soft, unpredictable noise actually produced slightly more errors on this task than the loud, predictable noise.

Apparently( ), unpredictable noise produces more fatigue( ) than predictable noise, but it takes a while( ) for this fatigue to take its toll( ) on performance.

Predictability is not the only variable( ) that reduces or eliminates( ) the negative effects of noise. Another is control. If the individual( ) knows that he or she can control the noise, this seems to eliminate both its negative effects at the time and its after-effects. This is true even if the individual never actually exercises his or her option( ) to turn the noise off (Glass and Singer, 1972). Just the knowledge that one has control is sufficient( ).

The studies discussed so far( ) exposed people to noise for only short periods and only transient( ) effects were studied. But the major worry about noisy environments is that living day after day with chronic noise may produce serious, lasting( ) effects. One study, suggesting that this worry is a realistic( ) one, compared( ) elementary school ( )pupils who attended schools near Los Angeles's busiest airport with students who attended schools in quiet neighbourhoods (Cohen et al., 1980). It was found that children from the noisy schools had higher blood pressure and were more easily distracted( ) than those who attended the quiet schools. Moreover, there was no evidence of adaptability( ) to the noise. In fact, the longer the children had attended the noisy schools, the more distractible they became. The effects also seem to be long lasting. A follow-up( ) study showed that children who were moved to less noisy classrooms still showed greater distractibility( ) one year later than students who had always been in the quiet schools (Cohen et al, 1981). It should be noted that the two groups of children had been carefully matched( ) by the investigators( ) so that they were comparable( ) in age, ethnicity( ), race( ), and social( ) class.

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