

## Environmental Improvements



Interventions can take place to lessen the impact of various environmental stressors. Buildings can be soundproofed, traffic calming measures can be introduced and laws can be made to reduce atmospheric pollution. But is it possible to go further than this? Rather than simply lessening the negative impact of physical stressors, is it possible to modify the physical environment to produce direct positive benefits? The evidence seems to suggest that it is. This article looks at how the use of music and the construction of green spaces may have benefits for quality of life.

### Music

In the article on noise, other people's music was cited as a potential source of problematic noise in the environment. However, under certain circumstances, it appears that music can have beneficial effects on human functioning. The key distinction here, it seems, is between noise as unwanted sound and music as *wanted* sound (Cassidy, 1997). Most people find music pleasant, although there is considerable variation in which music people prefer. However, it might be suggested that exposure to music, as a pleasant experience, may help to alleviate stress. Some research (e.g. Ramos, 1993)

suggests that people are prepared to wait for longer on the telephone if music is playing, which could account for the popularity of 'on hold' music among large companies who take many telephone enquiries. So exposure to music (which triggers positive emotions) can help offset the negative emotions associated with a minor annoyance. Other studies have found that music can have a positive effect on immune functioning. Charnetski and Brennan (1998) measured secretions of immunoglobulin A (IgA, an important chemical in the immune system) secretions in participants under four conditions. Compared to participants who were exposed to clicks and tones, a radio broadcast or silence, participants exposed to 'Environmental Music' ('muzak') showed increased IgA secretions, suggesting that music can enhance immune functioning.

Another research area concerns the impact of music on consumer behaviour. Because of the impact music can have on emotion, some researchers have asked whether it can be used to manipulate people's purchasing decisions. It appears that it can, but only for certain types of purchase. Consumer psychologists distinguish between the degrees of cognitive and emotional involvement required by different types of purchase. In other words, some purchase decisions are made based on in-depth thinking (e.g. cameras and computers) whereas others are based on how the potential buyer is feeling (e.g. fashion, alcoholic drinks and many other 'impulse buys'). Predictably, it seems that the appropriate choice of music can increase a person's propensity to buy items with a high emotional but low cognitive involvement. However, it appears to have little or no effect on

high cognitive involvement purchase decisions (Bruner, 1990).

### *The 'Mozart Effect'*

Over the past few years, much of the interest surrounding the positive effects of music has focused on a phenomenon sometimes called the 'Mozart effect', whereby, it is claimed, listening to certain types of classical music can enhance certain aspects of cognitive functioning. Rauscher et al (1993) were amongst the first to make such a suggestion. They tested 36 college students on a variety of cognitive tasks under three conditions. In the first condition, students spent ten minutes listening to Mozart before taking the tests. In the second, the students listened to ten minutes of relaxation instructions and the third condition was a control (ten minutes of silence). Rauscher et al found that the students in the 'Mozart' condition performed significantly better on a spatial reasoning task than students in the other two conditions. However, the effect was rather short lived and did not persist beyond about 10 minutes. Raucher et al (1995) carried out a more extensive study on 79 participants over 5 days and reported similar findings. Other studies have replicated Raucher's et al findings with other composers whose music is of similar complexity and structure (e.g. Rideout et al, 1998).

Despite a certain amount of media excitement about the possibility that 'Mozart makes people more intelligent', the actual usefulness of these findings is doubtful. A number of studies have failed to replicate Raucher's et al initial findings (e.g. Stough et al, 1994; Steele et al, 1997) although many such studies did not test for the same cognitive skill as in the Raucher studies (e.g. Steel et al examined backward digit span).

Studies that have used precisely the same measure as Raucher et al have tended to produce positive findings (Weinberger, 2000). All the same, it is open to question whether a short-term improvement in a highly specific skill is of any real-world use. Weinberger (2000) argues that it is not. He suggests instead that there are less transient and more useful psychological benefits to be gained from the effortful study of music in the long term. Nonetheless, given the pleasure that may be obtained from music and its potential to relax the listener, it would be wrong to dismiss music out of hand as a positive use of sound. Even if music has no measurable effect on performance, it has the capacity to improve the quality of our environment.

### **Urban Green Spaces**

One of the main social effects of a variety of stressors is to increase aggression. Kaplan (1995) suggests that in urban environments heightened aggression is due to mental fatigue. The urban environment and urban living are very rich in a variety of stimuli such as traffic, telephones, people and so on. Urban dwellers are constantly called upon to deal with large amounts of information, to make complex decisions and evaluate a large number of perceived threats from ranging from job insecurity to crime. Each of these factors makes demands on the individual's information processing ability. Chronic exposure to such an environment eventually overstretches the person's ability to process information resulting in mental fatigue. Mental fatigue is a state characterised by inattentiveness, impulsivity and irritability (Kuo and Sullivan, 2001).

A belief in the restorative powers of nature is enshrined in philosophies

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and artistic traditions from all over the world. Recently it has become clear that there are real benefits to be gained from allowing people to be exposed to natural environmental features such as trees, plants and flowers. For example, Mooney and Nicell (1992) found that violent outbursts by Alzheimer patients were lower in care facilities with gardens and Rice and Remy (1998) suggested that some prison inmates reported lower levels of hostility after involvement with a gardening project.

Of course, these findings may not be directly attributable to exposure to nature. Care facilities with gardens may offer a higher standard of patient care and involvement with any constructive activity may alleviate hostility in prison inmates that would otherwise arise from boredom and confinement. However, at least some research suggests that natural features in themselves may bring benefits. Kuo and Sullivan (2001) studied 145 public housing residents randomly assigned to buildings with varying levels of natural features (e.g. nearby grass and trees). They found a strong relationship between nearby nature and mental fatigue, with residents in relatively barren surroundings reporting higher levels of mental fatigue and poorer attentional functioning. They also found a relationship between nearby nature and aggression and violence, with residents of barren buildings reporting higher levels of both than those living in greener buildings. Kuo and Sullivan conclude that access to natural environmental features reduces the attentional load on local residents, leading to lower mental fatigue and, hence, lower aggression. The implication of these findings is that urban planners should build into the environment more green spaces. These should not be regarded as a

luxury, but rather as having an important part to play in the reduction of low-level, day-to-day aggression and violent crime.