Noise

Noise is unwanted sound. There is marked variation between people in whether any given sound will be experienced as noise. For example, one person may like to listen to music at volumes that another person would consider intolerable. However, even the most committed music fan is unlikely to want to listen to loud music all the time. It is one thing to enjoy a high volume of music at a concert or in a club but rather different to be distracted by it when trying to revise for an exam. Whether a sound is experienced as noise depends on three main factors. These are:

- The nature of the sound.
- The nature of the person exposed to it.
- The context in which exposure occurs.

Noise then (as distinct from sound) is a **subjective** phenomenon that depends partly on the characteristics of the sound but also on the person being exposed to the sound and the situation they are in.

Perception of Noise

Glass and Singer (1972) identify three main factors that seem to determine whether noise will be experienced as distressing. These are volume, perceived control and predictability.

Volume

Loud sounds can cause discomfort in the listener. Sound intensity is usually measured on the decibel (dB) scale. The dB scale is a **logarithmic** scale, so each increase of 10dB represents a doubling of the intensity of the sound being measured. It is generally recognised that exposure to sound intensities of 90dB and above (e.g. a petrol-driven lawnmower) causes psychological discomfort. Exposure to 90 dB for a period of eight hours usually results in permanent hearing damage. Exposure to sound levels of 130dB and more causes physical pain.

Perceived control

However, it is worth noting that the absolute volume of a sound (in dB) is not necessarily important when considering whether it might qualify as disturbing noise. As Cassidy (1997) observes, the relatively low level of sound generated by someone else's personal stereo can be a significant source of discomfort if you are sitting next to them on a long flight. This phenomenon is related to the individual's **perceived control** over the sound. Generally, individuals are less disturbed by noise over which they feel they have some control.

Predictability

A third factor affecting whether noise becomes a problem is its predictability. If the noise appears in a regular way then it is easier to **habituate** to it than if the noise is apparently random. For example, urban-dwellers may find themselves able to 'tune out' the constant hum of traffic, but may find the intermittent sound of road works highly disturbing.

Try This…

Make a list of some different sources of noise that have affected you recently. Assess each source according to its volume, controllability and predictability. According to your assessment, which of these factors is most associated with annoying noise?

Individual Differences

Research has shed some light on the factors that render some individuals more susceptible to noise than others. It might seem obvious that the degree to which a person is affected by noise will depend to a certain extent on how sensitive their auditory system is. However, it does not seem to be the case that people with more sensitive hearing (as measured in terms of **auditory threshold**) are generally more susceptible to the effects of noise (Stansfeld et al, 1985). One factor that does seem to influence susceptibility to noise is **personality**.

Personality refers to those characteristics or traits on which individuals vary and which influence them to behave consistently across different situations. Regarding noise perception, a number of personality dimensions have been studied. These include the introversion-extraversion and the type A – type B dimensions.

Introversion-extroversion

Eysenck (1964) suggests that introverts have a higher baseline level of CNS arousal than extroverts. As such, they are theoretically less tolerant than extroverts of high levels of external stimulation including noise. Furnham and Bradley (1997) tested this hypothesis by comparing the performance of introverts and extraverts on cognitive tasks either with or without music. They found that music led to poorer performance by introverts but in extraverts performance was similar regardless of whether there was music or silence. This finding is in line with Eysenck's theory, but it is worth pointing out that the hypothesis that introverts are more sensitive than extraverts to noise has not been consistently supported (Geen et al, 1985; Cassidy, 1997).

Type A – Type B

According to Friedman and Rosenman (1974) the Type A personality is characterised by high levels of time-urgency, competitiveness and hostility. Type B personalities, by contrast, are rather more relaxed and 'laid back'. Research indicates that Type A personalities are better able to 'shut out' noise and hence their performance on cognitive tasks is less adversely affected by noise than Type Bs (Collins-Eiland et al, 1986).

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