Our Everyday Assumptions

There are aspects in our cognitive systems, namely those used in perception, that operate under certain assumptions to help model our environment. Our sensory perceptions operate under these assumptions constantly that we don’t notice ourselves making them. In this paper I will cover three examples of assumptions made by aspects of the cognitive system: (1) the auditory system assumes that relationship of loudness and source distance, (2) the olfactory system assumes the relationship of odour and hazard, and (3) the visual system assumes perceptual constancy during visual change.

Loudness of objects allow the auditory system to gauge their distance where it assumes that, at a constant acoustic power from the object, loudness (acoustic intensity) is greater for objects closer to the observer and is less for objects farther. This assumption is reasonable since certain attributes of sound is perceived differently by the observer as the sound travels certain distances. A study has shown how the relationship between the three variables determine what is perceived of the objects in the environment (Zahorik & Wightman, 2001).

The second example is the assumption that the olfactory system makes regarding scents and hazard recognition. The assumption is that unpleasant smell is associated with hazardous material like poison and that pleasant smell is associated with available food. This assumption is reasonable because most objects give off a distinct smell that animals recognize to determine if something is safe to eat or not. The olfactory system and its other functions were explored in a study involving patients who have lost their sense of smell (Croy, Negoias, Navakova, Landis, & Hummel, 2012).

The last example involves the assumption of perceptual constancy of the visual system during a change in the visual field. One of the things perceptual constancy assumes is that regardless of the perceived size of on object, the true size of the object remains the same. It’s a reasonable assumption since it is a learned association that objects do not change sizes regardless of how they are visually perceived. The model of the environment is made with perceptual constancy based on the scaling factor, depth perception, and other aspects that the visual system employs (Qian & Petrov, 2016).

Making assumptions such as those listed above make assessing of the perceived environment quicker. This is valuable when assessing a changing environment and quick reactions are important (i.e., driving).
References

