
Editorial Note

Odor and odorant: a terminological clarification

In everyday life it seems quite natural to interpret sensations as properties of objects. Thus, to the layman the terms ‘odor’ and ‘smell’ refer both to the volatiles emanating from a source as well as to the sensation they evoke. Although this presents few problems for the tasks of everyday life, in olfactory research it is, of course, important to make a distinction. However, while we generally agree that the molecules giving rise to an odor sensation should be referred to as *odorants*, the usage of the term *odor* is less clear; for example, as in ‘the response to the odor of . . .’ or as in ‘odor plume’. The first case represents the laymans’ blurring of source and sensation and the second case a misnomer, since ‘odorant plume’ is clearly meant.

Perhaps the following terminological clarification, which was outlined in a previous review (Hudson, 1999, *J. Comp. Physiol.*, 185A: 297–304), can be useful. *Odorants* are molecules, properties of the external world objectively definable in terms of their physico-chemical characteristics and capable of being transposed by particular nervous systems into odors. *Odors*, on the other hand, are the products (constructs if one will) of nervous systems and thus potentially open to the many modulating influences of what might be broadly thought of as ‘mind’. Thus, when referring to

olfactory phenomena prior to and including reception of molecules at the sensory surface we are dealing with odorants and in the chain of subsequent events, whether consciously perceived or not, with odors.

This terminological problem is not unique to olfaction. For example, it is now clear that colors as such do not exist in the external world and that it is only light of different wavelengths which falls on the retina. The sensation of color results from the activation of specialized receptors and subsequent processing by the central nervous system. Thus, colors are the product of the brain, and odors presumably as well.

In conclusion, we should take particular care, including in the preparation of submissions to *Chemical Senses*, in applying this terminological distinction. As with most definitions, it might not always be readily applicable or appropriate and gray zones surely exist. In general, however, adhering to it should help sharpen debate and help more precisely define the explanatory power of studies conducted at different levels of the system.

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on behalf of the Executive Editors