

The main body of the thesis deals with selected factors underlying the considerable variability in human olfactory abilities and some odour awareness-related measures, addressed in samples ranging in age from middle childhood to young adulthood. The thesis consists of two parts. The first part (**Chapter 1**), first presents the major advances and developments that brought about something of a renaissance of scientific interest in the human sense of smell, including the recent proliferation of psychophysical studies, both basic research and clinical. Next, an outline of olfactory psychophysical measures and related olfactory abilities that are of relevance to the studies presented in this thesis is provided. Subsequently, the selected factors contributing to interindividual differences in olfactory abilities, that have been addressed by this thesis, are reviewed, namely the effect of sex (or gender), which is approached from a developmental perspective, childhood gender nonconformity, and personality. Finally, *intraindividual* fluctuations in olfactory performance are also mentioned in brief. Next, the focus shifts to odour awareness by first introducing the various approaches that can be adopted to get closer to the real-life context as opposed to laboratory setting (where most olfactory studies continue to be carried out), of which assessing odour awareness is one option. After that, a definition of odour awareness is given and the two particular tools which have been used in our studies are briefly introduced. Finally, the factors contributing to differences in odour awareness which have been identified thus far using these two tools, namely age and sex/gender, are reviewed. The second part is comprised of seven studies, published or submitted to peer-reviewed academic journals that address the effects of the selected factors. These include, firstly, the level of intactness of olfactory function, with a focus on a phenomenon known as *isolated congenital anosmia*, characterised by a lack of the sense of smell since birth in otherwise healthy individuals. The study given in **Chapter 2** shows increased social insecurity, risk of depressive symptoms, and of household accidents, while the study in **Chapter 3** explores potentially different patterns of food appreciation (in

relation to *sensory-specific satiation*) in individuals with congenital anosmia, thus highlighting some of the domains in which the sense of smell seems to play a major role. Over the course of ontogeny, the effects of a major demographic factor, sex (or gender), become increasingly evident not only in olfactory abilities, but also in odour awareness, which has attracted considerable attention from both researchers and the general public. We show the cross-cultural consistency of this sex (gender) difference in a sample of pre-pubertal and pubescent Czech and Namibian children in **Chapter 4**. Also, the formation of olfactory preferences and affective responses to odours is likely still in progress in prepubertal children, and in **Chapter 5** we show the relation of olfactory experience, assessed in terms of a degree of the ability of odour identification, and perceived odour pleasantness. In **Chapter 6**, we turn to the population of adolescents and young adults, showing an association between specific olfactory abilities and personality traits, particularly neuroticism and its facet, anxiety. Finally, in young adults, we demonstrate that significant variability in olfactory abilities is not limited to that *between* the sexes, but exists *within* the sexes as well, and relates to sex-atypicality, assessed here in terms of *childhood gender nonconformity* (**Chapter 7**). The study given in **Chapter 8**, carried out on the identical sample, brings together all the major topics addressed in the previous chapters, namely those of both inter- and intra-sexual differences in olfaction, the effect of experience, and odour awareness, establishing a link between self-reported, retrospectively assessed long-term olfactory experience via engagement in specific olfaction-related activities since early childhood, odour identification, and odour awareness exhibited at present.