

Scented Mastery: Unearthing Cultural and Environmental Impacts on Odor Perception

Olfaction, often one of the least explored yet intriguing senses, enriches our lives by allowing us to savor the scents of food, fragrant flowers, and beloved fragrances. Simultaneously, it acts as our early warning system, vigorously reacting to threats like decay or waste. What's less known is that a compromised sense of smell serves as a subtle yet significant signal, indicating potential health issues, including neuropsychological disorders like Alzheimer's disease. Even fewer are aware of the substantial role olfaction plays in dietary habits, mate selection, and even the formation of bonds between parents and children. However, in today's world, about 4% to 5% of Western populations suffer from critical olfactory impairments, with an additional 15% to 25% facing various olfactory challenges. Can we endeavor to assist these individuals by studying the olfaction abilities of indigenous communities inhabiting the Amazonian jungle or Papua?

Over a decade ago, during our research in a Tsimane' village in the Amazon, we observed how the scent of gasoline, detectable solely by the locals, served as the initial sign of approaching boats. At that time, our two-person research team was not only unable to perceive this odor but also found no other distinct visual or auditory cues (I have elaborated on this fascinating, in my opinion, story in a co-authored book titled "Psychological Journeys/Podróże psychologiczne"). This incident prompted us to ponder how much more advanced the olfactory abilities of indigenous Amazonian populations are in comparison to Western and industrialized societies. Collaborating with Agnieszka Sorokowska and Thomas Hummel (who currently supervises a foreign scholarship in this project), we decided to conduct a straightforward study comparing the olfactory thresholds of Europeans and Tsimane'. This study confirmed our observations about the exceptional olfactory abilities of traditional communities (a few years later, further research conducted on a different group in the Malay Peninsula somewhat supported our findings).

One might inquire: are the outcomes among the Tsimane' and Semaq Beri isolated cases, or could cultural and environmental differences have such a significant impact on human olfaction? Do traditional populations indeed possess highly sharpened olfactory senses compared to contemporary societies? Does this pertain solely to threshold of odor detection, or does it extend to other olfactory abilities such as odor identification and discrimination? If so, what are the sources of these disparities?

In light of these questions, our proposed grant project suggests comprehensive research that will be conducted within the Asmat community inhabiting Western Papua. The Asmat people, numbering around 110,000, reside along the southwestern coast of Papua, adjacent to the Arafura Sea, primarily within the boundaries of the Lorentz National Park. The term "Asmat" refers not only to the people themselves but also to the geographical region they inhabit. Three distinct subpopulations of the Asmat will be examined. Given the genetic homogeneity of the population, the primary variable for grouping will be the level of modernization/industrialization within the studied community. Data obtained in Papua will also be compared with a European sample.

The objective of the proposed project is not only to meticulously investigate differences in olfactory abilities among the studied groups but also to validate hypotheses aimed at explaining the observed distinctions. The mechanisms underlying these differences may have practical applications - we believe that, in addition to advancing theoretical knowledge, the insights derived from this research could potentially aid individuals with olfactory impairments residing in developed societies.