

How we perceive our environment is crucial in shaping our understanding of the world. There is growing evidence that differences in processing of visual input occur from the earliest stages of processing, and people do not only react to the same stimulus in a different way, but actually perceive something different.

The specific patterns of visual attention have been observed e.g. in depression, anxiety disorders, phobias, eating disorders and addictions. In all these cases different visual attention patterns are considered pathological factors and possible part of the mechanism of disorders persistence. The question emerges, whether differences in visual attention patterns could be observed in the non-clinical population and whether such specific patterns could be beneficial?

A construct believed to constitute a base for differences in processing of sensory input from the earliest stages is sensory sensitivity. Initially it was defined as the capability to notice subtle differences between the stimuli, that is not caused by the sensory apparatus efficiency (e.g. visual acuity), but rather an ability to more effectively process this sensory input. Sensory sensitivity in this understanding correlates with the lowered threshold for noticing subtle differences, but also with preference to more subtle stimuli and being prone to overstimulation. Due to the latter it was more often considered a disadvantage or even a risk factor for developing a pathology, what might be surprising, as being more aware of the environment - its subtleties and changes - should lead to more tailored responses to different stimuli and better adaptation, and be rather advantageous.

The adaptation aspect has been taken into consideration by more contemporary theories of sensory sensitivity (sometimes called in this context 'environmental sensitivity'), that focus less on the sensory input processing, but rather on the more general disposition to respond to the signals from the environment the certain way - 'quickly' or 'slowly, but more carefully', observed in different species. Probably the most widely known theory describing high sensitivity in such frames is Elaine Aron's Sensory Processing Sensitivity (SPS). According to Aron, SPS is biologically determined, increased susceptibility to all the inputs from the environment. What is worth noticing, SPS includes in one framework perceptual sensitivity - being able to notice subtle stimuli and at the same time being more easily overwhelmed by intensive stimuli - and affective sensitivity, i.a. sensitivity to subtle emotional clues. Such an approach, while seeming simplified, proved to be effective in diagnosis and planning of psychological interventions and inspired a large amount of scientific studies trying to explain the functioning of HSP. However, the relation between perceptual and emotional sensitivity is still far from clear: what comes first? Do highly sensitive persons notice more aspects of the environment - and that includes subtle emotional clues that may come unnoticed by others? Or it is rather the other way around - the affective meaning guides attention (and we know that is true, affective stimuli are privileged in cognitive processing, from the simplest mechanisms of perception and orientation, to more complex - memory, decision making, and even creative thinking) and HSP are even more affected by this effect? Or both effects are interconnected, and perceptual intensity leads to changes in emotional preference - for example, a highly sensitive person may perceive an object as negative only because it is too intensive and overwhelming? Until now, there were no studies taking into consideration both perceptual and emotional aspects of the stimuli.

The proposed grant project aims to disentangle the relation between the perceptual and emotional intensity of stimulus and its impact on visual attention, conscious evaluation and autonomic correlates of affective reaction in the context of Sensory Processing Sensitivity. The essential part of the project will be experiments with the use of an eye tracker, that will allow to examine temporal and spatial characteristics of visual attention to the stimuli varying in emotional load and intensity. The aspect of depth of processing, and its impact on cognitive performance, will be also taken into consideration. The attentional and psychophysiological correlates will be measured for the groups varying in SPS, hence the potential pragmatic effect of the project will be also determining a perceptual and psychophysiological correlates of the Sensory Processing Sensitivity, that may be further used as a more objective measure of the trait.