

Track record

I started my scientific career studying dynamics of visual awareness & attention. During my bachelor and master's theses at Utrecht University in The Netherlands, I investigated the underlying mechanisms of these topics using psychophysical experiments. My thesis supervisor, Frans Verstraten, was impressed by the papers that followed from this work (Paffen, Naber, Verstraten, 2008; Naber, Carter, Verstraten, 2009) and offered me a prestigious internship at the Vision Sciences Lab of Harvard University under the supervision of Thomas Carlson. During this internship I got in touch with many vision scientists and luckily it did not take long for me to find a PhD position that fitted my interests.

During my PhD at the Neurophysics department of Philipps University Marburg in Germany in the group of pupillometry expert Wolfgang Einhäuser, I extended my scientific toolset with eye tracking and demonstrated that reflexes such as the pupil reflect conscious perception. This work was the basis for my most cited publications on how pupil size and the optokinetic nystagmus can replace participant's subjectively report about what they can and cannot see (Naber, Frässle, Rutishauser, Einhäuser, 2013). This proved to be exceptionally useful in fMRI experiments in which reflexes circumvent confounding BOLD responses related to motor execution, and resulted in a well-cited publications in *Journal of Neuroscience* (Frässle et al., 2014). The Australian Neuroscience Society and Association of the Scientific Study of Consciousness awarded presentations on this topic with a travel grant and best poster price, respectively. Later this work also resulted in a study with patients in which we showed that the pupil serves as a diagnostic marker of visual impairments (Naber et al., 2018).

Meanwhile, Ken Nakayama, a previous collaborator at Harvard, was insisting to get me back in his lab. Eventually we applied for a Dutch NWO Rubicon Grant supported by Marie Curie to finance a post-doc position. I was thrilled when awarded with the grant, because it allowed me to continue studying the link between physiology and behaviour back at the Vision Sciences Lab in Cambridge. Within one year we published several papers together in *Journal of Vision* and *PNAS*, and both hit the news (Naber & Nakayama, 2013; Naber, Vaziri Pashkam, Nakayama, 2013). These projects eventually established me as the leading expert in pupillometry and cognitive neurosciences.

After my post-doc I was appointed as an assistant professor at Leiden University for two years, where I examined the tight link between attention, consciousness, pupillometry, and EEG. Funding opportunities were scarce at this time and I had to build a teaching curriculum as well. Nonetheless, I managed to publish papers with the help of many bachelor and master student projects (Lippelt et al., 2016; Naber et al., 2015; Naber et al., 2016). Two years later I made the decision to accept a position at experimental psychology of Utrecht University. This position allowed me to develop several popular (>500 students) teaching courses, to gain experience with supervising large teams of lecturers, and to scientifically focus more on perception and psychophysiology. Within a year my position became permanent, finally providing me a stable environment to build up my new scientific laboratory "Psychophysiology of Perception". My recent work shows how the pupil reflects perceptual processes such as sensory sensitivity, attention, and illusions (Naber, Alvarez, Nakayama, 2013; Derksen et al., 2018; Reuten, van Dam, Naber, 2018; Naber et al., 2018). This work pinpoints the value of pupillometry in detecting an observer's interest for stimuli and abnormal sensory processing. I am currently enjoying this line of research to the full extent. I hope to eventually elucidate the mechanisms and functions behind the links between physiology and perception, with the ultimate goal to utilize my scientific discoveries in daily practice.