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## Milica Nikolic, Dr.

Psychology

Universität Amsterdam

from September 2022 to January 2023

Born in 1984 in Pirot, Serbia

Studied Psychology at the University of Novi Sad and Belgrade University and Developmental Psychopathology at the University of Amsterdam

FELLOWSHIP

College for Life Sciences

### ARBEITSVORHABEN

## The Neural Mechanisms of Blushing

I am interested in understanding how self-conscious emotions such as shyness, embarrassment, shame, and guilt contribute to children's social decision-making. A hallmark of self-conscious emotions is blushing – reddening of the face in response to social attention, which occurs when we think about what others think of us. My research was the first to examine blushing in children and to show that, although quickly appearing and disappearing, a child's blushing may reflect social sensitivity and attunement to others; prolonged blushing is involved in the development of psychopathology. Blushing, thus, plays an important role in child socio-emotional development. Recently, the physiological and hormonal mechanisms and neuropharmacology of blushing have started to be unveiled. Interestingly, no neuroimaging study on blushing in humans has been done so far. Therefore, it is currently unknown how blushing and related self-conscious emotions arise on the neural system level in humans. Recently, together with colleagues, I developed a paradigm to evoke blushing in adolescents while measuring their brain activity in a MRI scanner. To do so, we first recorded participants while they were taking part in karaoke and sang difficult songs. We then played back these embarrassing videos to them while we simultaneously measured their brain activity and blushing (blood flow and skin temperature increases) in the scanner. By comparing viewing self vs. other in an embarrassing situation, we aim to identify, for the first time, the neural correlates of blushing. We hypothesized that we will find greater activation in the brain areas involved in interoception and mentalization in relation to the occurrence and duration of blushing. Furthermore, we will establish which neural processes characterize prolonged vs. transient and adaptive blushing. During my stay at Wissenschaftskolleg zu Berlin, I will spend time writing a manuscript of this study, which will form the basis for my future interdisciplinary work on blushing and self-conscious emotions.

### Recommended Reading

Nikolić, Milica, Lisa van der Storm, Cristina Colonesi, Eddie Brummelman, Kees Jan Kan, and Susan Bögels (2019). "Are Socially Anxious Children Poor or Advanced Mindreaders?" *Child Development* 90, no. 4: 1424–1441. <https://doi.org/10.1111/cdev.13248>.

Nikolić, Milica, Mirjana Majdandžić, Cristina Colonesi, Wieke de Vente, Eline Möller, and Susan Bögels (2020). "The Unique Contribution of Blushing to the Development of Social Anxiety Disorder Symptoms: Results from a Longitudinal Study." *The Journal of Child Psychology and Psychiatry* 61, no. 12: 1339–1348. <https://doi.org/10.1111/jcpp.13221>.

Nikolić, Milica, and Tom Roth (2021). "A Comparative Glance on Self-Conscious Emotions: A Commentary on Kret et al. (2020)." *Neuroscience and Biobehavioral Reviews* 129: 154–156. <https://doi.org/10.1016/j.neubiorev.2021.07.031>.

Nikolic, Milica (Oxford,2020)

The unique contribution of blushing to the development of social anxiety disorder symptoms : results from a longitudinal study

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=1813333971>

Nikolic, Milica (Malden, Mass.,2019)

Are socially anxious children poor or advanced mindreaders?

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=1813331499>