

Varieties of cognitive penetration in visual perception

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ABSTRACT:

Is our perceptual experience a veridical representation of the world or is it a product of our beliefs and past experiences? Cognitive penetration describes the influence of higher level cognitive factors on perceptual experience and has been a debated topic in philosophy of mind and cognitive science. Here, we focus on visual perception, particularly early vision, and how it is affected by contextual expectations and memorized cognitive contents. We argue for cognitive penetration based on recent empirical evidence demonstrating contextual and top-down influences on early visual processes. On the basis of a perceptual model, we propose different types of cognitive penetration depending on the processing level on which the penetration happens and depending on where the penetrating influence comes from. Our proposal has two consequences: 1. the traditional controversy on whether cognitive penetration occurs or not is ill posed, and 2. a clear-cut perception-cognition boundary cannot be maintained.