Spencer Ivy & Aleksandra Mroczko-Wąsowicz (University of Warsaw, Department of Philosophy)

The role of perceivers in representing the sensory world

In this paper, we argue that a perceiver's contributions to perception can substantially affect how objects are represented in perceptual experience. To capture the scalar nature of these perceiver-contingent contributions, we introduce three grades of subject-dependency in object perception. Each grade refers to a deeper and more pervasive influence of perceivers on resulting object representations. The first grade, "weak subject-dependency," concerns attentional changes to perceptual content like, for instance, when a perceiver turns their head, plugs their ears, or primes their attention to a particular cue. The second grade, "moderate subject-dependency," concerns changes in the contingent features of perceptual object representations due to action-orientation, location, and agential interest. For instance, being to the right or left of an object will cause the object representation to have a corresponding locative feature, but that feature is non-essential to the object in question. Finally, the third grade, "strong subject-dependency," concerns generating perceptual object representations whose existence depends upon their perceivers' sensory contributions. Accordingly, different perceivers with differently adapted or developed perceptual systems may process and represent the same sensory information differently from one another. For this final grade of subject-dependency the adaptive perceptual system shapes diverse representations of sensory information by contributing necessary features. To exemplify this nonstandard form of object perception we offer evidence from the future-directed anticipation of perceptual experts, and from the feature binding of synesthetes. We conclude that strongly subject-dependent perceptual object representations are accurate representations of the sensory world that track material objects. Although they represent material objects, they also represent necessary relations shared between those objects and their perceivers which renders them often idiosyncratic.

What we learn from these analyses is that perception is plastic in that its dynamic operations are responsive to subject-dependent pressures like the adaptive effects of perceptual learning, attentional interests, and non-pathological differences in the regular functioning of an individual's perceptual system. We conclude that despite the non-regular nature of strongly subject-dependent perceptual object representations, such object representatoins are no less capable of substantiating accurate experiences of the material world. There are as many ways to perceive the world as there are individuals who develop and live with adapted perceptual systems. The non-regularity of object representations, whether generated from the weak grade of subject-dependency, moderate, or strong one, should neither unsettle our epistemology nor undermine our confidence in perceptual science. Rather, such perceptual object representations may be embraced by contemporary theories regarding the content of perception to better accommodate the diversity of perceptual experience.

Keywords: Subject-Dependent; Object Perception; Perceptual Expertise; Anticipation; Synesthesia

Selected References

Alsmith, AJT. (2017). *Perspectival structure and agentive self-location*. In F. de Vignemont & A.J.T. Alsmith (eds.) (2017). The subject's matter: Self-consciousness and the body. Cambridge, MA: MIT Press.

de Vignemont, F. (2023). *Looming Perception: Seeing in a Dynamic World*. In: A. Mroczko-Wąsowicz and R. Grush (Eds.) Sensory Individuals: Unimodal and Multimodal Perspectives. Oxford: Oxford University Press.

de Villers-Sidani, É., Mishra, J., Zhou, X., Voss, P. (2016). Neuroplastic mechanisms underlying perceptual and cognitive enhancement. *Neural Plast*. 6238571.

Gredin, V., Thomas, J., Broadbent, D., Fawver, B., Williams, A.M. (2023). Skill-based differences in the impact of opponent exposure during anticipation: the role of context-environment dependency. *Frontiers in Cognition*. (2).

Ivy, S., Mroczko-Wąsowicz, A. (2025a). Three grades of subject-dependency in object perception. *Synthese* 206, 96. https://doi.org/10.1007/s11229-025-05182-5.

Ivy, S., Mroczko-Wąsowicz, A. (2025b). Framing Effects in Object Perception. *Review of Philosophy and Psychology*. https://doi.org/10.1007/s13164-024-00763-8.

Sayim, B., Oztas, D.N., L-Miao, L., Alp, N. (2024). Seeing less but seeing better: Information loss and accuracy gain in redundancy masking. *Journal of Vision*, 24(10).

Siegel, S. (2010). *The Contents of Visual Experience*. New York: Oxford University Press.

Skrzypulec, B (2022). Subject-dependency of perceptual objects. *Erkenntnis* 87:2827–2842.

Ward, J., Li, R., Salih, S., and Sagiv, N. (2007). Varieties of grapheme-colour synaesthesia: a new theory of phenomenological and behavioural differences. *Conscious. Cogn*. 16, 913–931.