

# [Visual object categorization in the brain: what can we really learn from erp peak...](https://assignbuster.com/visual-object-categorization-in-the-brain-what-can-we-really-learn-from-erp-peaks/)

[](https://assignbuster.com/)[Health & Medicine](https://assignbuster.com/essay-subjects/health-n-medicine/)

A commentary on

Carmel, D., and Bentin, S. (2002). Domain specificity versus expertise: factors influencing distinct processing of faces. *Cognition* 83, 1–29.

Delorme, A., Westerfield, M., and Makeig, S. (2007). Medial prefrontal theta bursts precede rapid motor responses during visual selective attention. *J. Neurosci.* 27, 11949–11959.

Dering, B., Martin, C. D., Moro, S., Pegna, A. J., and Thierry, G. (2011). Face-sensitive processes one hundred milliseconds after picture onset. *Front. Hum. Neurosci.* 5: 93. doi: 10. 3389/fnhum. 2011. 00093

Eimer, M. (1998). Does the face-specific N170 component reflect the activity of a specialized eye processor? *Neuroreport* 9, 2945–2948.

Freedman, D. J., Riesenhuber, M., Poggio, T., and Miller, E. K. (2002). Visual categorization and the primate prefrontal cortex: neurophysiology and behavior. *J. Neurophysiol.* 88, 929–941.

Freedman, D. J., Riesenhuber, M., Poggio, T., and Miller, E. K. (2003). A comparison of primate prefrontal and inferior temporal cortices during visual categorization. *J. Neurosci.* 23, 5235–5246.

Honey, C., Kirchner, H., and VanRullen, R. (2008). Faces in the cloud: Fourier power spectrum biases ultrarapid face detection. *J. Vis.* 8, 1–13.

Hubel, D. H., and Wiesel, T. N. (1979). Brain mechanisms of vision. *Sci. Am.* 241, 150–162.

Itier, R. J., and Taylor, M. J. (2004). N170 or N1? Spatiotemporal differences between object and face processing using ERPs. *Cereb. Cortex* 14, 132–142.

Pernet, C., Schyns, P. G., and Demonet, J. F. (2007). Specific, selective or preferential: comments on category specificity in neuroimaging. *Neuroimage* 35, 991–997.

Pernet, C. R., Chauveau, N., Gaspar, C., and Rousselet, G. A. (2011a). LIMO EEG: a toolbox for hierarchical Linear Modeling of EletroEncephaloGraphic data. *Comput. Intell. Neurosci.* doi: 10. 1155/2011/831409

Pernet, C. R., Sajda, P., and Rousselet, G. A. (2011b). Single-trial analyses: why bother? *Front. Psychol.* 2: 322. doi: 10. 3389/fpsyg. 2011. 00322

Philiastides, M. G., Ratcliff, R., and Sajda, P. (2006). Neural representation of task difficulty and decision making during perceptual categorization: a timing diagram. *J. Neurosci.* 26, 8965–8975.

Philiastides, M. G., and Sajda, P. (2006). Temporal characterization of the neural correlates of perceptual decision making in the human brain. *Cereb. Cortex* 16, 509–518.

Ratcliff, R., Philiastides, M. G., and Sajda, P. (2009). Quality of evidence for perceptual decision making is indexed by trial-to-trial variability of the EEG. *Proc. Natl. Acad. Sci. U. S. A.* 106, 6539–6544.

Rossion, B., and Jacques, C. (2008). Does physical interstimulus variance account for early electrophysiological face sensitive responses in the human brain? Ten lessons on the N170. *Neuroimage* 39, 1959–1979.

Rousselet, G. A., Gaspar, C. M., Wieczorek, K. P., and Pernet, C. R. (2011). Modeling single-trial ERP reveals modulation of bottom-up face visual processing by top-down task constraints (in some subjects). *Front. Psychol.* 2: 137. doi: 10. 3389/fpsyg. 2011. 00137

Rousselet, G. A., Husk, J. S., Bennett, P. J., and Sekuler, A. B. (2008a). Time course and robustness of ERP object and face differences. *J. Vis.* 8, 1–18.

Rousselet, G. A., Pernet, C. R., Bennett, P. J., and Sekuler, A. B. (2008b). Parametric study of EEG sensitivity to phase noise during face processing. *BMC Neurosci.* 9, 98. doi: 10. 1186/1471-2202-9-98

Rousselet, G. A., Macé, M. J., and Fabre-Thorpe, M. (2004). Animal and human faces in natural scenes: how specific to human faces is the N170 ERP component? *J. Vis.* 4, 13–21.

Rousselet, G. A., and Pernet, C. R. (2011). Quantifying the time course of visual object processing using ERPs: it’s time to up the game. *Front. Psychol.* 2: 107. doi: 10. 3389/fpsyg. 2011. 00107

Schyns, P. G. (1998). Diagnostic recognition: task constraints, object information, and their interactions. *Cognition* 67, 147–179.

Schyns, P. G. (2010). Grand challenges in perception science: modeling the future. *Front. Psychol.* 1: 10. doi: 10. 3389/fpsyg. 2010. 00010

Schyns, P. G., Gosselin, F., and Smith, M. L. (2009a). Information processing algorithms in the brain. *Trends Cogn. Sci. (Regul. Ed.)* 13, 20–26.

Schyns, P. G., Petro, L. S., and Smith, M. L. (2009b). Transmission of facial expressions of emotion co-evolved with their efficient decoding in the brain: behavioral and brain evidence. *PLoS ONE* 4, e5625. doi: 10. 1371/journal. pone. 0005625

Schyns, P. G., Jentzsch, I., Johnson, M., Schweinberger, S. R., and Gosselin, F. (2003). A principled method for determining the functionality of brain responses. *Neuroreport* 14, 1665–1669.

Schyns, P. G., Petro, L. S., and Smith, M. L. (2007). Dynamics of visual information integration in the brain for categorizing facial expressions. *Curr. Biol.* 17, 1580–1585.

Schyns, P. G., Thut, G., and Gross, J. (2011). Cracking the code of oscillatory activity. *PLoS Biol.* 9, e1001064. doi: 10. 1371/journal. pbio. 1001064

Smith, M. L., Gosselin, F., and Schyns, P. G. (2004). Receptive fields for flexible face categorizations. *Psychol. Sci.* 15, 753–761.

Sowden, P. T., and Schyns, P. G. (2006). Channel surfing in the visual brain. *Trends Cogn. Sci. (Regul. Ed.)* 10, 538–545.

Thierry, G., Martin, C. D., Downing, P., and Pegna, A. J. (2007). Controlling for interstimulus perceptual variance abolishes N170 face selectivity. *Nat. Neurosci.* 10, 505–511.

van Rijsbergen, N. J., and Schyns, P. G. (2009). Dynamics of trimming the content of face representations for categorization in the brain. *PLoS Comput. Biol.* 5, e1000561. doi: 10. 1371/journal. pcbi. 1000561

VanRullen, R. (2006). On second glance: still no high-level pop-out effect for faces. *Vision Res.* 46, 3017–3027; author reply 3028–3035.

VanRullen, R., and Thorpe, S. J. (2001). The time course of visual processing: from early perception to decision-making. *J. Cogn. Neurosci.* 13, 454–461.

Vizioli, L., Foreman, K., Rousselet, G. A., and Caldara, R. (2010a). Inverting faces elicits sensitivity to race on the N170 component: a cross-cultural study. *J. Vis.* 10, 11–23.

Vizioli, L., Rousselet, G. A., and Caldara, R. (2010b). Neural repetition suppression to identity is abolished by other-race faces. *Proc. Natl. Acad. Sci. U. S. A.* 107, 20081–20086.

Wilcox, R. R. (2005). *Introduction to Robust Estimation and Hypothesis Testing* , 2nd Edn. New York, NY: Elsevier Academic Press.