

GUEST EDITORIAL**Special Issue: Art & Perception**

Empirical aesthetics, the beautiful challenge: An introduction to the special issue on *Art & Perception*

M. Dorothee AugustinUniversity of Leuven (KU Leuven), Laboratory of Experimental Psychology, Tiensestraat 102, box 3711, 3000 Leuven, Belgium; e-mail: mdorothee.augustin@psy.kuleuven.be**Johan Wagemans**University of Leuven (KU Leuven), Laboratory of Experimental Psychology, Tiensestraat 102, box 3711, 3000 Leuven, Belgium; e-mail: johan.wagemans@psy.kuleuven.be

Abstract. The *i-Perception* special issue *Art & Perception* is based on the *Art & Perception Conference 2010* in Brussels. Our vision with this conference was to bring together artists and vision scientists from different backgrounds to exchange views and state-of-the-art knowledge on art perception and aesthetics. The complexity of the experience of art and of aesthetic phenomena, in general, calls for specific research approaches, for which interdisciplinarity seems to be key. Following this logic, the special issue *Art & Perception* contains contributions by artists and vision scientists with different methodological approaches. The contributions span a wide range of topics, but are all centred around two questions: How can one understand art perception and aesthetics from a psychological point of view, and how is this reflected in art itself?

... art is the complement of science.

John Dewey (1940)

When we invited our colleagues to the [Art & Perception Conference 2010](#), it was exactly the spirit of this complementarity that motivated our endeavour. Our own experiences in collaborative projects between scientists and artists (see Wagemans [2011](#)), as well as the recent boom in publications on art perception and aesthetics in the vision sciences, matched our general impression that the relation between art and science bears great potential and many sources of inspiration for both sides. At the same time, we were aware of the fact that a complementarity that appears so self-evident at first sight is not so self-evident in the actual scientific and artistic practice. At least for psychology, one can say that the relation between art and science is long but not less ambivalent. On the one hand, empirical aesthetics (as the empirical study of art is mostly named) dates back to the beginnings of psychology as an institutional science, to Gustav Theodor Fechner and his *Vorschule der Ästhetik* ([1876](#)). On the other hand, calling empirical aesthetics a traditional field in psychology does not describe the situation adequately, either. The 20th century has seen very prominent and influential scholars of aesthetics, including the Gestaltists and Rudolf Arnheim ([1974](#)), Daniel E Berlyne with his *New Experimental Aesthetics* (Berlyne [1974](#)), or Colin Martindale ([1990](#)), to name but a few. Still, empirical aesthetics remained a relatively “exotic” field within psychology, being pursued by few intensively, but lacking a spread to a wider scientific community and a line of research that is carried further systematically. In contrast to more established fields like scene or face perception, the theoretical and methodological foundations of research on art perception and aesthetics thus still have to be laid.

The challenges researchers face in this context are very special: Art is not a “standard” stimulus, and the experience that viewers have with real artworks in a museum are difficult, if ever possible,

to reproduce in a lab. On the other hand, empirical research standards call for experimental control. For scientists this means that they constantly have to seek for a balance between control and realism in stimuli and setting, probably even more so than in other fields of research (see Wagemans [2011](#)). Another important issue is of a more theoretical nature: What is aesthetics, aesthetic experience, aesthetic impressions, and what is it that we are studying—beauty, pleasingness, etc? Definitions of aesthetics-related terms differ widely between authors, and terminology is far from systematic (Augustin et al [2012b](#); Faerber et al [2010](#); Marković [2012](#)). This makes it very difficult to compare the results of different studies and supposedly is one reason for another central problem in aesthetics: the relative lack of standardised measurement instruments. That said, should scientists keep their hands off art perception and aesthetics? But there is the other side: Humans are fascinated by art, they lose time and space when exploring artworks in a museum or listening to their favourite pieces of music, and they seek these experiences over and over again, even though they might not seem important at first sight from an evolutionary point of view. Moreover, aesthetic encounters of all kinds permeate our lives, from experiences of high art in museums and galleries to everyday encounters with fashion and other designed products. For scientists these factors (let alone their own passions for the arts) make aesthetic phenomena a highly interesting field of study—not to disenchant them, but to understand what processes lie underneath. The relative lack of theoretical and methodological knowledge in empirical aesthetics that was mentioned as a problem before (as compared to other, more traditional fields) also entails a lot of freedom for researchers and creates unique opportunities for innovative thinking and method development. It is probably this very special combination of fascination, challenge, and possibilities that has recently started to (re)attract researchers, leading to a relative boom of studies in art perception and aesthetics in the past few years (eg, Chatterjee [2011](#)) as well as to an emergence of new conferences and conference formats (like *The Copenhagen Neuroaesthetics Conference 2009*, the *Art & Perception Conference 2010* in Brussels, or the upcoming *Visual Science of Art Conference 2012* in Alghero). Therefore, chances of empirical aesthetics to receive more and systematic attention from scientists seem to be very good, and one can be very curious as to where this development is going.

We are convinced that a key to the successful study of art perception and aesthetics lies in interdisciplinarity and open-minded discussion of different perspectives: between artists and scientists, but also between scholars of different subject areas (psychology, art history), research approaches (theoretical, phenomenological, empirical), and methodological foci (psychophysical, neuroscientific, etc.). Following this idea, our vision with the *Art & Perception Conference 2010* in Brussels was to bring together artists and vision scientists from different backgrounds to exchange state-of-the-art knowledge and discuss phenomena of art and aesthetics from different perspectives, including the crucial question what art and science can learn from another. Both the quality of the contributions and the enthusiasm of the participants turned out to be so impressive that we decided to make the spirit of the conference and its ideas available to a broader public. The result is the current special issue of *i-Perception*. It is derived from the *Art & Perception Conference*, containing articles by contributors of the conference, some of which are directly based on a talk or poster, some closely related.

The artists Ruth Loos ([2012](#)) and Wendy Morris ([2011](#)) write about their process of working and how that is influenced by their interaction with experimental psychology. Johan Wagemans ([2011](#)) and Paul Locher ([2011](#)) present their visions on psychoaesthetics as a science and what methods and approaches might be most fruitful for it. The special issue includes papers about which facets make up aesthetic experiences (Marković [2012](#)) and how this might differ between different art forms (Augustin et al [2012a](#)), as well as theoretical approaches to pleasure, one with a focus on predictive coding (Van de Cruys and Wagemans [2011](#)), the other with a focus on the dynamics of appreciation (Carbon [2011](#)). Nick Wade ([2011](#)) presents his philosophical view on artworks as icons. Baingio Pinna ([2012](#)) discusses the representation of shape, colour, shade, and lighting and their role in the perception of art from a phenomenological standpoint. A completely different methodological focus is taken by Tim Holmes and Johannes Zanker ([2012](#)): How can we measure preferences through eye-movements, and how can this technique be utilised? Among the topics with the widest range of articles related to them are the perception of space in paintings (Koenderink et al [2011](#); van Doorn et al [2011](#)) and the perception of balance and orientation (Bertamini et al [2011](#); Gershoni and Hochstein [2011](#); Leyssen et al [2012](#); Mather [2012](#); McManus et al [2011](#)), loosely related also to the phenomena of transparency (Sayim and Cavanagh [2011](#)) and occlusion (Gillam [2011](#)). Similarly,

our authors approach visual illusions from different angles: illusions as characteristics of particular artworks (Daneyko et al [2011](#)), eye-movement behaviour related to illusions (Hermens and Zanker [2012](#)), and the aesthetics of visual illusions (Stevanov et al [2012](#)). The art form besides visual art that is most prominent in this issue is film. James Cutting and colleagues write about technical (and, in consequence, perceptual and aesthetic) changes in Hollywood film over the past decades (Cutting et al [2011](#)), and Tom Troscianko and colleagues (Troscianko et al [2012](#)) examine the effects of such simple things as screen size on something as complex as immersion.

As the reader can see, the range of topics and methods covered by this special issue is wide, as is the range of art works being studied (from Renaissance art in Daneyko et al [2011](#) and Gillam [2011](#) to contemporary art in Wagemans [2011](#)). Nevertheless, all the articles share a common core: the question how we can understand art perception and aesthetics from a psychological point of view, and how, in turn, this is reflected in art itself. Like the *Art & Perception Conference*, we consider this special issue an invitation for everybody interested in art to look at it from different perspectives, and to seize some of the ideas presented here as stepping stones for new scientific and artistic work. Art will definitely always remain a challenging subject—for those who make it as well as for those who do research on it—but in both cases we can fortunately be sure that beauty lies not only on the surface but also within.

Acknowledgements. JW receives structural long-term funding from the Flemish Government (METH/08/02). We would like to thank Pion and the *i-Perception* editors, Tom Troscianko, Tim Meese, and Peter Thompson, for giving us the opportunity and freedom to edit this special issue. It was Tom who brought up the idea of considering *i-Perception* as a target journal and who initiated communication, and we would like to dedicate this special issue to him. We hope he would enjoy the end product as much as we do. Thanks also to Lesley Sackett, Gillian Porter, and Amye Kenall, who always had an open ear and prompt help for our practical requests, to Stephanie Poot for her organisational support with the *Art & Perception Conference*, and to the reviewers for helping to improve the quality of the published papers. Last but not least, we are grateful to all authors of this special issue. Their contributions offer an exciting mixture of views and approaches, and we hope that readers have as much fun in reading the special issue as we had in making it.

References

- Arnheim, R. (1974). *Art and Visual Perception. A Psychology of the Creative Eye*. Berkeley, CA and Los Angeles, CA: University of California Press.
- Augustin, M. D., Carbon, C. C., Wagemans J. (2012a). Artful terms: A study on aesthetic word usage for visual art vs. film and music. *i-Perception*, 3, 319–337. doi: [10.1068/i0511aap](#)
- Augustin, M. D., Wagemans, J., Carbon, C. C. (2012b). All is beautiful? Generality vs specificity of word usage in visual aesthetics. *Acta Psychologica*, 139, 187–201. doi:[10.1016/j.actpsy.2011.10.004](#)
- Berlyne, D. E. (1974). *Studies in the New Experimental Aesthetics*. New York, NY: Taylor & Francis.
- Bertamini, M., Bode, C., Bruno, N. (2011). The effect of left-right reversal on film: Watching Kurosawa reversed. *i-Perception*, 2, 528–540. doi: [10.1068/i0451aap](#)
- Carbon, C. C. (2011). Cognitive mechanisms for explaining dynamics of aesthetic appreciation. *i-Perception*, 2, 708–719. doi: [10.1068/i0463aap](#)
- Chatterjee, A. (2011). Neuroaesthetics: A coming of age story. *Journal of Cognitive Neuroscience*, 23, 53–62. doi:[10.1162/jocn.2010.21457](#)
- Cutting, J. E., Brunick, K. L., DeLong, J. E., Iricinschi, C., Candan, A. (2011). Quicker, faster, darker: Changes in Hollywood film over 75 years. *i-Perception*, 2, 569–576. doi: [10.1068/i0441aap](#)
- Daneyko, O., Stucchi, N., Zavagno, D. (2011). San Lorenzo and the Poggendorff illusion in Ravenna. *i-Perception*, 2, 502–507. doi: [10.1068/i0440aap](#)
- Dewey, J. (2008). Time and Individuality. In J A Boydston (Ed.), *The later works of John Dewey, 1925–1953 vol 14: 1939–1941. Essays, reviews and miscellany*. Carbondale, IL: Southern Illinois University Press. (Original work published 1940)
- Faerber, S. J., Leder, H., Gerger, G., Carbon, C. C. (2010). Priming semantic concepts affects the dynamics of aesthetic appreciation. *Acta Psychologica*, 135, 191–200. doi:[10.1016/j.actpsy.2010.06.006](#)
- Fechner, G. T. (1876). *Vorschule der Asthetik [Pre-school of aesthetics]*. Leipzig, Germany: Breitkopf & Härtel.
- Gershoni, S., Hochstein, S. (2011). Measuring pictorial balance perception at first glance using Japanese calligraphy. *i-Perception*, 2, 528–540. doi: [10.1068/i0472aap](#)
- Gillam, B. (2011). Occlusion issues in early Renaissance art. *i-Perception*, 2, 1076–1097. doi: [10.1068/i0468aap](#)
- Hermens, F., Zanker, J. (2012). Looking at Op Art: Gaze stability and motion illusions. *i-Perception*, 3, 282–304. doi: [10.1068/i0457aap](#)
- Holmes, T., Zanker, J. (2012). Using an oculomotor signature as an indicator of aesthetic preference.

- i-Perception*, 3, 426–439. doi: [10.1068/i0448aap](https://doi.org/10.1068/i0448aap)
- Koenderink, J., van Doorn, A. J., Wagemans, J. (2011). Depth. *i-Perception*, 2, 541–564. doi: [10.1068/i0438aap](https://doi.org/10.1068/i0438aap)
- Leyssen, M. H. R., Linsen, S., Sammartino, J., Palmer, S. E. (2012). Aesthetic preference for spatial composition in multiobject pictures. *i-Perception*, 3, 25–49. doi: [10.1068/i0458aap](https://doi.org/10.1068/i0458aap)
- Locher, P. (2011). Contemporary experimental aesthetics: State of the art technology. *i-Perception*, 2, 697–707. doi: [10.1068/i0449aap](https://doi.org/10.1068/i0449aap)
- Loos, R. (2012). Reading paths, eye drawings, and word islands: Movement in Un coup de dés. *i-Perception*, 3, 50–58. doi: [10.1068/i0446aap](https://doi.org/10.1068/i0446aap)
- Marković, S. (2012). Components of aesthetic experience: aesthetic fascination, aesthetic appraisal and aesthetic emotion. *i-Perception*, 3, 1–17. doi: [10.1068/i0450aap](https://doi.org/10.1068/i0450aap)
- Martindale, C. (1990). *The Clockwork Muse: The Predictability of Artistic Change*. New York, NY: Basic Books.
- Mather, G. (2012). Aesthetic judgment of orientation in modern art. *i-Perception*, 3, 18–24. doi: [10.1068/i0447aap](https://doi.org/10.1068/i0447aap)
- McManus, I. C., Stöver, K., Kim, D. (2011). Arnheim's Gestalt theory of visual balance: Examining the compositional structure of art photographs and abstract images. *i-Perception*, 2, 615–647. doi: [10.1068/i0445aap](https://doi.org/10.1068/i0445aap)
- Morris, W. (2011). Layers of looking. *i-Perception*, 2, 577–591. doi: [10.1068/i0443aap](https://doi.org/10.1068/i0443aap)
- Pinna, B. (2012). Perceptual organization of shape, color, shade, and lighting in visual and pictorial objects. *i-Perception*, 3, 257–281. doi: [10.1068/i0460aap](https://doi.org/10.1068/i0460aap)
- Sayim, B., Cavanagh, P. (2011). The art of transparency. *i-Perception*, 2, 679–696. doi: [10.1068/i0459aap](https://doi.org/10.1068/i0459aap)
- Stevanov, J., Marković, S., Kitaoka, A. (2012). Aesthetic valence of visual illusions. *i-Perception*, 3, 112–140. doi: [10.1068/i0455aap](https://doi.org/10.1068/i0455aap)
- Troscianko, T., Meese, T. S., Hinde, S. (2012). Perception while watching movies: Effects of screen size and scene type. *i-Perception*, 3, 414–425. doi: [10.1068/i0475aap](https://doi.org/10.1068/i0475aap)
- Van de Cruys, S., Wagemans, J. (2011). Putting reward in art: A tentative prediction error account of visual art. *i-Perception*, 2, 1035–1062. doi: [10.1068/i0466aap](https://doi.org/10.1068/i0466aap)
- van Doorn, A., Koenderink, J., Wagemans, J. (2011). Rank order scaling of pictorial depth. *i-Perception*, 2, 724–744. doi: [10.1068/i0432aap](https://doi.org/10.1068/i0432aap)
- Wade, N. J. (2011). Eye con tricks. *i-Perception*, 2, 486–501. doi: [10.1068/i0442aap](https://doi.org/10.1068/i0442aap)
- Wagemans, J. (2011). Towards a new kind of experimental psycho-aesthetics? Reflections on the *Parallelepiped* project. *i-Perception*, 2, 648–678. doi: [10.1068/i0464aap](https://doi.org/10.1068/i0464aap)



M. Dorothee Augustin studied psychology and musicology in Berlin and Vienna and received a Ph.D. for her work on cognitive and affective processes of aesthetic experience. She has worked as an experimental psychologist at the University of Vienna, Charité Berlin, and K U Leuven and has many years of research experience in art perception and aesthetics. Her main research interests lie in temporal aspects of art perception and in the question how one can practically measure aesthetic impressions.



Johan Wagemans (1963) has a B.A. in psychology and philosophy, an M.A. and a Ph.D. in experimental psychology, all from the University of Leuven, where he is currently a full professor. Current research interests are mainly in so-called mid-level vision (perceptual grouping, figure-ground organization, depth and shape perception) but stretching out to low-level vision (contrast detection and discrimination) and high-level vision (object recognition and categorization), including applications in autism, arts, and sports (see www.gestaltrevision.be).