

**Title:**

**The concept of cesia (visual appearance other than color):  
antecedents, development, and applications**

**Speaker:**

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**Abstract:**

Cesia is the name given to the visual perception of different *spatial* distributions of light. It encompasses sensations of transparency, opaque appearance, translucency, matte appearance, gloss, mirrorlike appearance, etc., in addition to sensations of lightness and darkness (which are the direct link between cesia and color). Cesia and color are complementary to each other. In short terms, we could define color as the visual perception of the different *spectral* distributions of light. A parallelism can be noted in both definitions: spectral properties of light, in one case, spatial distribution of light, in the other.

While color sensations span from red/green and blue/yellow oppositions (in terms of *hue*), from grays to vivid or saturated colors (in terms of *chromaticity* or saturation), and from light to dark (in terms of *lightness*), cesia sensations span from transparent to opaque (in terms of the perceived *permeability* to light), from diffuse to regular or clear (in terms of perceived *diffusivity*), and also from light to dark (in terms of *darkness*, as we call the variable that cesia shares with color). Hence, all the appearances included in color and cesia combined can be defined by five dimensions: the classical three color variables plus permeability and diffusivity. There are, thus, five kind of scales that can be developed. We may think in the CIELAB color space (or any other 3D color space) being expanded with the additional dimensions of permeability and diffusivity; or either in the CIE chromaticity diagram (or any color circle) being expanded with the dimensions of lightness, permeability and diffusivity. Any color may appear as a transparent layer or volume, which can vary between crystal clear and translucent or turbid media. Colors may also appear as opaque surfaces, either with matte or glossy finish, which can even reach a mirrorlike appearance (with maximum gloss). And all these appearances may occur at different levels of darkness.

The presentation will make a basic chronological survey of antecedents of the concept, with bibliographical references to authors who have dealt with these aspects of visual appearance before the name “cesia” was proposed to designate them. After that, a brief review of the developments that started after the adoption of that term will follow. Here, a recent proposal for the amplification of the concept of cesia will be explained, which is intended to include also primary sources of light. We originally considered that cesia was only applied to secondary sources of light, those that absorb, reflect or transmit light coming from primary sources. But a recent doctoral thesis by an author who has greatly contributed to the development of cesia, has made the point that some primary sources (extended ones) can also be perceived in particular cesias. And finally, some applications or uses of the concept by different authors will be shown in different fields: visual arts, architecture, design (graphics, textiles, fashion), sensory evaluation of food, etc.

## **Biography:**

**Dr. Jose Luis Caivano** is a research fellow at the National Council for Research, Argentina, and professor at Buenos Aires University, in the School of Architecture, where he also leads the Color Research Program. He holds a degree in architecture, a PhD in theory and history of art, and the highest category in the national research system of Argentina. He was a research associate at the Center for Language and Semiotic Studies, Indiana University, United States, president of the International Color Association (AIC), the International Association for Visual Semiotics (IASV), and the Argentine Color Group (GAC). Caivano has been appointed as honorary member of Ad Chroma (France), the Portuguese, and Mexican Color Societies. He serves in the editorial board of various international journals and is a senior editor of *Color Research and Application*. He has more than 190 publications, most of which are freely available at <https://colorysemiotica.wordpress.com/publicaciones/>