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Abstract

When the disciplines of science and art intertwine to reveal a truth then words and images are suited to telling different parts, and reveal the whole story most effectively when working in tandem. Decoding the underlying science within a work of art through a caption does not diminish its value as art, but when we fail to decode the science we miss entry into a narrative.

Keywords

Art, Science, Captions, Species, Viewers

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Connecting the Contradictory with Science Art and the Aid of a Caption

Carel P. Brest van Kempen and Darryl Wheye

Conventional wisdom often still views science and art as separate and opposing entities executed by people of polar dispositions: the ‘left-brained’ and the ‘right-brained’. The mad scientist and the tortured artist live on in popular mythology as stand-ins for the real thing, even though the scientist and artist under discussion might be the same individual, like Leonardo who is still regarded as one of the greatest scientists as well as one of the greatest artists of his age. Interestingly, Leonardo’s massive artistic output was aimed primarily at helping him visualize his own experimentation in the fields of physiology, engineering, geology and biology. Luckily for us, his drawings help grant entry into notebooks recording his efforts to understand truths about nature. Granting entry is key, especially when it does so by demanding our attention through an image. When, seemingly involuntarily we are drawn in, our naturally divided attention coalesces as we peer freely at a revealed truth about nature. Extracting the same truth through the words of a technical journal feels different. Typically, those words require concentration--a willful silencing of distractions. The difference between viewing and digesting jargon, between being freely transported into a scene and reigning in our attention in order to concentrate on the implications of technical terminology illustrates why STEAM matters (why the presentation is relevant).

Often, however, captions are needed to usher us into a scene. When the disciplines of science and art intertwine to reveal a truth then words and images are suited to telling different parts, and reveal the whole story most effectively when working in tandem. Decoding the underlying science within a work of art through a caption does not diminish its value as art, but when we fail to decode the science we miss entry into a narrative.

**Ascensión
Strawberry Poison Frog & Tadpole
(2004)**

The dart frogs are a well-known group of beautiful and tiny diurnal amphibians found throughout the American tropics. In addition to producing complex alkaloid skin secretions, this group is remarkable in exhibiting astonishing parental care within its ranks. The Central American species *Oophaga pumilio* deposits several eggs on a leaf on the forest floor. These eggs are guarded by the male. Upon hatching, the tadpoles wriggle onto the female's back, and are taxied up the trunk of a tree to a pre-selected bromeliad, where they are deposited into one of the water vessels formed within the axils of these arboreal epiphytes. Every few days, the female lays an unfertilized egg for each of her offspring to feed upon.

Incidental species in this painting include an Agouti (*Dasyprocta punctata*), a Spectacled Antpitta (*Hylopezus perspicillitus*), a Racrunner (*Ameiva festiva*), a Lanternbug (*Fulgora laternaria*), a Leaf-Footed Bug (*Anisosceles* sp.), a leafhopper (*Umbonia* sp.), a Consul Butterfly (*Consul fabius*), and numerous ants of the species *Pheidole bicornis*, which are dependent on the leaves of *Piper* trees, like the one immediately behind the frog.

Ascensión - Strawberry Poison
by Carel P. Brest van Kempen
Acrylic 46" x 20"



Works of Science Art ensure that an explanatory caption is present. For example, how far can you enter this work of Science Art without its caption? Is it obvious that the painting is about phytotelmata-breeding anurans? Is it obvious that this phytotelmata-breeding Strawberry Poison Frog is climbing to a water source? Without the caption, would you have skipped the story about phytotelmata-breeding anurans and missed the narrative? STEAM works both ways.

Carel Brest van Kempen is a naturalist and artist specializing in ecological themes. Named a master signature member of the Society of Animal Artists, Brest van Kempen has illustrated a number of books and authored one. He lives in Holladay, Utah.

Darryl Wheye is a writer, artist, and Science Art-Nature CEO. She co-authored "Humans, Nature, and Birds: Science Art from Cave Walls to Computer Screens" with Donald Kennedy (Yale University Press, 2008) and lives in Woodside, California. Learn more about Science Art-Nature here scienceart-nature.org