



No Hemisphere Left Behind: *working across the boundary of art and science*

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Bringing art and science together

Interdisciplinary research has been explicitly valued by DCDC and the School of Sustainability as a way to bring a more holistic understanding of the complex issues facing the Phoenix metropolitan area and beyond. Different epistemologies, become critical to the decision making process when dealing with uncertainty.

Thomas Kuhn and Jacob Bronowski have expressed that artistic aptitude, often more than strict application of the scientific method, leads to scientific revolutions. On the other hand Martin Kemp points out in The Science of Art, the science too can contribute to revolutions in art.

Right Brain/ Left Brain: More than theory



Joe: a patient who has had his corpus collosum cut. It is the part of the brain that allows the right and left hemisphere to communicate. When presented with the images above, he interprets them differently based on the hemisphere.

- o Images shown to the Right Hemisphere: described seeing a face,
- o Images shown to the Left Hemisphere: could only see vegetables

This develops a clear example of the difference in right versus left hemisphere processing; the right processing holistically while the left processes the pieces. Arnheim comments on the qualities of the left and right hemisphere. He says, “The two sustain all operations of productive learning in all fields of knowledge, and they are crippled without each others help”

References

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Barry, A.M. (1997). Visual Intelligence: Perception, Image, and Manipulation in Visual Communication. Albany, NY: State University of New York Press
Edwards, D. (2008). Artscience: Creativity in the post-Google Generation. Cambridge, MA: Harvard University Press.

“by developing ideas through some combination of those processes we conventionally regard art and science creators more easily propel ideas over disciplinary and institutional obstacles. This proves catalytic for innovation.” ~ David Edwards

“After a certain high level of technical skill is achieved, science and art tend to coalesce in esthetics, plasticity, and form. The greatest scientists are always artists as well.” ~Albert Einstein

Differentiating the Art and Science process

SCIENCE guided by:

- o Quantification
- o Is analytical
- o Deductive
- o Conditional on problem definition
- o Is “true” in that it is repeatable
- o Is expressive of nature in its simplicity

ART guided by:

- o Aesthetic method
- o Process of thought guided by:
 - Images
 - Is sensual and intuitive
 - Often thrives in uncertainty
- o Is “true” in that it seems to elucidate what we experience
- o Is expressive of nature in its complexity

Three Criteria for Art-Science Translation

1. Process matters more than results
2. Experiments are never repeated
3. Results never are bad

Initial Steps toward Art/Science Collaboration

The Decision Center for a Desert City’s Community of Graduate Scholars recently held a panel discussion addressing student led attempts to work collaboratively across this boundary. This project was intended to push the boundary envelope of DCDC moving in a direction not previously explored.

Historical Temperature Trends in Phoenix, 1896-2009

Omayya Ahmad (researcher) and Josh White (photographer) collaborated on a historical temperature trends and it’s effects on individuals.



Effects of effluent on the Santa Cruz river

Natalie Case (researcher) and Chad White (photographer) collaborated on research regarding the use of effluent water and its effects on the Santa Cruz river.



Concluding Thoughts

- o Allow for a significant buffer time in order to become comfortable with a boundary that is not normally crossed.
- o Artists and scientists can benefit from developing an idea together, this creates an equal partnership at the very beginning of a project
- o Art and Science are different in how they approach a question, they cannot be overlapped.

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