

Give and Take

Science and the Humanities

from an artist's viewpoint





What is Science?
What are the Humanities?
What is Art?
What are Social Sciences?
What is History?

what insight could I particularly
offer?

How can I present examples of how
Science and the Humanities can
better communicate.

My experience:



In retrospect, the concept of contemplating both sides came from my childhood.

The first drawings I can remember were those copying **symmetry** on window curtains.

The 'twos' came from a yearning to venture out and experience the other families.



PAULA METALLO



On the Hole or Tutto sommato (Italian), Art on Toilet Plastic Covers, Series (See discussion on pp. 37-38)

I moved to Italy in 1993

I did a series depicting the **whole** and the **hole**. It let me visualize what I was losing and what I was gaining in the process of assimilation.

On The (W)HOLE

or in Italian

“Tutto sommato”,
which means

everything considered.

I think my motivation comes from, above all, a need. Perhaps it has something to do with Healing. Not healing like closing up a wound, but becoming sound (wholesome) by touching the whole picture.

Like my Geologist friends.

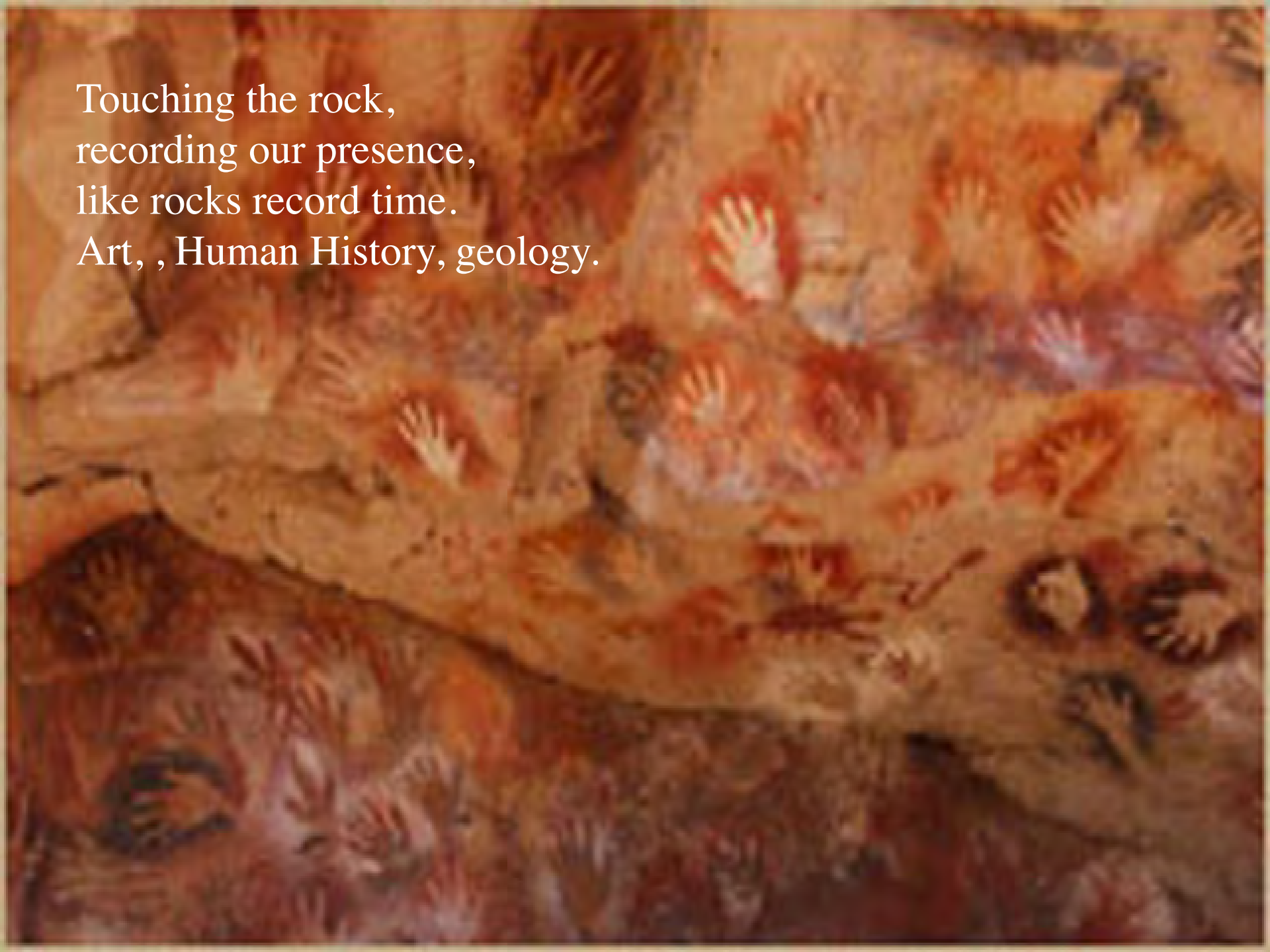


Geology, by successive sedimentary rocks, possesses a fascinating way of materializing time passing, rendering it concrete and tangible.

Lasagnite (delicious!) with a fold verging to the right.



Touching the rock,
recording our presence,
like rocks record time.
Art, , Human History, geology.



Living in another country pushed me towards a deeper mindset of comparison.

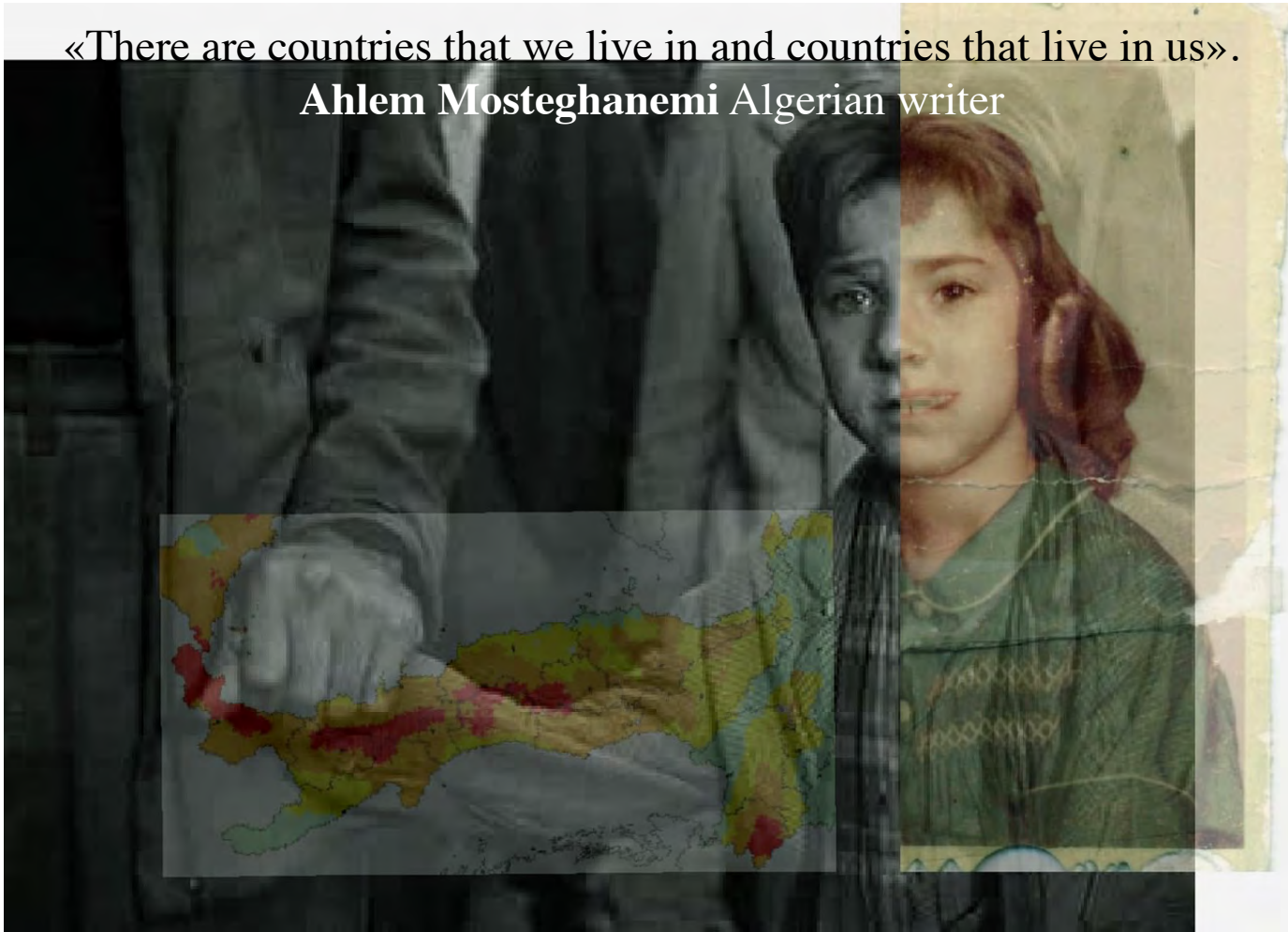
Of **like and unlike**.

After living in Italy for a number of years, I began to perceive subtleties that portrayed the peculiarities of the Italian culture and language.

*This brought advantages and disadvantages. I was bound to **misconstrue**, but my work also brought on a new twist, a fresh eye.*

«There are countries that we live in and countries that live in us».

Ahlem Mosteghanemi Algerian writer



What could the relationship be between the language of sciences and the language of humanities?

*“..Be willing to listen to each other. This may be especially difficult because both camps may use the same terms with sometimes different meanings. That can cause a lot of confusion. In that sense, it is much like **intercultural communication**, or so it seems to me, which is also a process of trial and error, requiring a huge effort..... and one simply never knows if one gets everything right or not. The safest assumption is that as soon as some confusion seems to appear, one needs to take distance and query the situation. But even though it is a long and often winding road, the results may be enlightening and very enjoyable.”*

Fred Spier and peruvian mask cultural anthropology, biochemistry



*“Sometimes I think Scientists have trouble communicating with non scientists because they immediately sum them up according to the language they are hearing. Kind of like someone not belonging to their **tribe**.”*

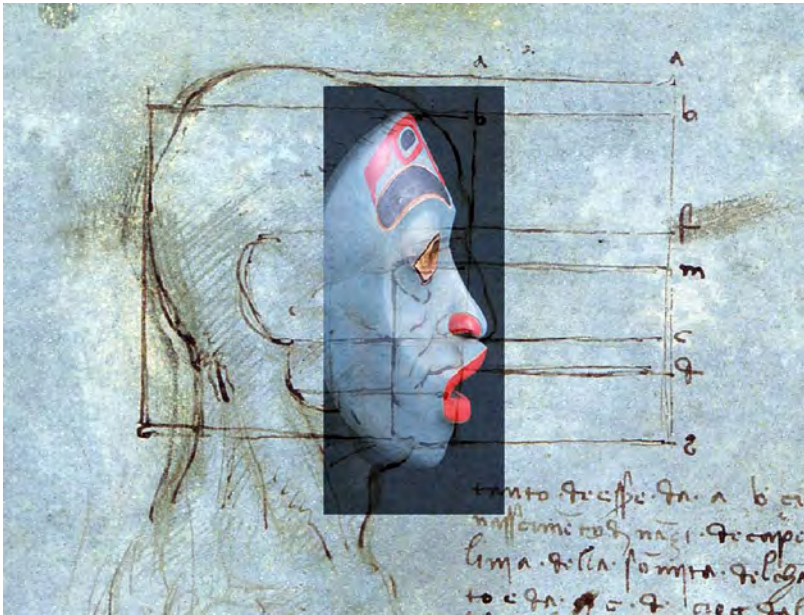
David Bice

“It goes without saying that when it comes to other people’s cultures we are generally the ones who are doing the measuring
AND providing the yardstick as well!

Whereas I am comfortable with the term Indigenous science, I am also a part of the western science **tribe**....

But what is essential is the importance of maintaining a balanced exchange of energy,
the connection of the human being to the cosmos and the nature of the processes of knowing.
Acquiring knowledge not like acquiring stocks and bonds but being transformed by a new knowing.”

F. David Peat Blackfoot physics 2005





*Learning another
language is not only
learning different words
for the same things, but
learning another way to
think about
(or measure) things.*

Alessandro Montanari and I teach
an environmental studies course.
My part of the course proposes
art through the history of visual
perception,
the history of photography, and
Mapping and measuring.

At times we get to work together.
A true engagement.

gruppo di ricerca Big History

17 Aprile 2018, OPPI, Milano

Organizzazione per la Preparazione Professionale degli Insegnanti
(organization for the professional preparation of teachers)

Presenti: Adalberto Codetta, Cristina Conte, Mariachiara Guidi, Domenica Lavallo, Silvia Morlotti, Camilla Provenzano, Marinunzia Ragazzo, Renza Cambini, Fabrizio Rossi, Patrizia Ruscelli, Antonio Mancuso, Paolo Vismara.

”Big History is a way to overcome the fragmentation caused by teaching based on separate disciplines.

If we keep teaching separate disciplines, we force young students to be always more unproductive and farther away from natural complexities of the reality they live in. Distancing them from complexity causes demotivation, instead, complexity is inclusive.”

Back to my work

translation



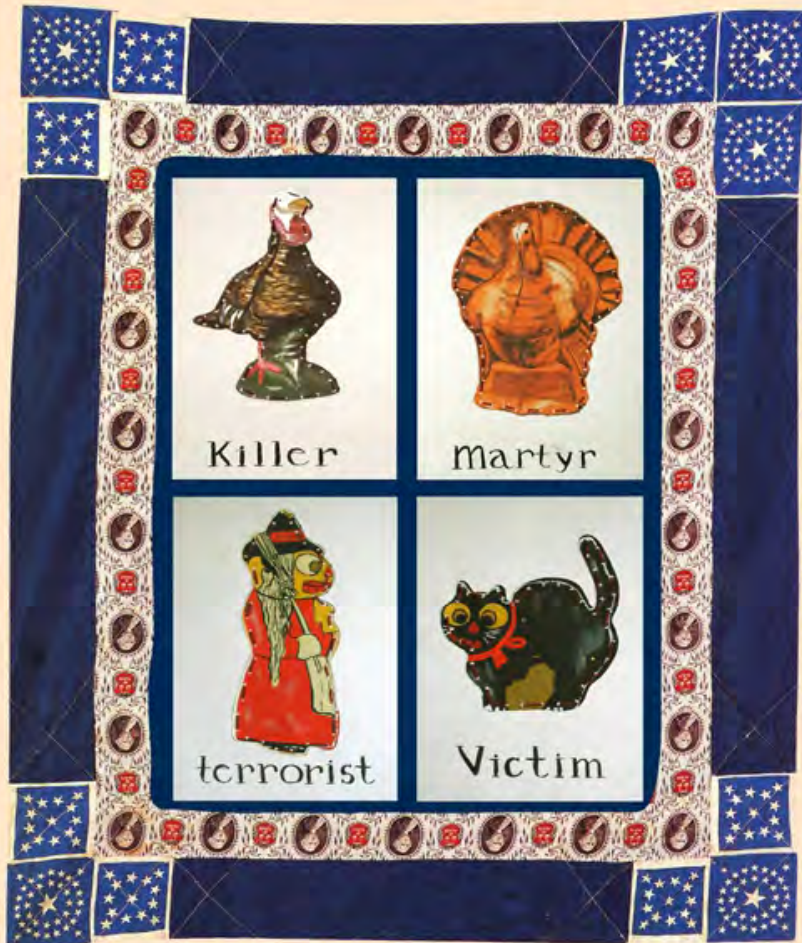
Tav. XXV - Piero della Francesca, *Battista Sforza nel Montefeltro*. Firenze, Galleria degli Uffizi.



Art can
illustrate the
layers of
history and
human
behavior.



AMERICAN HOLIDAYS



PAULA METALLO

**SESTO SENSO, VIA G. PETRONI 9c, BOLOGNA
DAL 2 MAGGIO AL 2 GIUGNO, 2003**

Dualism

In a series called *American Holidays* the drawings evidence complexities attempting to agree on definitions.

The toys refer to the celebration of particular moments in American history that are firmly unquestioned.

And a reference to children's flash cards and our first moments in life when we relate an object to its' name.

Once again language plays an important role.



It was inevitable that the work would pass from investigating people to relating to environmental issues.

I have lived around geologists and geology for most of my life. In 1993 I co-founded a geological observatory that has become, over the years, an international center for teaching and research.



Osservatorio Geologico di Coldigioco

goes beyond traditional boundaries, offering perspectives on creative
crossovers of disciplines, scales, and thresholds.

Without realizing it we have always, by impulse and inclination employed a
Big History way of learning and teaching.



"the rural landscape is so beautiful, the peace, the sense of community, the many stimulating conversations, the **give and take** in learning about each others disciplines -- and how I always feel a creative jump start."

Mia Chambers

On the wall in the lab at Coldigioco

..."Resolving a mystery is not the same as deducing from basic principles. And it is not even the same as collecting numerous particular data to infer from them a general law. Rather, it means to confront one, two, or three particular data which apparently have nothing in common, and try to imagine whether they may be cases of a general law that you don't know yet, and that perhaps was never enunciated..."

Umberto Eco, "The Name of the Rose", 1980.

The Most Unknown

A documentary film Directed by Ian Cheney.

We sent nine scientists across the world on a quest to explore the biggest questions in science, to find out what drives discovery.

The nine scientists went to extraordinary parts of the world to uncover unexpected answers to some of humanity's biggest questions: How did life begin? What is time? What is consciousness? How much do we really know? What emerges is a powerful reminder that the unanswered questions are the ones most worth asking.

Coldigiocian Geomicrobiologist, Jenn Macalady was one of them.



Geologist on the rocks

between earth history and human history

A devoted attention to the unknown.

Finding excellent, delightful(ly) unusual questions.

Coldigiocian Geologist, Ian Smit

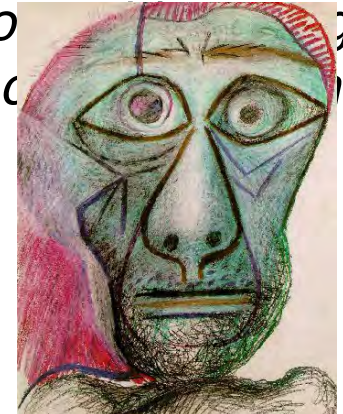




*“Old’ science,
studied today is not useless
but is a reality perceived in
historical context that helps
the scientist of today, to not
simply refuse it, but to
evaluate it as a progressive
contribution,
and in this way avoid using it
as mere sterile application.”*

Alessandro Montanari

Art and science are similar in



*to investigate
him.*

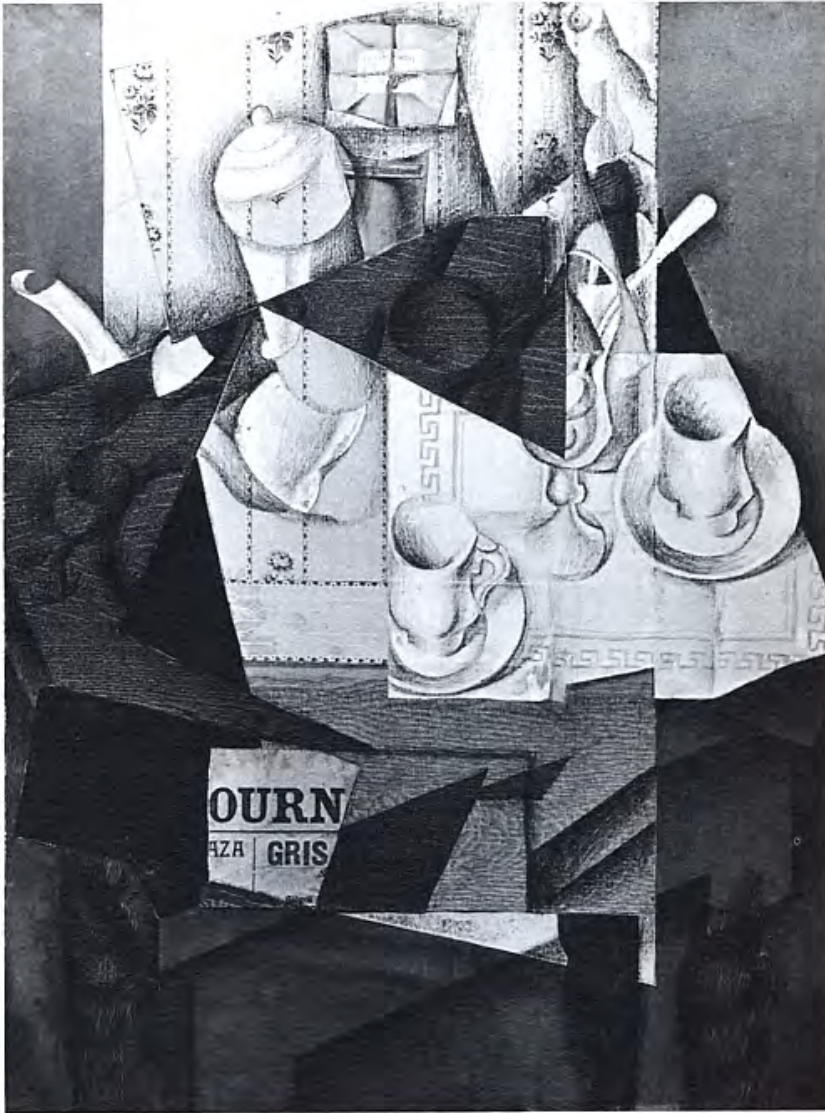


For the **Cubists**, the art of painting had to move far beyond the description of visual reality.

There was growth spurt like the Renaissance, 400 years later, when our relationship with image and our visual perception were pumped up by technological innovation:

The camera
motion pictures
theory of relativity
airplanes
automobiles

CUBISM



113. Juan Gris: *Breakfast*, 1914. Collage, crayon and oil on canvas. 38.9 × 23.9in. [97.2 × 59.7cm.]. Museum of Modern Art (Lille P. Bliss Bequest), New York.

1907-1921

A radical idea of space.
A new way of
understanding
rather than seeing.

A series of moments, in
time when exactly the right
ingredients and conditions
come together and result
in new forms of complexity
like

'goldilock conditions' in
science.



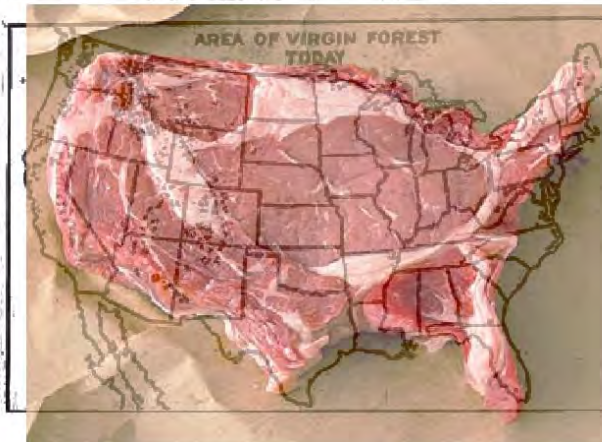
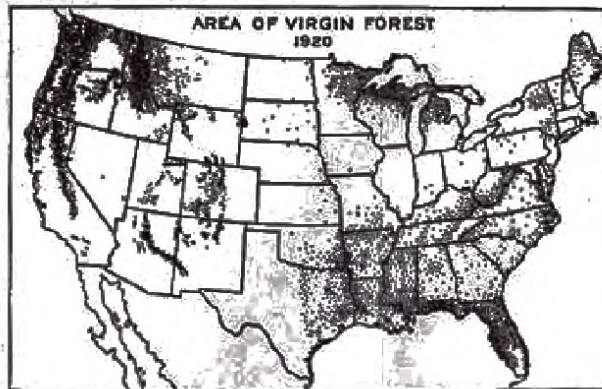
The **Humanities** show us how history has succeeded or failed in directing the fruits of technology and science to our betterment,

informing the sciences about the balanced usage-and the costs-of technology.

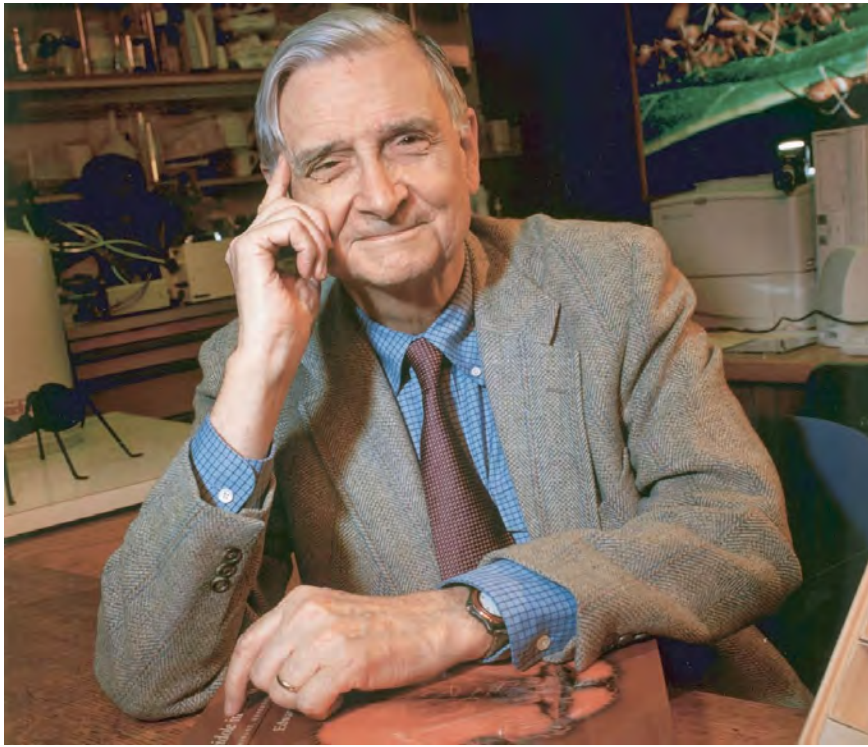
Museum of the American Revolution, Philadelphia-2017

“This is not your grandfather’s museum, either in the story it tells or in the way it tells it. It does not want to present history as a **pious sermon** but as a **richer, messier tale**. This messier tale exposes the hypocrisy of people who fought in the name of liberty while denying it to others.”

Scott Stephenson



"**Wašicun--wašin icu**",
(takes all the fat.)
the Sioux word for the
white man,



The key word in any research is
evolution,
how a research evolves.

Big History depends on evolutions to tell
a richer, messier story;

“Nothing in science and the humanities
makes sense except in the light of
evolution. The salvation lies in the

‘Big Five’:

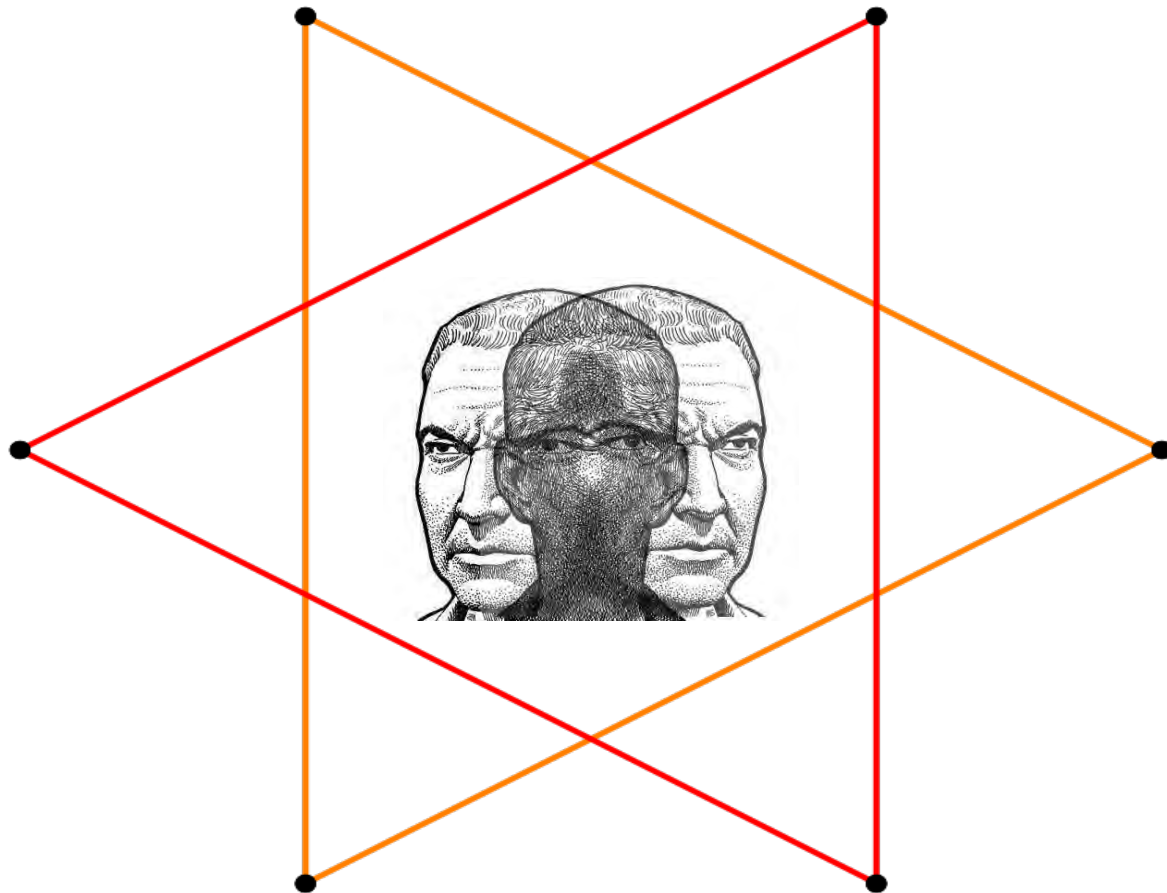
paleontology, anthropology, psychology,
evolutionary biology and neurobiology.”

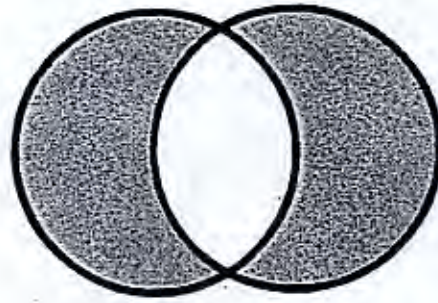
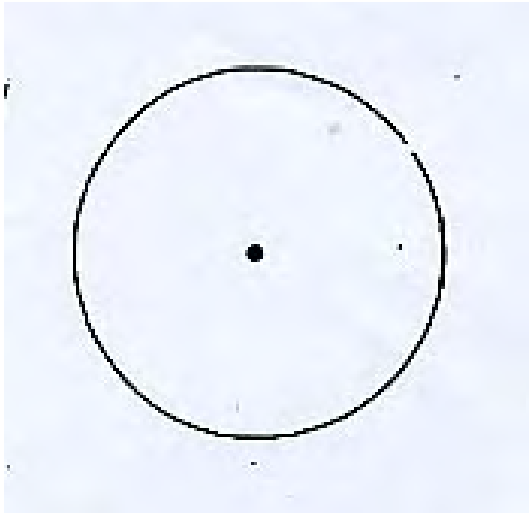
The Origins of Creativity,
Edward Wilson

(born, 1929), an American biologist, researcher,
theorist, naturalist and author. His biological
specialty is myrmecology, the study of ants, on
which he has been called the world's leading
expert. "the father of sociobiology"

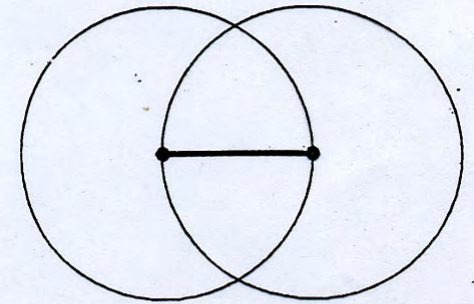
Back to my work

The hexagram
symbol of **duality** and **unity**.
arriving at a unity that is a **new vision**.
Like what appears in the middle





Vesica piscis, or mandorla.



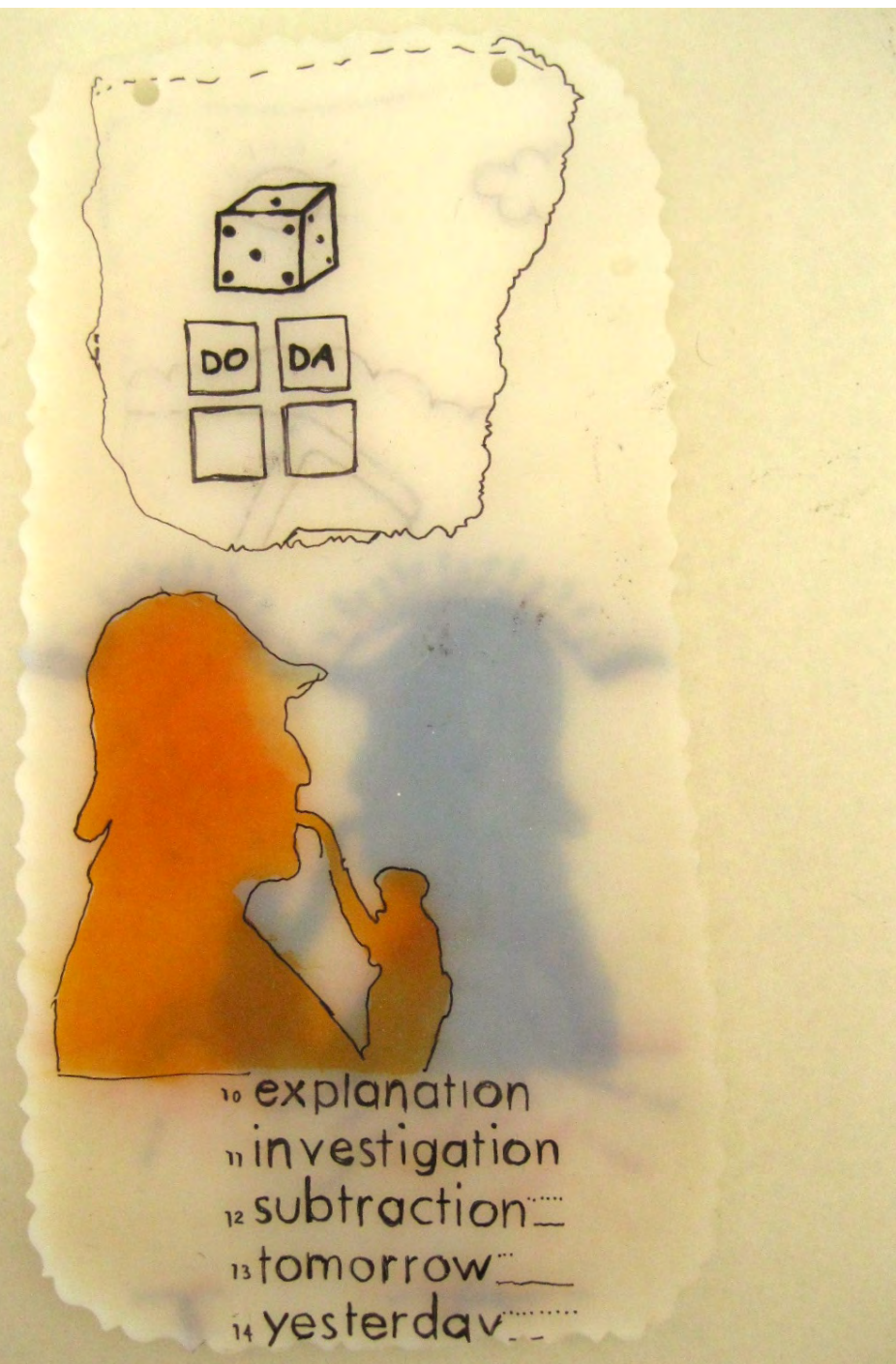
Birth of the Line.

It is symmetry,
the mirror image,
(the *vesica piscis* and the birth of the line and geometry)
it's the looking twice and
the half and half.
Like our eyes and our brains.



This chronicle of my artistic process shows 3 ways in which it led me to a dialogue with the sciences.

1. a need to compare, and the many ways of doing so. Mixing, blending, breaking apart.
2. sharing with science the idea of tolerating uncertainty, going towards truth but never getting there.
3. living around creative scientists with active imaginations, inventive ideas and the capacity to deal successfully with externally imposed problems or limitations.



This brochure articulates the investigation,

Take And Give,

explaining how I practiced questions and solutions,

noticed relationships

and

illustrated juxtapositions.

It demonstrates an approach where

one thing leads to another, influencing the curiosity driven direction in which the work is formed.