Art as a form of knowledge and as a creative process

If we were to turn the title of this paper into question form, we would find that there are a number of different answers, some banal, others not so banal at all. For a start: is art really a form of knowledge? Usually the answer to this question takes the form of a historical and cultural approach. The artistic output of a particular period is considered to be a means to understanding the culture of the times; almost all histories of art are based on this paradigm. The classic work by Foster, Krauss, Bois and Buchloch (2004) is a case in point; its pages include comments on how psychoanalysis was a catalyst for the art of the times:

... nevertheless, by the early thirties the association of some modernist art with “primitives”, children, and the insane was set, as was its affinity with psychoanalysis ... an interest in the unconscious persisted among artists associated with art informel, abstract expressionism ... rather than the difficult mechanism of the individual psyche explored by Freud, the focus fell on the redemptive archetypes of a “collective unconscious” imagined by the Swiss psychiatrist Carl Jung ... (p. 17)

and how it was influenced by the experimental school of Gestalt, for example, which provides guidelines for interpreting and analyzing individual works of art:

The cross at the center repeats the most basic form of a vertical figure against a horizontal ground, but this figure-ground relation is underscored here, only to be undone. This occurs not only through the excessive elaboration of the black stripes, but also because the whitish lines between them, lines that appear to be the “figure” on the top, are in fact “the ground” underneath ...Where Johns might be playful about this fact, Stella is positivistic; where all is “changing focus” in Johns, “what you see is what you see” in Stella (p. 409).

as well as, finally, mirror-imaging between a system of thought such as that of Ludwig Wittgenstein, who was probably the most important philosopher of the last century, and that of an artist or art movement:
Duchamp would remain a crucial point of reference for Johns. The same is true for the philosopher Ludwig Wittgenstein, whose critiques of language appealed to his sense of “physical and metaphysical obstinacy,” as Johns wrote in a sketchbook note (he began to read Wittgenstein around 1961, an interest soon shared by other artists of his generation, especially Conceptual artists).

These are examples of the most important instances of the reciprocal intertwining of *zeitgeist* and art. Over the last decades artists have also been strongly influenced by technological transformations, an influence which has produced new forms of artefacts (see Foster et al., p. 676).

The entire work by Foster et al., from which these excerpts have been taken, is constructed on these diverse forms of mirroring. However there is a more abstract approach to the question with which we opened this paper, which can be formulated much in the same way as the query that Roberto Casati (2011) posed for philosophy: what can we learn from studying and reasoning on a given work of art?

There are many ways of answering this question. The feeblest option is to assert that reflecting on a work of art helps us to better understand our emotions and how our cognitive processes work (e.g., the figure-ground example). The work of art is considered as a function of what the emotions and sensations it triggers in our mind, facilitating a more in-depth auto-analysis. In other words, our conception of the effect of the work of art is in relation to our understanding of ourselves, of our mental reality, rather than to its influence on the outside world, in the widest sense.

Another possibility, which is a little less feeble than the option illustrated above, is that the work of art shows us the pre-conditions for a knowledge process. For example, examining a work of art helps us to understand the functions of signs. This requires a reference to the original work on the subject by Charles Sanders Peirce who identified three main categories: symbols, icon, and indexes. Each example of this type has a different relation to its referent. Symbols have a purely conventional relationship (e.g., the name i-phone and the corresponding smartphone); indexes have a causal relationship, as footprints in the sand or broken branches in the forest are traces of a human being or a beast which passed that way; icons share some invariants, as in Wittgenstein’s famous example of the movements of a pianist’s fingers over piano keys, the production of mechanical waves and the perception of music.

If we apply this tripartition in our contemplation of works of art, we will discover that they do not fall into just one sign category but are a combination of the three typologies; take photography, for example, which is a blend of icons and indexes. And so we can say that the examination of a work of art helps us to a better understanding of the different types of signs and how they interact (Foster et al., p. 685).

There is also the possibility of a more articulate answer, sustaining the position that the contemplation of a work of art, as in mathematics, facilitates our comprehension of the structure of the ideal objects invented by man. Just
as reflecting on numbers leads us to understand them (Casati, 2011, p. 114), contemplating a work of art stimulates reflection on the question: is art part of the outside world or is it just a mental reality? And if it is both, where is the borderline?

The passage below is an example of a reflection on the so-called “Cubist grid” (Forster et al., 682):

The Cubist grid is, perhaps, the first instance of the kind of pictorial composition that would later in the twentieth century come to comprise the whole of Frank Stella’s paintings. Derived from the shape of the canvas and repeating its vertical and horizontal edges in a series of parallel lines, the grid is an instance of drawing that does not seem to delimit a representational object, but, mirroring the surface on which it is drawn, “represents” nothing but that surface itself. Stella would make this “mirroring” more emphatic by casting his paintings into eccentric shapes… there was not only no question of anything but the shape itself being represented, but also no possibility of reading “depth” or illusionistic space into the surface … Writing about Stella’s work, the critic Michael Fried called this procedure “deductive structure”.

This step leads us to consider art as a cognitive (thought) process bound by constraints. The history of art evolves by progressively breaking down constraints, so that works of art can be created that flout preceding rules. In this perspective, Stella’s “deductive structure” can be compared with the important results obtained by adopting formalisms and computation:

- The combinatorial explosion which thwarts attempts to verify that areas of knowledge are consistent (Legrenzi et al., 2003);
- Gödel’s incompleteness theorems;
- Arrow’s paradox, which illustrates the conditions under which a given voting system cannot satisfy the transitivity of the preferences and so on.

Likewise the creation of artistic artefacts can be considered as the progressive demonstration that:

- it is not necessary to layer images one on top of another to obtain a bi-dimensional representation of a tri-dimensional spatial distribution of objects: an aerial perspective based on the grain of the surfaces can suffice;
- lines are not necessary to delimit boundaries, nor is colour needed for colouring: Matisse understood why Cézanne had to annul the traditional opposition between colour and drawing. Since any single colour can be modulated by a mere change of proportion, any division of a plain surface is in itself a coloristic procedure (Foster et al., p. 75);
it is not necessary to have just one single viewpoint, as can be seen in the landscapes painted by Picasso in Spain at Horta de Ebro in 1909:

... for in these works, where we seem to be looking upward - houses ascending a hill toward the top of a mountain, for example, their splayed apart-roof and wall planes allying them with the frontal picture surface - and yet, in total contradiction, to be precipitously plunging downward ... (Foster et al., pp. 109-110);

... in these works by Picasso, there is no need for the coherence between visual and tactile experience, the problem which obsessed nineteenth-century psychology as to how separate pieces of sensory information could be unified into a single perceptual manifold (Foster et al., p. 110, Bruno et al., 2007)

And finally, there is no need for an ontology (Ferraris, 2009), as the work of art becomes pure epistemology: “with Morris's early work it also became evident that a work of art can be created merely by naming it so - which could open in turn onto what one could call the administrative or legalistic definition of the work (Foster et al., 528-529).

This progressive breaking down of the previous constraints through a series of increasingly abstract and general invariants until the criterion of mere definition is reached, is perfectly aligned with the three mental models of creativity proposed by Philip Johnson-Laird. On the one hand, this progressive breaking down of constraints is not a random process; it is controlled by invariants:

Consider, for example, Picasso as he is painting a particular picture. At any moment, there are probably several brush strokes that he could make, - all of which would yield a perfectly recognizable Picasso picture ... (Johnson-Laird, 1988, p. 256)

So while painting is, piece by piece, a random process, there are also a number of invariants. Experts are able to identify a picture as a Picasso or a Monet even if they have never seen it before, and they can do so without being able to articulate the cues they use. These skills demonstrate how random and deterministic processes intertwine in creating a work of art. If the processes were entirely random it would not be possible to recognize a style; if they were totally deterministic the entire sequence of brush strokes would be imposed by the first. Johnson-Laird defines this combination as a multi-stage procedure when describing his three mental models (2006, pp. 52-53):

The third sort of process takes the multi-stage procedure to an extreme. All the constraints that we have govern the generation of ideas. So, if the constraints are viable, the output needs no revision. By definition, no other
constraints exist to evaluate it. At various points in the procedure, there may be more than one option, because constraints seldom yield just one possible next step. But, because we have used all the constraints we have, a choice among the options must be arbitrary. The choice is where the nondeterminism of creativity enters into this process.

The history of art of the 1900s as proposed by Foster et al. can be seen as the narration of the progressive breaking down of constraints until just one remains: the author pronounces an artefact as being a work of art and establishes the boundaries between what is art and what is not. When Maurizio Ferraris visited the Marlborough Gallery in October 1996 he posed the question: why, when everything that is housed inside this gallery belongs to the Artworld, do we not generally consider the Rolls Royce Silver Shadow used by Botero to go to dinner after the show as a piece of art?

References