Symmetry: Art and Science
Tihany Congress, 2004

SCIENCE OR ART? WHICH ONE WILL SAVE THE WORLD?

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Abstract: *If it is just a cup you are trying to define by interdisciplinary comprehension approach and study, you will produce a simple cup. A cup that is different than any others you have already produced. And most importantly you would have re-defined a cup from scratch. Interdisciplinary approach to subject matter is a key answer to our questions.*

1 INTRODUCTION

It was 1990 and I was just a student in the second year of the college. In his lecture of the Analysis Course, Prof. Koçak has addressed a question to the class: "Look at the drawing of "$y = - x^2$ parabola" on the blackboard. What would the surface look like, when you turn the parabola 360° around the y-axis?" There were almost forty people in the class but only one of them could perceive it similar to a "bullet". What is interesting in this matter is not the fact that only one student could answer the question, but only that student could identify a 3-D form out of 2-D drawing. Throughout the mathematics education, we have tried to understand many theories about surfaces or spaces, which were totally beyond our imagination. Upon this little anecdote, I asked myself, "How come we could imagine these unidentified forms in our minds?" Did we register this as a sentence out of some symbols gathered on a piece of paper? If so, the essential questions are:

- How can we explain it?
- How much can we explain it?
- And what can we say about it?

I lectured as a mathematician in many seminars at the Hacettepe University's Fine Art Faculty. I usually prefer to describe the matter by simple examples: "Lets say you are asked to form a cup out of anything you like? Most people would pick up a prism shaped material to start off. However, I would choose "a circle and two line families" or "two conics" to form the same cup. The students attending to the seminars, usually, give the same response; they say "we are using mathematics to create sculptures, however in the form of "vector mathematics". This argument is acceptable but the richness of mind in theories is not limited to this information.
Some people may have trouble to perceive an object in 3-D, whereas others may perceive 3-D objects easily but have trouble with different variables and dimensions. While we are searching for an answer to a question in science or art, we are specializing ourselves in one field and neglect the rest. I strongly believe this is a wrong approach.

2 EXPRESSING THE OBJECT

One of my sculpture professors, Prof. Dr. Germenalp says "A good piece of sculpture should create curiosity about the indistinct parts of itself. You should feel a strong necessity to turn around and have a look from different angles. On the other hand Prof. Koçak, a mathematician, says "Break the limits of your minds. Try to draw X, Y, Z axes in an order totally unfamiliar to your experiences." When I think of all these considerations, I always get to the same conclusion. Whatever we question –an equation or a sculpture– we should consider all aspects of the matter, with all possible and impossible different perspectives using the knowledge we already have.
Recently, I am working with a mathematician, Dr. Azcan about collinations on 2 dimensional planes. As an introduction to the subject, he metaphorically said, "When you find out the picture of a set under a collination, you may be surprised if the picture looks like of a Picasso's work." When he saw my work for the first time, he told me I was actually utilizing collinations. Dr. Türkkan, a sculpture builder on the other hand, says my works build balanced spaces, which are almost perfect as mathematics itself.
We are back to the basics. If it's just a cup you are trying to define by interdisciplinary comprehension approach and study, you will produce a simple cup. A cup that is different than any others you have already produced. And most importantly you would have re-defined a cup from scratch.
I think Leonardo da Vinci did not waste his time working on human anatomy for days. I also assume that, Calder's sculptures in forms of little red objects hanging are independent systems, which can be defined by Calder himself. I strongly believe every single score in Stockhausen's *Sirius Symphony* is organised according to a certain mathematical order. The visualization of Lorenzo Theory always reminds me of Escher graphics.

I mention Boccioni and Gabo in different contexts since the concept of speed are defined in different ways by futurists and by constructivists. That is why I think Euclid and Riemann show us the different faces of the world. I believe, all creative minds that are in traces of puzzling questions, scientists or artists, are stroking in the same unknown waters. That is, to find new approaches, which will push science and art another step forward, the scientists and the artists should have some interest in each other's disciplines.

While designing the forms, I have developed complex surfaces using simple figures. I used semi-transparent paper material. My intension was to produce another dimension on the sculptures through light and shadows. While working with steel, I have tried to utilize the reflection of metal surfaces, to produce a similar effect.

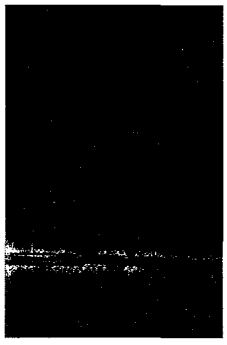

Figure 4:
Nameless-KP3020

Figure 5:
Nameless- M2941

Figure 6:
Nameless- M2962

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