Valentino

Valentino was a giant. Giant of the kind we do not see any more these days in science. He had strong opinions on how science should be done and his science was carried always in the way it should. I know that it can be difficult at times to live with a person of very strong opinions, those who were close to him had to endure also some difficult times. However, for science, his attitude was a major source of inspiration.

I first met Valentino in Lausanne at a small workshop that the late Hendric van der Loose summoned. He showed there multiple transparencies of Golgi-stained pyramidal neurons put them one on top of the other on an overhead projector and explained the statistical nature of the cortical structure. That stroke me like a lightning. It was absolutely clear that this is the way to study the structure of the brain. Such a study directs ones thinking on brain-mechanisms in a way that must conform the brain's structure.

Up to then, we saw in the literature on brain histology mostly exquisite drawings of impressive neurons. As Valentino said, anatomists are like butterfly collectors, they look for, and report, only the most impressive exceptional cases and ignore the huge majority of neurons. However, it is this majority that must be carrying out the brain computations.

A couple of years later when I was at a European neuroscience meeting at Florence, I rushed to see his poster presented by Günther Palm and Almut Schüz. There, the quantitative figures and statistics of the cortex were the most compelling and meaningful approach to the study of the cerebral cortex I read or heard about anywhere.

When Adam and Eve ate the fruit of the Tree of Knowledge, they did not suddenly know everything, all they knew is to distinguish between good and bad. This is true till this very day. It is extremely rare for somebody to create a wholly new idea, but when we hear a new idea we can tell whether it is good or bad. Scientists are extremely good on elaborating and testing existing ideas, but it is extremely rare to create something that is genuinely new. Following these two encounters with Valentino's work, I knew that this is the right way to approach brain structure, and admired his creativity in bringing this idea to fruition.

Some years later when I was considered for promotion at the Hebrew University, Valentino sent me a copy of his confidential letter of evaluation with a little emblem on the top saying:

> Whenever asked about somebody,
> or somebody's work, I let him
> have a copy of my letter, without
> identifying who asked about him.

I immediately understood that this is the fair way to behave, and ever since I do the same.

Immediately after the Florence neuroscience meeting, I went to some meetings in Germany, including an invitation by Karl Götz in Max Plank Institute in Tubingen. At the end of my seminar there, Valentino wanted to go out for dinner with me – but I could not, so he rushed me to his office and gave me a

masterpiece treatise “On the Texture of Brains”, where he most convincingly shows that the apparent random nature of cortical architecture is not a weakness of nature. Many brain architectures such as the cerebellum and the optic ganglion of the fly are structured in a highly ordered way. Therefore, he concluded, the cortex is a big “mixing machine”. Once more an enlightening new concept.

Shortly after that he invited me to contribute a book to his series on brain studies. I was amazed that after listening to 1 hour seminar he thought I could contribute a full monograph. I am most grateful for the opportunity he gave me to expose the implications of my physiological finding on brain function in a way which is not possible in the standard scientific articles.

We met many times following this visit, including a long visit (with his daughter Carla joining him) in the school of advanced studies in Jerusalem. There, I was fortunate to talk with him on a daily basis. We had many more meetings throughout the years.

Among our countless meetings I wish to mention the meeting at EMBO (European Molecular Biology Organization) at Heidelberg. EMBO summoned a workshop under the title – How can we use modern molecular biology to understand the brain. Valentino gave there a talk on the morphology of the cerebellum and what we may learn from that on its function. He opened his talk saying: “For every problem there is an adequate scale, you do not want to read the newspaper with a microscope”. A distinguished molecular biologist from Israel told me immediately after Valentino’s talk: It was worth the trip from Israel just to hear this man. Another example of ability of man to tell “good from bad”.

Yet, it seems that culture has destroyed this ability in some quarters. Only a handful of American scientists did see the greatness of his work. In a public lecture one very famous “butterfly collecting” anatomists in the US described Valentino’s approach as: the cold soulless statistical approach. What a shame! Nowadays almost nobody relates to this anatomist’s work while many of us are living and working in the light that Valentino shed on cortical structure and its implication for cortical function.

Valentino’s work on the cortex culminated in his joint work with Almut Schüz: Cerebral cortex: Organization and Function. The summarizing table at the end (Fig. 80 in the 2-nd edition) and the following conclusions are in my mind **the most important** contribution towards understanding brain function since Cajal’s hypothesis about the existence and function of the synapse.

Valentino – we miss your clear thinking and guidance.

M. Abeles – Head
Gonda Multidisciplinary Brain Research Center

המרכז הרב תחומי לחקר המוח ע"ש גונדה

אוניברסיטת בר-אילן, רמת-גן ישראל

Modiin (Israel) 2 October 2011

Two Photographs reporting our encounters

1988, when Elizabeth joined us for a trip to Jerico

1993, when we took a hike to the monastery in Wadi Kelt (Judea Desert)