

Between “Bastiaan ou de l'éducation” and “Bastiaan und die Detektive”

Bastiaan van der Velden, Utrecht and Amsterdam

Introductory Remarks (by Hans-Georg Steiner, Bielefeld):

The author is a grandson of the famous Dutch mathematician and mathematics-educator Hans Freudenthal (September 17, 1905 – October 13, 1990), who used to observe and discuss phenomena in nature and environment with his grandchildren, particularly with Bastiaan. Related publications are “Wandelingen met Bastiaan”, *Pedomorfose* 25 (1975), 51–64, “Bastiaan’s Lab”, *Pedomorfose* 30 (1976), 35–54, including “Bastiaan’s Experiment on Archimedes’ Principle” (see also *Educational Studies in Mathematics* 8(April 1977)No.1,).

Einführende Bemerkungen (Hans-Georg Steiner, Bielefeld):

Der Autor ist Enkel des weltbekannten Mathematikers und Didaktikers Hans Freudenthal (17. September 1905 – 13. Oktober 1990), der es liebte, Phänomene in der Natur und in der Umwelt mit seinen Enkelkindern, insbesondere mit Bastiaan, zu beobachten und zu diskutieren. Publikationen in diesem Zusammenhang: “Wandelingen met Bastiaan”, *Pedomorfose* 25 (1975), 51–64, “Bastiaan’s Lab”, *Pedomorfose* 30 (1976), 35–54, darin “Bastiaan’s Experiment on Archimedes’ Principle” (siehe auch *Educational Studies in Mathematics* 8(April 1977)H.1).

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The fact that I measure not any longer 1 meter 15 cm will not surprise you. The *Walks with Bastiaan* which Hans Freudenthal, my grandfather, describes were about twenty five years ago.

You probably expect me to give my recollection of what Hans published as the *Walks with Bastiaan*. However, it is quite difficult for me to write about the walks. Memories of those times have faded more and more. Certainly, one could look at pictures to reconstruct memories, or even look at films. For me, the memories are so clear because I have the possibility to reread them time over time. This, however, makes it difficult for me to set my own memories against the stories written by Hans. The possibility of rereading complicates the reconstruction of my own image of those days. I do not remember, e. g., that we walked so often together. What I do know is, that I liked to walk to distant places like the DE Coffee factories. They all seemed very far away then, today I walk to the railway station or to town in fifteen minutes, in my memory it seems far away like Australia. The park where we went to most of the time was, when I reread the *Walks* now, a place so common to me, I could draw a plan by memory. It also is the place where Hans died many years later.

The next paragraphs will be a wandering through the *Walks with Bastiaan*, which I read and reread. I’ll try to give my reflections of the *Walks* to give an impression from today’s point of view.

We did the *Aristoteles experiments*. I only remember the stove on the fridge in the kitchen where Hans lighted the fire to heat a glass above it. All these experiments took place in the home of my grandparents, who certainly both had an equal share in the publication of the *Walks* and *Experiments*. It was the magazine *Pedomorfose*, edited by

my grandmother Suus, which published the *Walks*.

When rereading the *Walks*, I came across the story in which I drew the conclusion that when clay was taken away from the canal, it had to be replaced by water. Today I only remember that I collected the clay to make something, a house or a boat. In this way we collected and took home many pieces of wood, broken mirrors, train tickets and chestnuts. I made all kind of machines out of it, and the materials were also used to do the experiments, for example to measure the height of a church tower.

What did we do to measure it? The church had a large square in front of it, and the shadow of the church tower was visible on the square ground – it would be possible to calculate even today the time of the day we did the experiment. Shadows, the difference of the length of my grandfather and me, is still a clear and strong image to me. The size of Hans’ shadow and the shortness of mine.

For measuring we used a piece of mirror found on the street, probably from a broken car mirror, then we used a piece of wood from a tree, and we counted by steps the length of the shadow. I think the mirror was not necessary to find out the height of the tower, but at that time it was. It was not just an experiment, in the way of a try out, it was a real intellectual goal to find out the height of the church. The approach of the experiment was highly structured, first looking at the tower, estimating the height, comparing the tower with other objects: with the trees around it, with Hans, with myself, then we made a plan and organised the materials necessary for measuring like the mirror and a piece of wood.

At school I had to keep a diary every day, already at the age of 7. I still have it. Although the diary covers over two years, I only wrote once or twice about the walks. So I looked up if I had written something about the church tower. I found a short notice:

Yesterday I went ... / Did this with my grandfather. It was great. / I used a ... /

I know that my text is about the measuring, because I drew a picture next to it which is identical to the one Hans used in his article.

Apparently the next day I could not recollect some words’ use that afternoon. Maybe I had forgotten the words by then, maybe I did not ask for their names, being so absorbed by the action of that afternoon. They must be “measuring” and “experiment”.

Once in a while we went out to the national park the Veluwe, and to the forests around Utrecht, but it was mainly the city where we wandered around, and it was the town which fitted perfectly for the experiments. Specifically Utrecht: old canals, grey clouds in the sky, the Amsterdam-Rhine canal, the Dome tower and the Holiday-Inn hotel with a bar on the 21st floor with a magnificent view over Utrecht and the railway station. We visited the museum from the catholic church located in an old building with old wooden floors storing all kinds of religious paintings by second rank seventeenth century painters. Another museum we went to was the City Museum, with a Viking boat in the cellar. When you have visited it one time, you will always remember the smell of the preser-

vation chemicals. Other museums we visited where the museum for prehistory and ancient art and the geological museum, both in Leiden, the National museum in Amsterdam and the Technical museum in Eindhoven. When we visited a museum, very often a group of people gathered around Hans to listen to his explanations Hans gave to me. Whether it was a historical topic or a technical one, he started as a real encyclopedist telling stories à l'improviste who attracted not only young children but also grownups.

One of Hans' articles I liked the most is called *Creativity*. During one of the walks I found some pieces of metal of a wharf where we passed quite often. It was in an industrial area, with a little harbour, railtracks, and a lot of mess. Out of a piece of this waste I formed a little dog by bending an iron leftover in the middle, The dog stood in our living room for a long time, and I didn't know Hans wrote about it. The article as such is only two paragraphs long, he didn't write one word too much. Hans gave the article the title *Creativity*, not to define creativity, but he recognised something and then wrote about it. In most of the walks he did not draw a conclusion or interpretation, he wrote down what he saw, as objective as possible. Conclusions are missing, the walks were an attitude, a way of looking and regarding.

Between "Bastiaan ou de l'éducation" and "Bastiaan und die Detektive" he chose for the latter.

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