On Traditions
in Marktoberdorf

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Abstract. Origins are proposed for certain well-known traditions at the Marktoberdorf advanced courses in programming methodology. The evolution of these traditions, over the years, is also discussed.

1. Introduction

Most will agree that the 1994 summer school at Marktoberdorf on Deductive Program Design has been a success. As it draws to a close, it is tempting to wonder why. Surely—you will say—this follows from the audience, who are of a very high calibre, the lectures, which were educational and entertaining (and sometimes both), and the organization, which was efficient and effective. But many advanced courses have good students, lecturers, and organizers. Not all advanced courses are successes, however.

This school has one thing the others lack: a rich set of traditions. So, when the directors of this advanced course, Professors Broy and Gries, asked me to address you at this farewell banquet, I thought that I would do some research and say a bit about the origins of these traditions.

My conclusions must be regarded as tentative. I have had only a few days to conduct my research. And, as you might expect, most of the literature on this subject is written in German. My knowledge of German is quite limited.

2. On Locations

My first investigation concerned why this summer school is held in Bavaria. Of course, it would be confusing to hold a Marktoberdorf summer school anywhere else. This, however, begs the question. The induction step is justified but not the base case. Why hold the first school in Bavaria? Fortunately, this was a question that I could address, even with my limited knowledge of German! In fact, any of you could have discovered the answer to this question.

Wander into a store, and one is greeted "Grüß Gott!" (pronounced "grease god"). And, this is said even if the speaker has never read any of Professor Gries' papers or books! "Grüß Gott!" is said to course participants and non-participants alike. The summer school *must* be held in Bavaria because the entire population of the region has made a religious commitment to one of the school's directors!

3. On Colors

My second investigation concerned the well-known tradition regarding use of color on slides. As you know, yellow is forbidden, blue is preferred to red, and plain blue is preferred to blue and red. Historians do not agree about the origin of these restrictions. Some historians argue that the restrictions ensure that slides (and lectures) will be accessible to an audience. Others contend that the restrictions were intended to serve the lecturers, by ensuring that slides would be dull and would not convey much information—to create a mystique about the material (called the "Marktoberdorf Mystique").

In my research, I have discovered the truth about the tradition. The historians had made the mistake of projecting our concerns of today on behaviors of the past. This may be natural but—as we have been told—what is "natural" and what is "correct" cannot coincide. The truth is found only by analyzing the historical context in which the Marktoberdorf summer school was first started.

A cold war was being fought against communism, and NATO was battling the so-called red menace. Recall, NATO is a sponsor of this course. In fact, the flags of the NATO countries adorn each of our name tags. These flags provide an answer to the question: "Why blue?" Study the flags of NATO member countries and you will find fifteen use red, twelve use white, and ten use blue. Red is unthinkable for NATO-supported presentations, it being so closely associated with the menace. White is extremely difficult to read in a lecture room. That leaves blue. So you see, then as now, the restriction has nothing to do with accessibility or inaccessibility of lecture material.

4. On Identifiers

Some traditions have changed over the years. One such tradition concerns the naming of identifiers in programs and formulas. Some years ago, Professor Dijkstra decreed that meaningful identifier names should be avoided. A meaningless name was music to his ears. All lecturers and students were expected to use single-character identifiers.

Using single-character identifiers caused problems, however, because languages spoken by Marktoberdorf participants contained words that were mistaken for these characters. This led to construction of a list of *accredited single character identifiers*, known as asci (not to be confused with ASCII). The list is a well kept secret, known in its entirety not even to a single director. But we do know some of the identifiers (characters) excluded from the list:

"I" and "U", to avoid ambiguity that can arise in sentences like "You may be removed but I may not.",

"A", which may be confused with the (English) article,

"O" and "G", which may be confused with the first word of exclamations "Oh Boy!" and "Gee Whiz!" frequently spoken by Marktoberdorf lecturers,

"Y", which may be confused with the (English) interrogatory (Why?),

"C", which may be confused with the (English) verb (Do you see?),

"Q", which sounds like a data structure,

"R", a form of the (English) verb "to be",

"T", a drink,

"P", a "negative" drink,

"XL", because we all try to excel,

"E", which may be confused with the (Portuguese) conjunction, and

"Z", because non-native English speakers may have an accent and "Z" can be confused with "the". (Z lecture is almost over.)

5. On Processions

As you must have observed, lectures at our summer school are terminated with a procession down the two side-aisles of the lecture hall by the directors. The procession always starts exactly 5 minutes before the lecture ends. Apparently, the directors can predict the future! The history of this tradition is rather surprising. You see, it originally had nothing to do with schedule keeping. Years ago, lectures in this summer school concerned the development of loops using loop invariants and variant functions. A walk down the the aisle was a graphic way to portray the decreasing value of a variant function. Doing so at the end of *every* lecture, therefore, served to assert the primacy of this notion.

Historians do not agree about why there are now two people involved in the procession. Some historians believe that the second director appeared only when concurrency became a theme of the summer school. Those opposed argue that having non-interfering, yet tightly synchronized, directors did not constitute a useful model of computation—only interleaving would have been sensible. Another group of scholars, who have access to information about past lectures, have argued that the presence of second director accompanied the presence of a particularly heavy topic. Or was it a particularly heavy lecturer? One thing is clear. If directors at the next summer school wear sun glasses, it is to combat Alain Martin's laser-pointer defense.

6. On Umbrellas

I found researching the origins of the summer-school symbol, the umbrella, particularly intriguing. By now, I'm sure that you have heard, it protects the operator against both rain and sun. But are you aware that it protects against an attacker as well? In fact, it can be used quite effectively in a technical debate, when words might fail. The umbrella is also a bistable device; it can be open or closed. This means that the umbrella can be used to implement digital hardware. The fabric of the umbrellas that we were given is white, which means the umbrella can be used for taking notes or for prototyping twelve of the sixteen NATO flags. When viewed from the top, the open umbrella approximates the category-theory wok symbol, about which we have heard so much; when viewed from the side, the umbrella looks like the category-theory banana symbol, about which we have

heard too much.

The umbrella is an improvement over an earlier summer school symbol, the tee shirt (which can no longer be publicly discussed, because of the single-character identifier). The white tee shirt could be used as a basis for note-taking. It could shield the operator from rain and sun. And, it too was bistable, since it had an emblem that could be worn either on the front or back. Of course, the tee shirt has limited utility in winning arguments. This is what probably led to the change of symbol.

7. On Contents

The subjects discussed in the Marktoberdorf summer schools change from year to year. Some might regard these changes as indicative of progress in the field, but I am unable to identify a well founded ordering to corroborate this. I presume there is also an invariant, but this too alludes me.

For example, in an early summer school, Professor Dijkstra was proud to construct an elephant from mosquitoes—his description of a heavy-weight computation implemented by a concurrent collection of lightweight process. At the 1994 summer school, Professor Abramsky was proud to be manipulating what he termed, "elephants standing on top of elephants" all the while asserting "Reality doesn't constrain our formalism" as if we thought that manipulating "elephants standing on top of elephants" was realistic.

Professor Broy, on the other hand, has taken refinement to new heights. Previous summer schools used bounded buffers to illustrate verification methods for concurrent programs. Now, Professor Broy has spent four entire lectures specifying 1-element bounded buffers. As I see it, this was actually a very smart move. At the next summer school he can tackle 2-element buffers; then, 3-element buffers.

Professor Bird has finally admitted that he was studying a "pointless relational calculus". This was welcome news, since I had always preferred predicates to relations. But then Professor Dijkstra seems interested in a "pointless predicate calculus". If it is pointless, why bother?

Perhaps you can discover the variant function and invariant that ties this all together. In the short time allotted to me, I could not. One thing is clear. It would take a great deal of study to really understand the traditions. Apparently, something can work even if it is not understood.