File 20120530.0815: Notes from meeting with Dr Fléchais at 0700 this morning: I reported that the data analysis is going well. I described my hybrid paper, text file, and software process and how ATLAS.ti seems to be usable with a large, high-resolution screen but not with the small screen and no mouse I've got. So I print out pieces of evidence and categorise them with notes written across them, then record those notes in a text file so they don't get lost, and finally transfer the information into the tool. I want another week to work on the data analysis, then I'll report status and progress.

Dr Fléchais said that his main concern is how long it's taking to analyse the data. I must do the analysis to an extent that will satisfy the internal and external examiners, but he urged me to keep it simple. I said I have been thinking about ways to constrain the size of this, focus it to a manageable size, keep the length of the dissertation relatively short, which will help with the writing in the limited time allowed. Dr Fléchais asked about my dissertationd draft I sent earlier; I said please ignore that, it's all changed; but I don't have time to write right now, I need to finish the data analysis, and he said that is exactly right. I am doing what I need to be doing and in the right order.

Earlier I'd estimated that I had perhaps 100 pieces of evidence to code. Now I know it's 812. With such a mammoth task, what I need to do, according to Dr Fléchais, is to *justify that the analysis I show is good,* ***and to do that, a simple theory is best.*** Simple, with lots of data pointing to it.

I should reflect on how I simplify it—any thoughts I have about how I simplified the theory belong in the methology section of the dissertation and should be preserved. Insights like that are worth keeping notes on. I told Dr Fléchais that I have such notes already.

I need to reassure Dr Fléchais by sending him units in ATLAS.ti to examine. Whatever novel methods I have developed. Put all that in the methodological section. It is useful information to the examiners.

We talked about the lack of a PP as being one reason for the difference between the case studies. That is something I'd mentioned a long time ago, years ago. Now, I have evidence of it. That's good. This is exactly the sort of thing that should appear in my axial coding. Axial coding is looking for differences along a range of axes, and reasons why those differences appear. Successful–unsuccessful, long–short, many–few, those sort of axes. Qualitative differences between things. Are there other differences? Even metrics? Axial coding is coding the different outcomes, trying to demonstrate a causal relationship.

(I mentioned that I have many codes for the same sorts of things already. Some of these need to be merged, but in other cases they probably indicate such axial relationships. I will look for them and report by email.)

That (above) is the model Dr Fléchais is looking for. Abstractions, drivers, in terms of *outcomes.*

This is the key point where he and I need to sit down and hash over the model head to head. That phase cannot be done alone. You must show the model to someone else, someone who will push at it and pick at it and suggest new ideas and identify the weak places. We absolutely have to sit down and talk about it, ping ideas off each other.

The structure of the dissertation flow from my findings, not the other way round.

Next, Dr Fléchais asked about my 'P&P' finding. What processes are needed? What work, what don't work? I explained by describing how Lockheed Martin is a very Policy & Procedure driven organisation. In the trenches, individual developers disdain the P&P, saying they are set by corporate higher ups and irrelevant to day to day operations. But what I have found, in my data analysis, is that the company, even to the level of those individual developers, is paralysed without P&P. The R' security evaluation went off the rails because project managers were inexperienced and had no relevant P&P to guide them, so they allowed the software developer to spend too much time trying to build a system to automate the generation of CC evidence, which might have worked, but the project ran out of money and was cancelled. The software developer wasted that time. Certainly, the CCTL didn't help out with its own P&P or process (PPP? P3? P^3?) I don't know if the CCTL had one or not, at the time. Perhaps they do now. I could ask.

The developer, I said, is very P&P oriented. There is a strong culture amongst the software engineers, however, that is dismissive of the importance of P&P. I should make the point to the examiners that there is evidence of a relation here. ISO 9000 demands policies and procedures. Policies are aspirational; procedures document what is actually done. Perhaps the software engineers are dismissive of policies as being irrelevant (at their low level) and procedures as being out of date or incomplete, but that state of affairs is a violation of ISO 9000 principles and should be spotted in periodic audits. Engineers are trained, however, to respond correctly during these audits and to refer to the documented procedures, even though they largely don't really use them.

In the context of an organisation that is dependent on P&P, not having one caused a train wreck. I don't have to prove to the examiners why it happened, only that it did and it is suggestive of a correlation.

(I claimed to Dr Fléchais that 'something' related here was in the literature. What was it?)

So, we have data telling me that a lack of P&P is hazardous. Now look in the data for more evidence of that. Was this a developer, asked Dr Fléchais, who was used to having P&P, and foundered without it, or is it more general? Is this a behaviour characteristic of mature organisations only? Do less mature organisation fall victim to it less often or less severely? Or do they fail and just don't know why they fail, because they're not high enough on the CMMI scale yet?

('That's quite a range, from CMM Level 3 to 5', said Dr Fléchais. I explained that if you ask the executives, they'll claim Level 5, because one division of the company achieved/was acquired with it already, but if you ask the software developers, they'll tell you it's a solid level 3, or maybe a 4.)

Dr Fléchais asked about how I am doing practically, in terms of funding, money, etc. I reported that I have enough funds to continue through summer, but not to October. I will have to get a job at the end of the summer. I finally, I said, have gotten the amount of time extension that I needed in the first place. October, Dr Fléchais said, is a very great amount of time. He thought it was my college, not MPLS, that held up things, only giving one term extension at a time.

We set up the next meeting for same time next week. Send an Exchange invite to Dr Martin at his Kellogg address (done).

Duration of call: 39 minutes, 35 seconds.

TODO: send Dr Fléchais an email with my thoughts on axial coding. Look at different codes for the same thing and see if any of the duplicates can't be merged, but rather indicate an axial (axis of variation) relationship exists.

References