

January 20, 2019  
(December Letter)

Dear Samantha,

I was preparing some census data for analysis and recalled how incredibly different our research is as a result of computer technology development. It's amusing to think back about how it began for me.

My use of computers was the result of a surprising turn of events when Fran, another student, and I decided to conduct a project for one of our 1966-67 UBC sociology graduate classes. We planned to replicate a study on "Rebellion in a High School" that was done in California. We expected that it would be easy to simply redo the study at a school in Vancouver. Our plan was to use the same questionnaire for a class in Templeton High School where our colleague had some contacts.

So we went to visit the Principal with the material we had prepared. We showed him the questionnaire and asked if there was a grade 10 or 11 teacher that would be willing for us distribute it in one of their classes. The Principal was very interested in the study and in the end suggested we distribute it to the whole school.

This was a big shock to us but we couldn't refuse because it was such a tremendous opportunity to go far beyond the kind of data collection that we had in mind.

It meant, however, that instead of preparing about 30 questionnaires, we had to find a way to produce about 2000 of them. Of course, the professor in our UBC course was thrilled with the idea and encouraged us to develop this as much as we could.

The project became a huge undertaking rather than the nice little course project we had envisaged. First, it meant finding a means to print 2000 copies. In those days there were no photocopy machines, so we turned to a Gestetner machine which was the usual duplication method in those days – at least for large numbers of copies (see photo). This machine used special thin paper that was first typed on using a typewriter. The typewriter keys would cut holes in the thin paper that followed the shape of the characters – then the thin paper would be loaded on the machine so that ink on one side of the cut paper would flow to the other side and from there to the paper sheets.

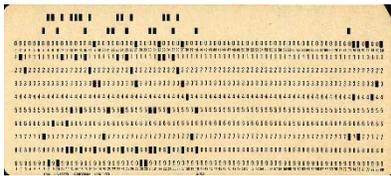


Second came the stapling since each questionnaire was about four or five legal-sized pages in length. Third was the distribution throughout the school – with instructions -- then gathering them all and lugging the many boxes to our place in order to do the analysis.

The analysis was another significant chore since there were no easily-available computers to record or assess the data. For example if we wanted to compare the responses of the boys versus the girls we would go through the 2000 survey forms and sort them into two piles: one for boys and another for girls. Then, if we wanted to see how the boys answered a particular question as opposed to the girls we would have to sort through each pile once again to identify how the boys responded versus the girls. This meant we to sort through the 2000 questionnaires at least twice for each 2 x 2 table and more times for more complex tables. This seemed to be much more than we had bargained for

as a class project. We considered pulling out only the responses for one class, but it seemed a shame to ignore all the other responses in our boxes. I figured there must be a better way.

In a search for a solution, I wandered over to the new computing centre that had just been set up at UBC. They introduced me to the machines and procedures required for such analysis and this set me on the path to computer literacy. The photo on the right gives you an idea of the computer used in those days. It filled up a big room and still had less computing power than we find on many of the smart phones we carry in our pockets. It was also a LOT more difficult to communicate with the machine.



In those days if you wanted to interact with the computer you produced your material on what we called computer cards. These were cardboard cards about 8 inches by about 4 inches. Each card would allow us to enter in information for about 80 different characters by punching rectangular holes in various combinations (see image).

We decided the best way to do our analysis was to put the responses from the various questionnaires onto computer cards and then use those cards to create the statistical tables.



In order to put them on the cards we sat down at a machine with a keyboard and apparatus for managing the cards (see image). The unpunched cards were fed into a hopper at the left-hand side. Each time we pushed the “Return” key on the keyboard a new card would be selected and positioned in the front by the punches. Each time a character key was pushed, the punches would punch the holes in the card – positioning them to represent the character key we pressed. After 80 characters were entered, a new card would be automatically fed into the punching area of the machine.

We still have some of those used cards at home. For years we've use them as note cards or for shopping lists.

Once all of the responses were entered onto computer cards we had a long stack of these cards. Since each questionnaire used more than 80 characters it meant that we had more than 4,000 of them. We would carry these cards around in cardboard boxes like the one in the image on the right.



We were then ready to do the analysis, but at first were not able to use the computer. Instead, we used a “counter-sorter” machine that would speed up the job of sorting and counting the number of cards according to their punches.

I'll continue with this story in my next letter.