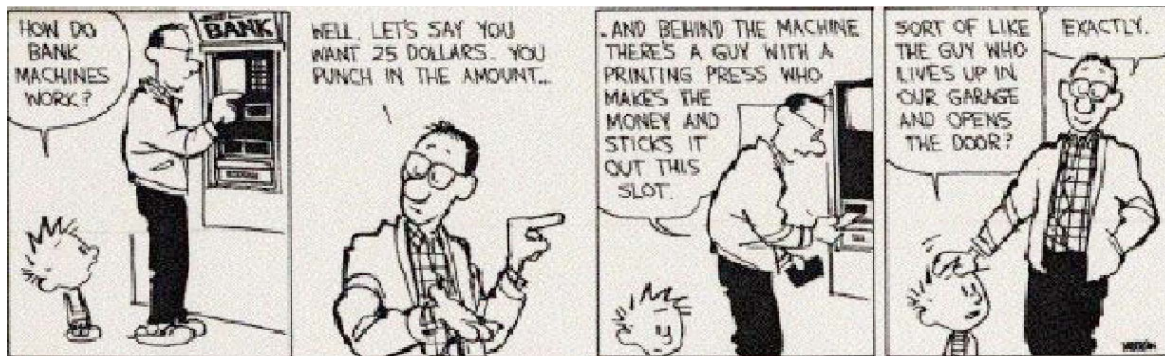


## ATM mental models



Write down how you think an ATM works and then answer the following questions:

- How much money are you allowed to take out?
- What denominations?
- If you went to another machine and tried the same what would happen?
- What information is on the strip on your card? How is this used?
- What happens if you enter the wrong number?
- Why are there pauses between the steps of a transaction?
- What happens if you try to type during them?
- Why does the card stay inside the machine?
- Do you count the money? Why?

Next, compare your answers with those of the other members of your group. Did you get the same or different explanations?

Are any interface features revealed as being particularly problematic? Do these suggest any design recommendations?

*When doing this exercise you will probably be surprised at just how little you know about how ATMs work (unless you have worked in a bank). A main reason being that, as far as you are concerned, an ATM is there to serve you efficiently and effectively. You just need to know how to operate it. It is only when unexpected things happen (e.g. it does not give you any money, it says you are overdrawn when you are not, it gives you more money than you asked for) that you may start to wonder how an ATM system works.*

*Some of the questions are difficult to answer. For example, what information is on your card? All you can see is a magnetic strip on the back of the card. You have never been told what is written on it. You have to infer from your knowledge of banking what might be on it. This is likely to include your pin number, your account number and your limit. But what else?*

*Most of us are unlikely to have thought much about many of the questions. So we make inferences on the spot from our limited knowledge about such systems. This is what we mean by ad hoc reasoning. We also will commonly use analogies, e.g. 'well it is like a debit card', in an attempt to explain. Some of these maybe appropriate and others not.*

*What did you find when you asked other people? You may have discovered that their explanations were quite different. It is quite common for there to be variability between people's explanations of the same system. Also did you find that people used incorrect analogies, superstition and bizarre models to explain their understanding? People can be quite creative when forced to provide explanations when they have no idea!*

*Another issue that is important to think about is whether you really are eliciting a person's mental model, when asking such questions. How do you know what they say reflects the knowledge they use when interacting with a device? This question has taxed researchers for many years and there is a whole literature on how to elicit mental models and how to determine whether they are really the knowledge representations people use in their activities.*