

CSC 428F/2514F

## HUMAN-COMPUTER INTERACTION

Lecture 20  
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### HOW TO SOLVE HCI QUESTIONS

presented by  
Ben Barkow

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Ronald Baecker  
Professor of Computer Science  
University of Toronto

## TODAY YOU ARE CAPTAIN USABILITY

We are going to examine four representative questions (really *families* of questions) which might come up in the course of your work as an HCI specialist.

For each...

1. What is the question as *understood by the client* (at least, after you have chewed it over with them)?
2. What is the question as expressed in *researchable* terms?
3. What sort of sentences or charts would you like to utter when you are all done? That is, how would you characterize your ideal practical findings? To what “audience?”
4. What should we do to enable us to utter these sentences? Where does that fit into the McGrath 6-way framework? Who will be tested? What procedures? What pitfalls to avoid?
5. How big an “effect” do you suppose will be apparent from this research and how big a sample will be needed in order to feel comfortable in reporting this size of effect to your audience?

## MARKET AND FUNCTIONAL SPEC QUESTION

Time to de-featurize our OverGrown Word Processor?

You are helping a major publisher do some soul-searching about their flagship word-processor. It is the all-singing all-dancing model, now ready for a revision. The publisher finds that (1) not only are many users unable to access many features, but that (2) they fear they are missing out on something important that they don't know how to access.

What to do?

Take away features? Improve the interface? Provide a tutorial starring Butthead and Beavis? Add more features but provide a novice mode... or even a second mini-feature word-processor?

What information will illuminate the path for this decision?

## **ENGINEERING PSYCHOLOGY QUESTION**

### **The money machine on the sunny beach**

**The Big Blue Bank of Barrie wants to install an Automatic Teller Machine (ATM) on a lovely beach on Lake Simcoe. But some days it is just so sunny, nobody can read the screen.**

**What to do? How to research this problem?**

## PERCEPTUAL INTERFACE QUESTION

### Errors in overnight electronic funds transfer

You couldn't believe how much cash gets lost each night while you sleep! As you peacefully slumber, clerks in the basements of banks around the world are moving money to one another; this is called Electronic Funds Transfer (EFT). Sometimes they work from paper forms and sometimes from cheques or credit card slips.

The money doesn't get "lost" for long but even the cost of temporarily losing this error-tide is quite substantial. So substantial that it would repay your bank-client to make things better just at their EFT centre.

How to reduce the size of this misdirected bundle?

## RESPONSE QUESTION

### Smart Card pocket reader: security issues

Same old question: what is a good security regime and PIN approach? But here we are interacting with in a device the size of a pocket calculator which you drag about to all environments, at all times of day, and in all mental states. What should be done by the international standardization conglomerate who hired you?

You will be using this device to mediate security. For example, you stick your Smart Card into the device, interact with it using your PIN and whatever other buttons, and your card becomes “unlocked” and ready for use.

How to establish a systems deemed trustworthy (and *whose* standard of trustworthiness)? How can we establish what kind of procedure works well? Punch in numbers or two-longs-and-a-short? Press the unmarked spot in the corner for 8.3 seconds? Will it work in the dark? At the head of a long queue of shoppers? When you need to write your 8 digit code on the back of the device?