

CS 444: advanced methods for
human-computer interaction

field studies - II

class 03

administrivia

MSI due now!

MSII posted by mid week

- will announce when on VISTA
- we will go over it briefly during lab this week (Fri)
- you must read it in advance

Project selection and team formation will be
done in lab – critical that you be there!

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today

two field work examples from the literature

use two different lecture approaches

1. classic field study: “How do People Organize
Their Desks?” (field I tutorial)

- class discussion

2. field experiment: “An Evaluation of a Multiple
Interface Design Solution to Bloated Software”

- coverage of salient aspects of paper
- class discussion

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learning objectives

be familiar with one field study and one field
experiment, and be able to describe their
methodologies and findings

be able to describe a field experiment and be
able to compare it to both a lab experiment and
a more classic field study

know how to critique the strengths and
weaknesses of a specific field study/experiment
reported in the literature

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1. classic field study: "How do People Organize Their Desks?"

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discussion:

how do people organize their desks?

- what is the goal of this research?
- what is a possible focal point for this research?
- what sampling method was used?
- what is *exploratory observation*?
- what *individual differences* in organization were seen?
- what conclusions could be drawn about people with messy offices?
- can we reliably conclude that it is better to have a neat office?

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- how do *files* differ from *piles*?
- how does this relate to *finding* and *reminding*?
- what cognitive difficulties in classifying information were discovered?
- how are files and piles consistent/inconsistent with computer file management?
- how can computer file management better support finding? reminding?

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critique

how convinced/confident are you by this study and its conclusions?

- what aspects of the study and its write-up boosts your confidence?
- what aspects diminish your confidence?

did the author achieve his research goal?

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note the key structure/elements in a field study paper

- description of respondents
- description of methods use (including interview questions)
- case study approach (“Two Examples”)
- use of respondent quotes
- analysis
- implications for design

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Critique the interview questions:

1. How well organized would you say your office is on a scale from 1 to 5?
2. What would you say are the biggest problems you have with the way your office is organized?
3. Do you keep lists of things to do?
4. Do you keep a calendar of appointments?
5. How often are you unable to find something you are looking for in your office?
6. How often do you forget to do something you were supposed to do?

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2. field experiment: “An Evaluation of a Multiple Interface Design Solution to Bloated Software”

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field experiment defined

a study that is run in context (in the field) where at least one factor is manipulated (i.e., an independent variable) and at least one outcome is measured (i.e., a dependent variable)

thus, has all the elements of a lab experiment (e.g., hypothesis testing), except it is conducted in the field

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pros/cons of field experiments in HCI

relative to lab experiments...

pros:

cons:

for these reasons, field experiments are **relatively rare**

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timing of field experiments in HCI

“regular” field studies are most often used for **formative evaluation** (i.e., pre-design)

field experiments are almost always used for **summative evaluation**

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famous non-HCI field experiments

Hawthorne experiments:

- a series of experiments conducted at the Hawthorne Works factory in 1920s
- purpose: to find the optimum level of lighting for productivity
- essence of findings: regardless of change in lighting, productivity increased

the **Hawthorne effect**: phenomenon that when people are observed in a study, their behavior or performance temporarily changes (http://en.wikipedia.org/wiki/Hawthorne_effect)

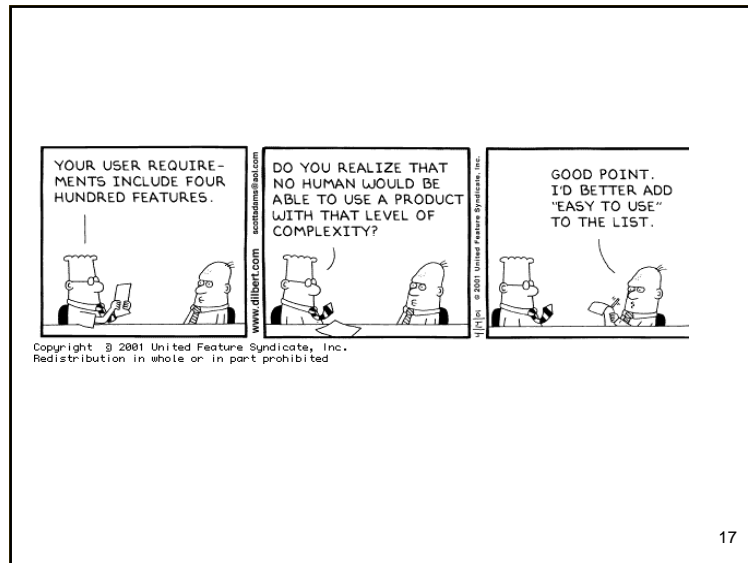
what is the relationship between the IV and DV when the Hawthorne effect is at play?

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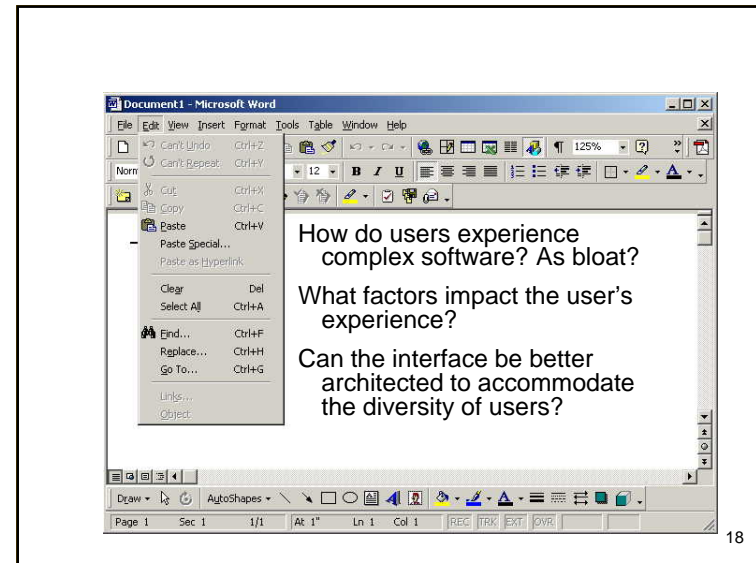
paper:

McGrenere, J., Baecker, R.M., and Booth, K.S. (2002). An evaluation of a multiple interface design solution for bloated software. *Proceedings of ACM CHI 2002*, 163-170.

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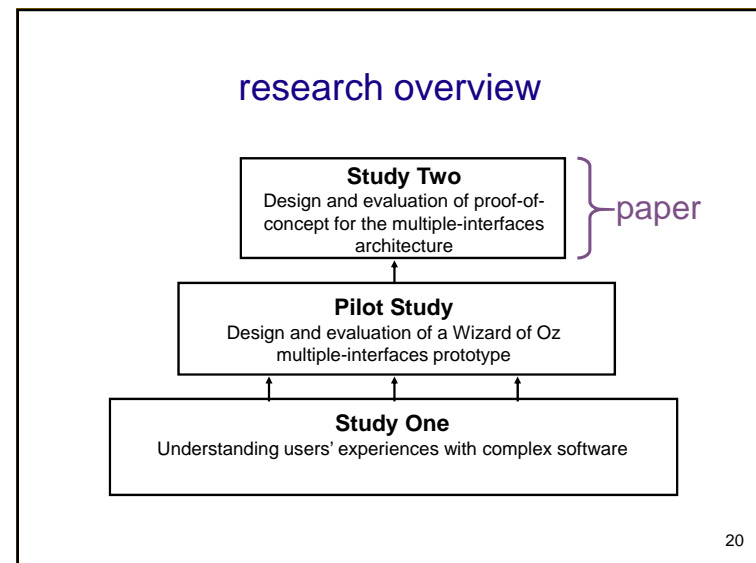
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design solutions (background)

- Level-structured approach – two or more *levels*, each with a pre-determined features set
- Intelligent user interfaces, e.g., adaptive interface of MSOffice 2000 ([Aside...](#))
- Customization facilities (adaptable interfaces)

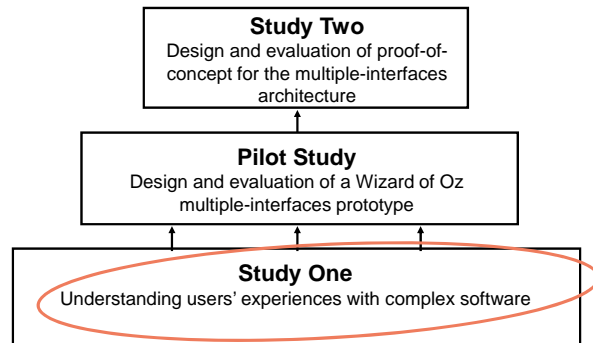
Adaptable UI ← user control → Adaptive UI

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research overview



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study one

53 representative participants

~50% would like to have unused functionality tucked away but not removed entirely

users do not use the same functions and have different tolerance levels for unused functions

feature-keen, feature-neutral, feature-shy

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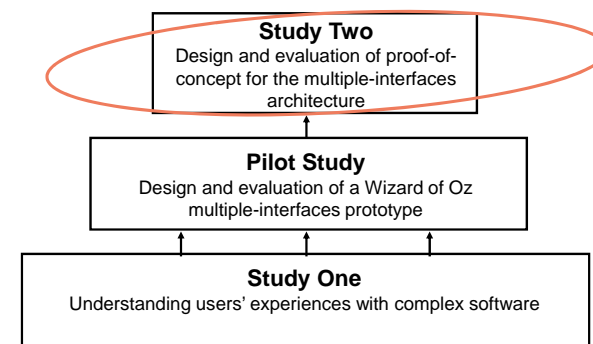
study one – design directions

from: enabling the customization of “one-size-fits-all” interfaces

to: supporting the creation of personal interfaces, multiple interfaces

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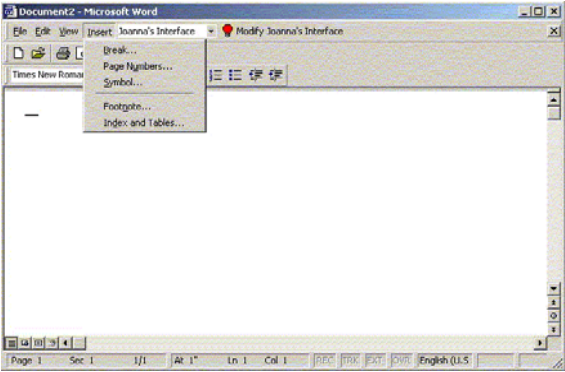
research overview



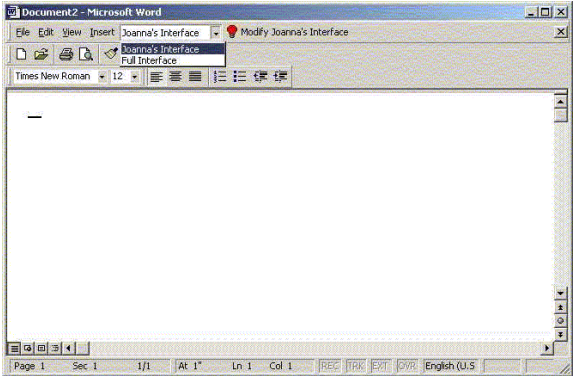
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prototype

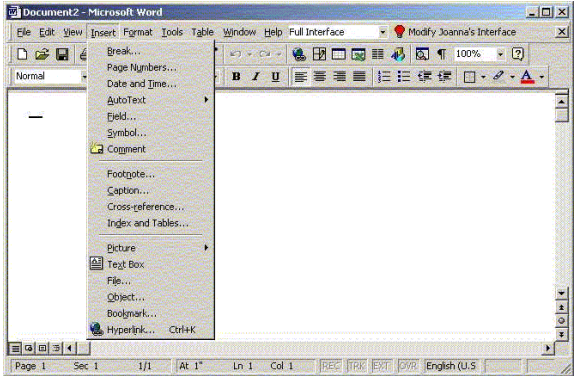
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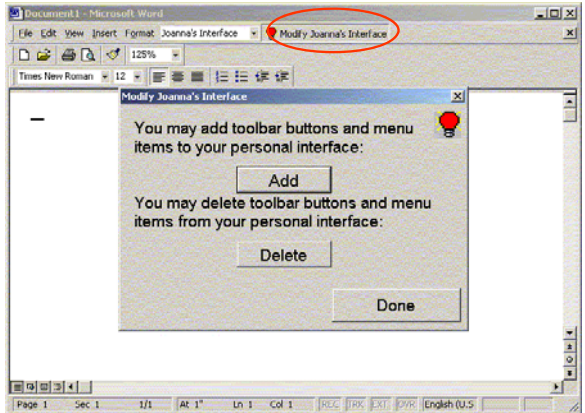
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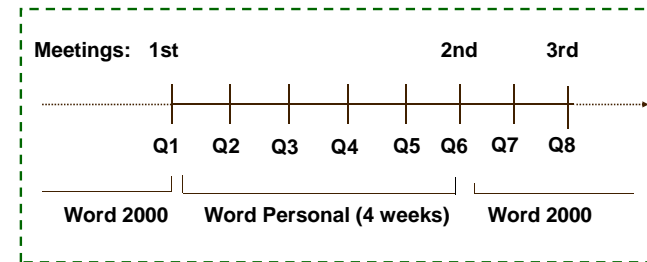
evaluation goals

1. capture users' experiences with the novel aspects of our design
2. compare our design to adaptive interface

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field experiment: evaluation protocol

participants: 10 feature-keen
10 feature-shy



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The screenshot shows a web browser window displaying 'Joanna M.'s Personal Page'. The page includes a URL, general information, and a participation timeline table. The table lists scheduled and actual dates for meetings and questionnaires, along with points earned.

	Scheduled	Actual	Points*
First Meeting			
Installation of Microsoft Word Personal	Mon Apr 16	Mon Apr 16	--
Questionnaire #1			
(done during First Meeting)	Mon Apr 16	Mon Apr 16	1
Questionnaire #2			
To be done first day that you use MSWord Personal	by Wed Apr 18	Tues Apr 17	1
Questionnaire #3	Mon Apr 23	Mon Apr 23	1
Questionnaire #4	Mon Apr 30		
Questionnaire #5	Mon May 7		
Questionnaire #6			
To be done before Second Meeting	Mon May 14		
Second Meeting			
To be held 4 weeks from First Meeting	Mon May 14		--

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hypotheses

- H1 Usage:** majority of the participants will choose to use their personal interface
- H2 Satisfaction:** feature-shy will be more satisfied with MSWord Personal
- H3 Navigation:** feature-shy and feature-keen will feel that they are better able to navigate
- H4 Control:** feature-shy and feature-keen will feel a better sense of control
- H5 Learnability:** feature-shy will feel that they are better able to learn the available features

Which predict(s) an interaction effect? [revisit after experiments lectures]

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independent & dependent variables

what are the 2 independent variables?

what are the 5 main dependent variables?

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study design

2 personality types (BS)
 x 3 system levels (levels 1,3 = MSWord 2000,
 level 2 = MSWord Personal, WS)

where level 2 is nested with 5 repetitions

is a **quasi-experimental design**, why?

this will all make *much* more sense after the
 experiments lectures: make sure to revisit

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key findings – goal #1

majority had positive experience

majority spent $\geq 50\%$ time in PI

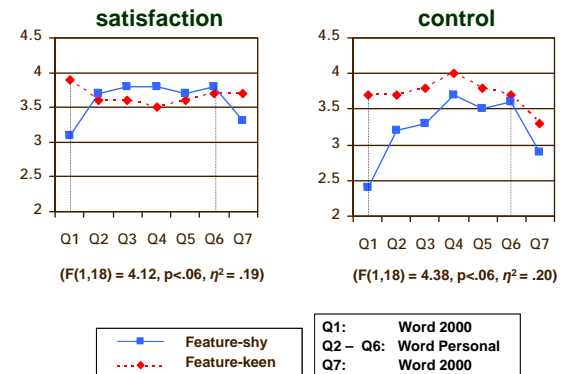
90%+ of the functions used $\geq 25\%$ of the time
 were added to PI

no dominant approach to personalization

no substantial differences between feature-keen
 and feature-shy

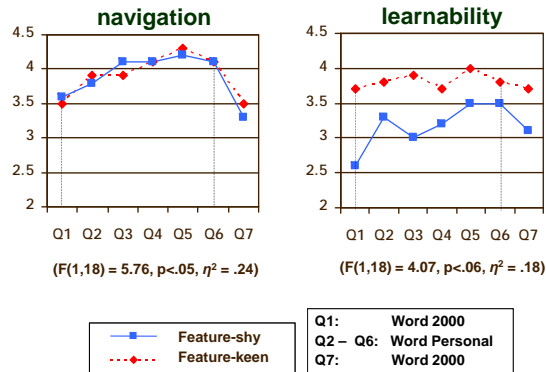
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key findings – goal #2



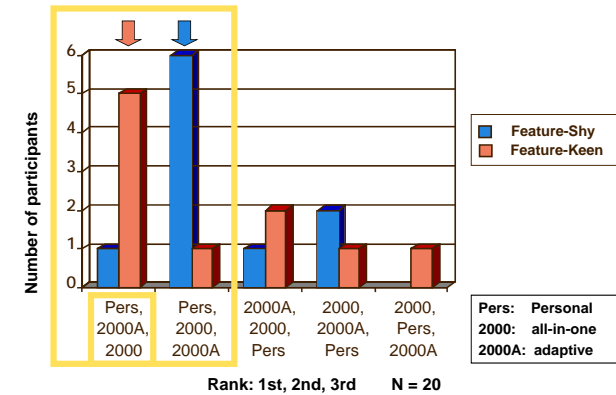
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key findings – goal #2 (cont'd)



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key findings – goal #2



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hypotheses

- H1 **Usage:** majority of the participants will choose to use their personal interface ✓
- H2 **Satisfaction:** feature-shy will be more satisfied with MSWord Personal ✓
- H3 **Navigation:** feature-shy and feature-keen will feel that they are be better able to navigate ✓
- H4 **Control:** feature-shy and feature-keen will feel a better sense of control ✓ X
- H5 **Learnability:** feature-shy will feel that they are better able to learn the available features ✓

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critique

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do the authors achieve their research goals?

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now you...

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are able to generally describe what a field experiment is and are able to compare it to both a lab experiment and a more classic field study

know how to critique the strengths and weaknesses of a specific field study/experiment reported in the literature

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on deck + next time

field studies II tutorial on Wed

extra computers needed

MSII out this week

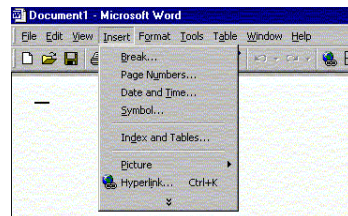
team formation in lab on Fri

next lecture: motor processing

bring copy of reading (as always)

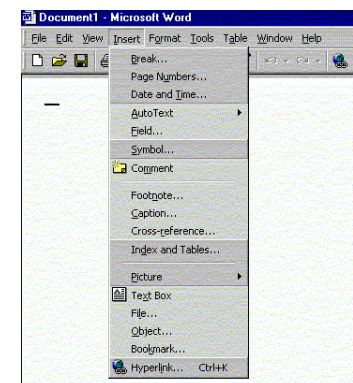
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“Short” Insert Menu



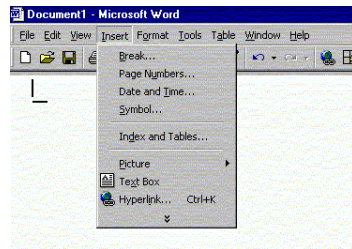
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“Long” Insert Menu



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Updated "Short" Insert Menu



...end of Aside