Diary Studies

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CS-570 Introduction to Human-computer Interaction

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From Last Week

How do you select the best measure for your task?

Can't you just refine parameters to make it seem like you saw a significant change?

Will this always work even if you have a limited audience to analyze?

When are z-tests applicable?

What are p values?

More From Last Week

What kind of variability can exist in these measures and how do you control for it?

Physiological measures in projects?

Practice problems on the website by Thu.

Project overview on Friday

Diary Studies

Looking Back At CI

What are some requirements for a CI?

Direct observation

You need access to the user's context

We used think-alouds to prompt users to talk in a CI, if we are not with the user, how do we prompt them?

Diaries!

The Goal

Asking people to observe and report their own actions. Providing people with multiple ways of capturing data.

Example Situations

Privacy-sensitive tasks

(e.g., finances, health, weight loss)

Spontaneous tasks

(e.g., incoming communication)

Mobile situations

(e.g., interface use on the move)

Restricted access situations

(e.g., law enforcement)

Tasks with high sampling rate

(e.g., changes throughout the day)

Four Key Methods

Diary studies (Alaszewski, 2006)

Cultural probes (Gaver et al., 2004)

Experience sampling (Hecktner et al., 2006)

Day reconstruction method (Kahneman et al., 2004)

Diaries

A diary is a document created by an individual who maintains regular recordings about events in their life at the time that those events occur

Diaries can be in many forms

Physical diaries

Digital diaries

Shared/public diaries (e.g., Facebook, Twitter)

Time Diaries

Focuses on how individuals utilize their time in different activities

Different from a general diary in that it has a time focus and temporal regularity

Recording is tied to time or events:

Individuals record entries on a regular basis

When events occur, noting time

Or both

Feedback Diary

Focus on the events that interest the researcher

Users record data when events occur or when thresholds are met

More accurate and objective

Elicitation Diary

Focus on events that are meaningful to the user

Users reflect on what happened in a later interview

More representative of users' feelings

Diary Examples

Diary Examples

Nielsen diary

Other Types of Diaries

Unstructured diaries

Structure diaries

Survey-structured diaries

Usability test diaries

Problem report diaries

Questions?

Cultural Probes

Cultural Probes

First used by Gaver et al.

A way of capturing information in context

Capture experience as it takes place in its natural setting

Capture repeated experiences

Can be used as

Design inspiration

Qualitative research

When to Use Cultural Probes

When you're exploring ideas!

Also, when your users are:

On the move

Experiencing events intermittently

In unpredictable environments

In restricted-access environments

Not comfortable with your observing them

Open to too much influence

Example Situations

Capture patients' recovery experience over time

Study a traveling film crew

Changes in music preferences of runners

How nurses respond to emergency calls

Understand people's mobile phone use!

Process

Recruit a small number of participants

Hold face-to-face briefings, introduce the probe, explain project goals and required probe tasks

Participants carry out probe tasks over a specific period of time (usually a week to 3 months)

Conduct intermediary interviews to check-in, verify the quality of the data

Receive probes either by mail or during a final interview

Creating the Probes

Identify the kind of information you need and what people might be familiar and comfortable with

Be innovative—anything can be used as a probe

Giving participants choice of how to record their thoughts and feelings is a good thing—combine multiple methods

Things to Watch For

Recruitment is extremely important

You can't monitor participants closely

Follow-up interviews are crucial

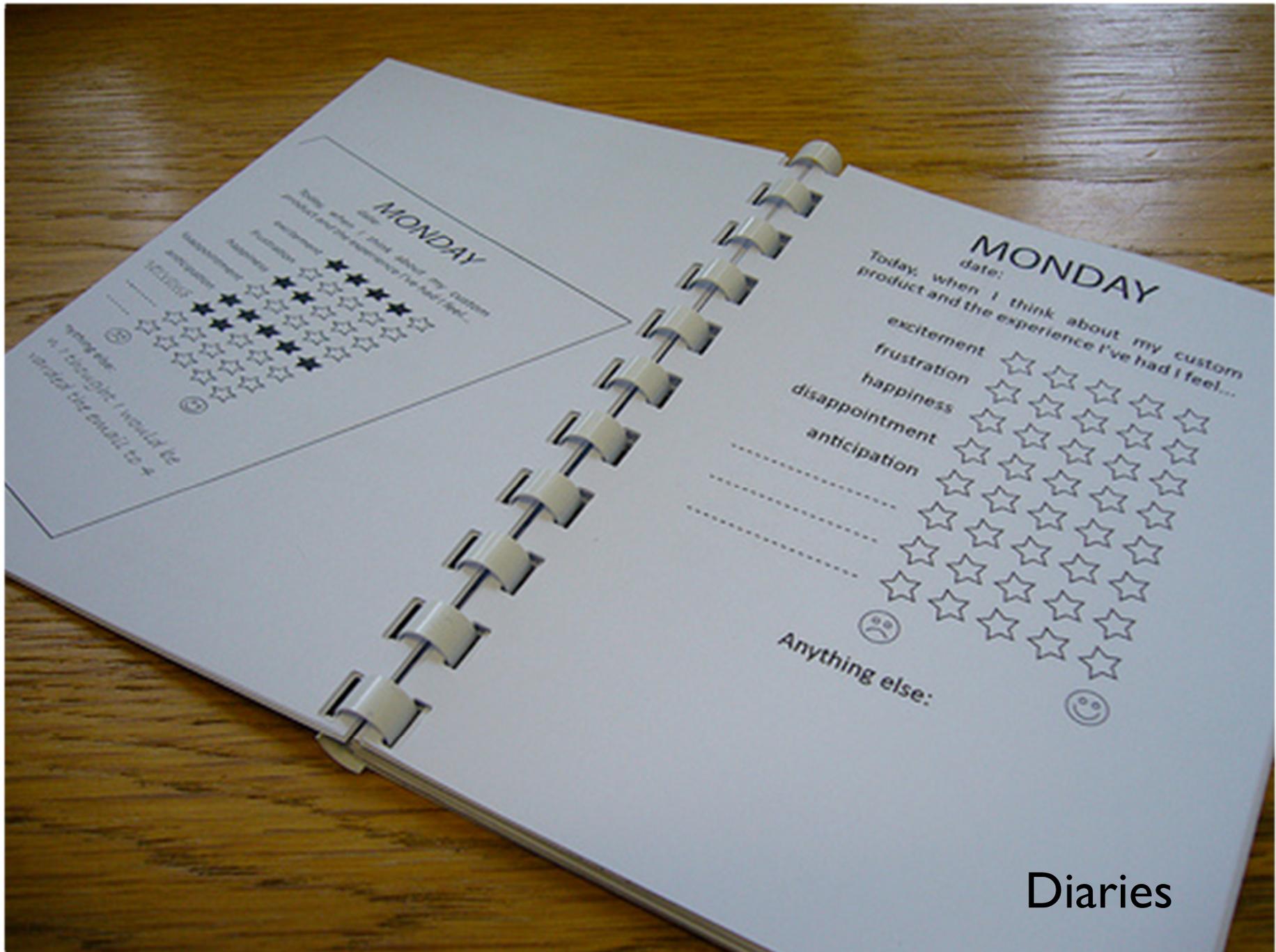Open-ended questions are most informative

Clarify how experiences unfolded

Users can be shy

Find ways to put them at ease

Example Probes:

Anything can be a probe!

Diaries

Disposable camera with instructions

Listening glass

Probe packages

Cheap digital voice recorders

To Do Lists

Postcards

Timely instructions
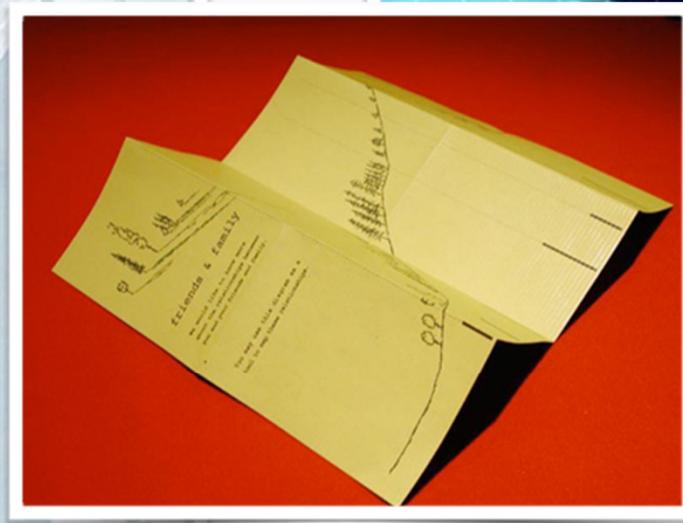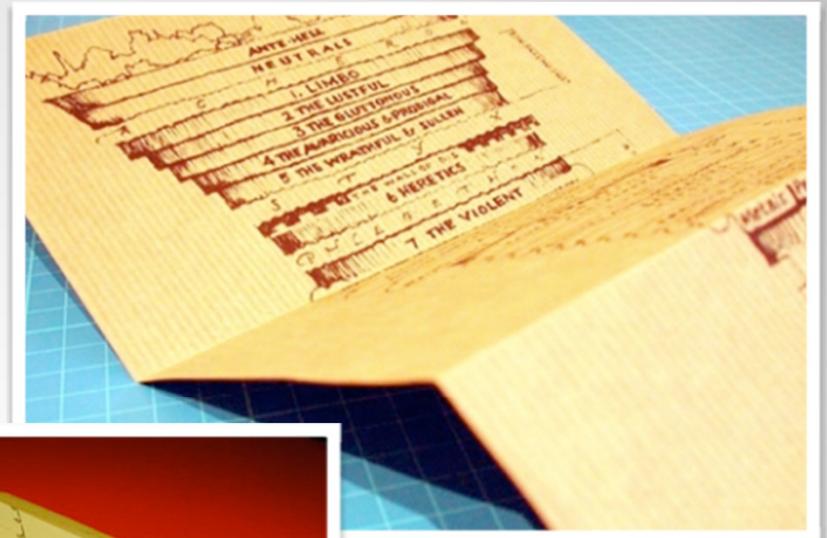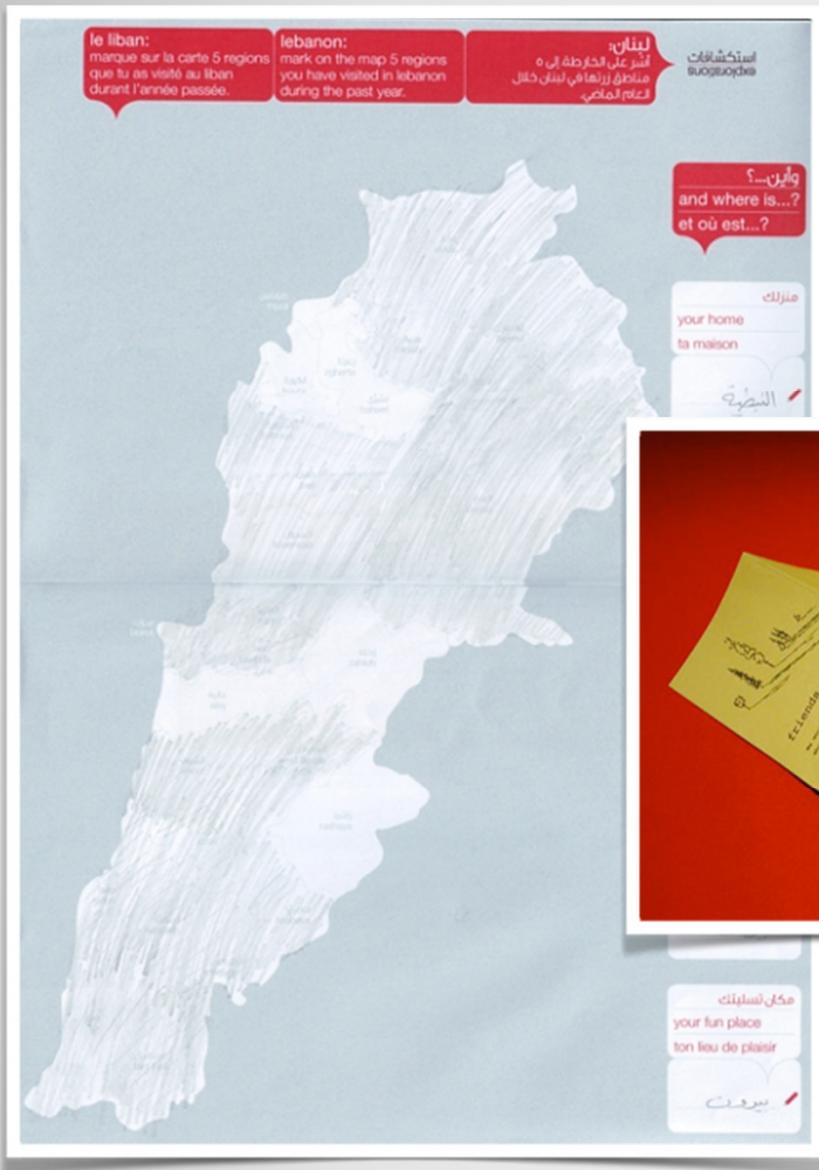
Physical or social maps
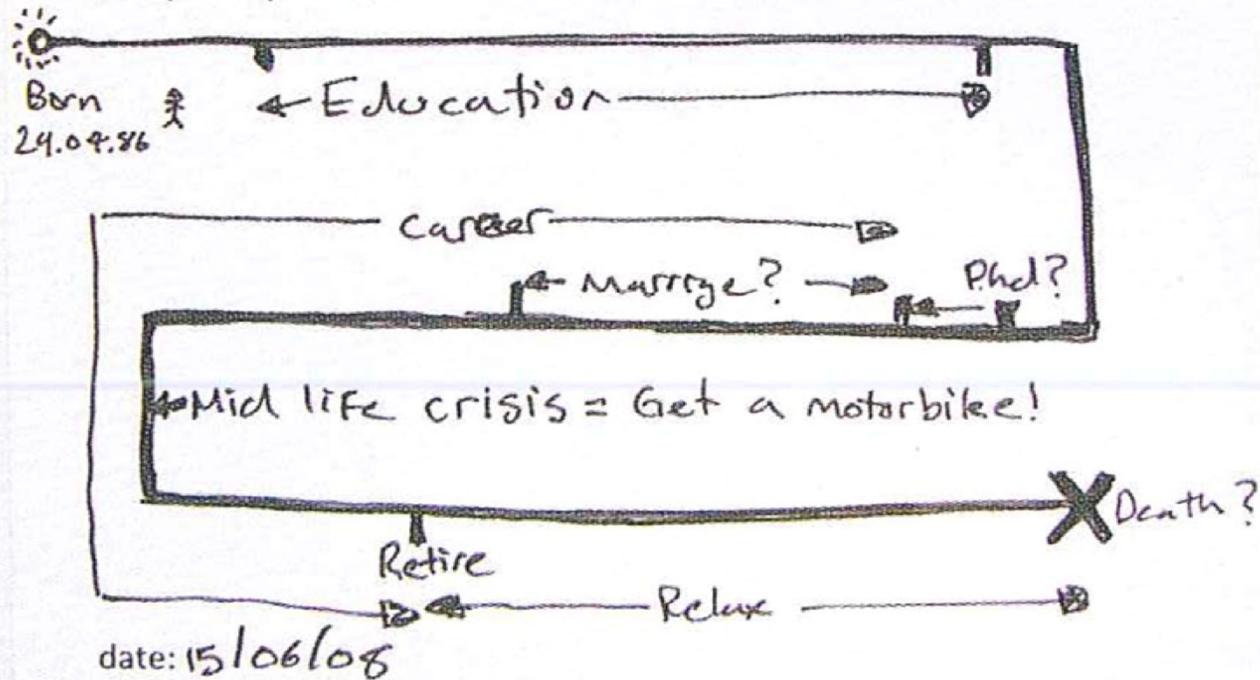
Time maps

Conversation Kits

Probe packages

Probe packages

Probe packages

Text messaging

Tweeting and blogging

Questions?

Experience Sampling

Allows the designer to collect snapshots of behaviors, interactions, thoughts, or feelings

Self-reported data in real time at random/limited intervals

Involves substantial number of measurements

Data captured in situ – in context and in the moment of the experience

Developed in the 80s to study happiness

Also called ecological momentary assessment (EMA)

A "beeper study"

"Document your feelings right now."

"List the communication products you are currently using."

Barrett & Barrett developed an Experience Sampling Program (ESP) that used Palm Pilots

Automatic vs. manual mode

ESM Examples

ESM Example
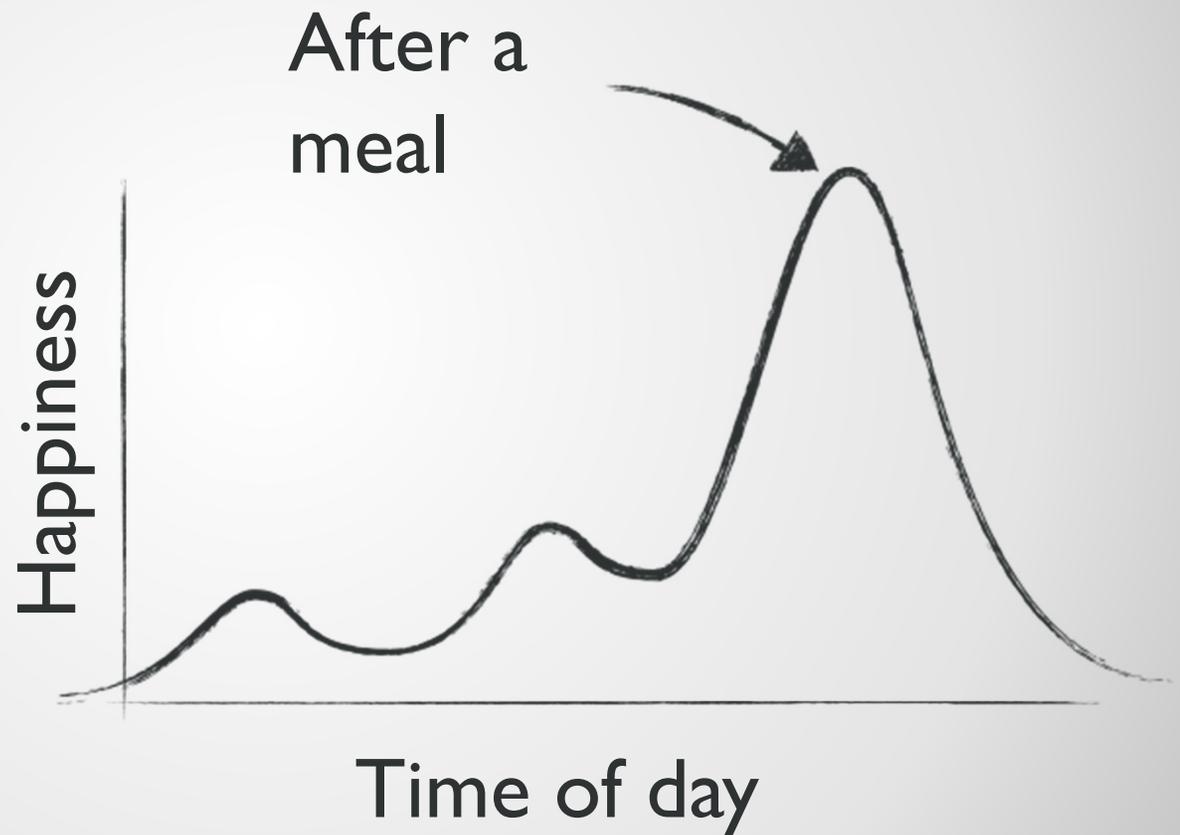
Questions?

Day Reconstruction

"...assesses how people spend their time and how they experience the various activities and settings of their lives, combining features of time-budget measurement and experience sampling"

—Kahneman et al.

DRM Process

Respondents revive memories of the previous day by constructing a diary of a sequence of "episodes"

They describe each episode by answering questions about the situation and their feelings

The goal is to provide an accurate picture of the experience associated with activities and circumstances

Pros and Cons of DRM

Seeks to reduce errors and biases of recall by eliciting specific and recent (day-old) memories

Overall more efficient than ESM

Imposes less respondent burden

Doesn't disrupt normal activities

Provides an assessment of contiguous episodes rather than sampling of moments

Provides time-budget information not collected in ESM

Affect by Situation

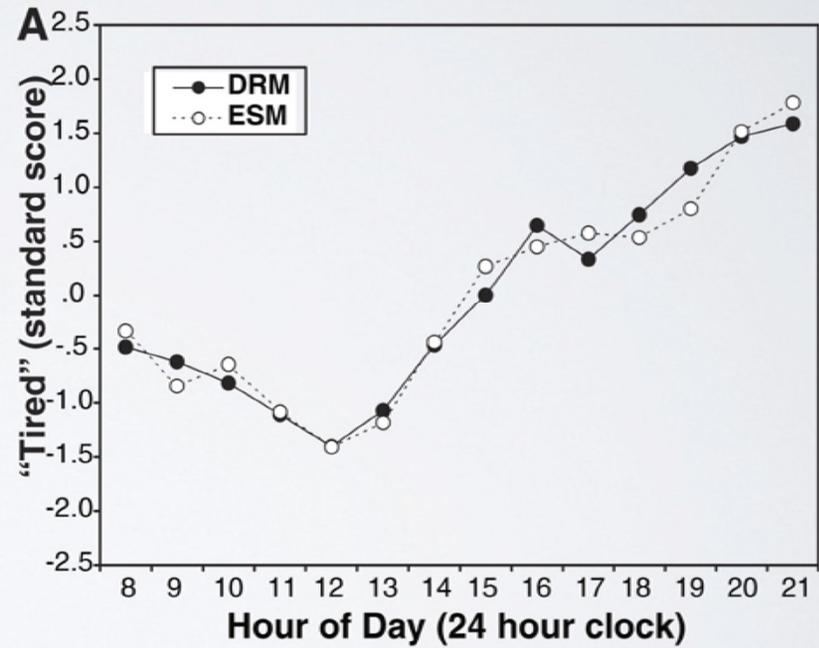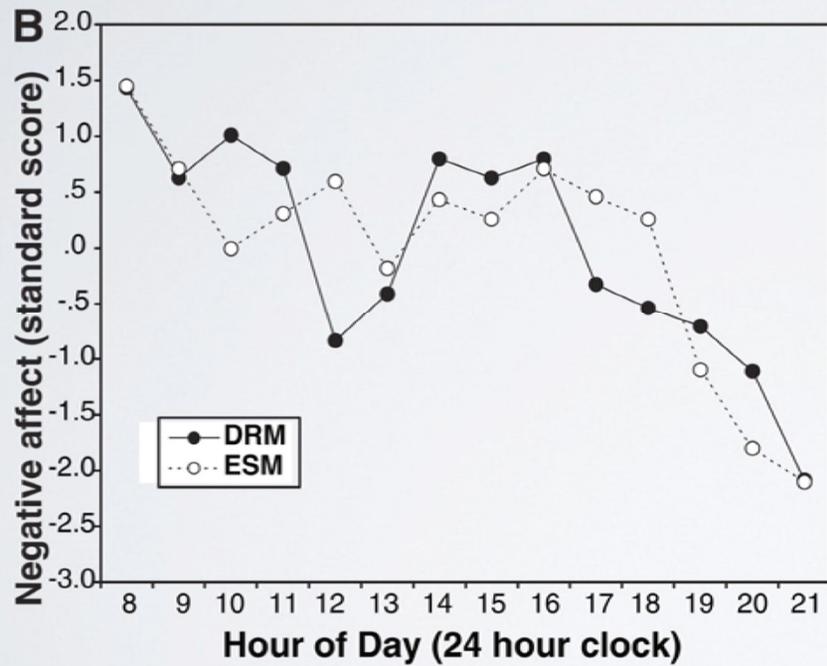|	Mean affect rating					Mean hours/ day	Proportion of sample reporting
	Positive	Negative	Competent	Impatient	Tired		
Activities							
Intimate relations	5.10	0.36	4.57	0.74	3.09	0.2	0.11
Socializing	4.59	0.57	4.32	1.20	2.33	2.3	0.65
Relaxing	4.42	0.51	4.05	0.84	3.44	2.2	0.77
Pray/worship/meditate	4.35	0.59	4.45	1.04	2.95	0.4	0.23
Eating	4.34	0.59	4.12	0.95	2.55	2.2	0.94
Exercising	4.31	0.50	4.26	1.58	2.42	0.2	0.16
Watching TV	4.19	0.58	3.95	1.02	3.54	2.2	0.75
Shopping	3.95	0.74	4.26	2.08	2.66	0.4	0.30
Preparing food	3.93	0.69	4.20	1.54	3.11	1.1	0.62
On the phone	3.92	0.85	4.35	1.92	2.92	2.5	0.61
Napping	3.87	0.60	3.26	0.91	4.30	0.9	0.43
Taking care of my children	3.86	0.91	4.19	1.95	3.56	1.1	0.36
Computer/e-mail/Internet	3.81	0.80	4.57	1.93	2.62	1.9	0.47
Housework	3.73	0.77	4.23	2.11	3.40	1.1	0.49
Working	3.62	0.97	4.45	2.70	2.42	6.9	1.00
Commuting	3.45	0.89	4.09	2.60	2.75	1.6	0.87
Interaction partners							
Friends	4.36	0.67	4.37	1.61	2.59	2.6	0.65
Relatives	4.17	0.80	4.17	1.70	3.06	1.0	0.38
Spouse/SO	4.11	0.79	4.10	1.53	3.46	2.7	0.62
Children	4.04	0.75	4.13	1.65	3.40	2.3	0.53
Clients/customers	3.79	0.95	4.65	2.59	2.33	4.5	0.74
Co-workers	3.76	0.92	4.43	2.44	2.35	5.7	0.93
Boss	3.52	1.09	4.48	2.82	2.44	2.4	0.52
Alone	3.41	0.69	3.76	1.73	3.12	3.4	0.90
Duration-weighted mean	3.89	0.84	4.31	2.09	2.90		
% time > 0	97%	66%	90%	59%	76%		

Enjoyment
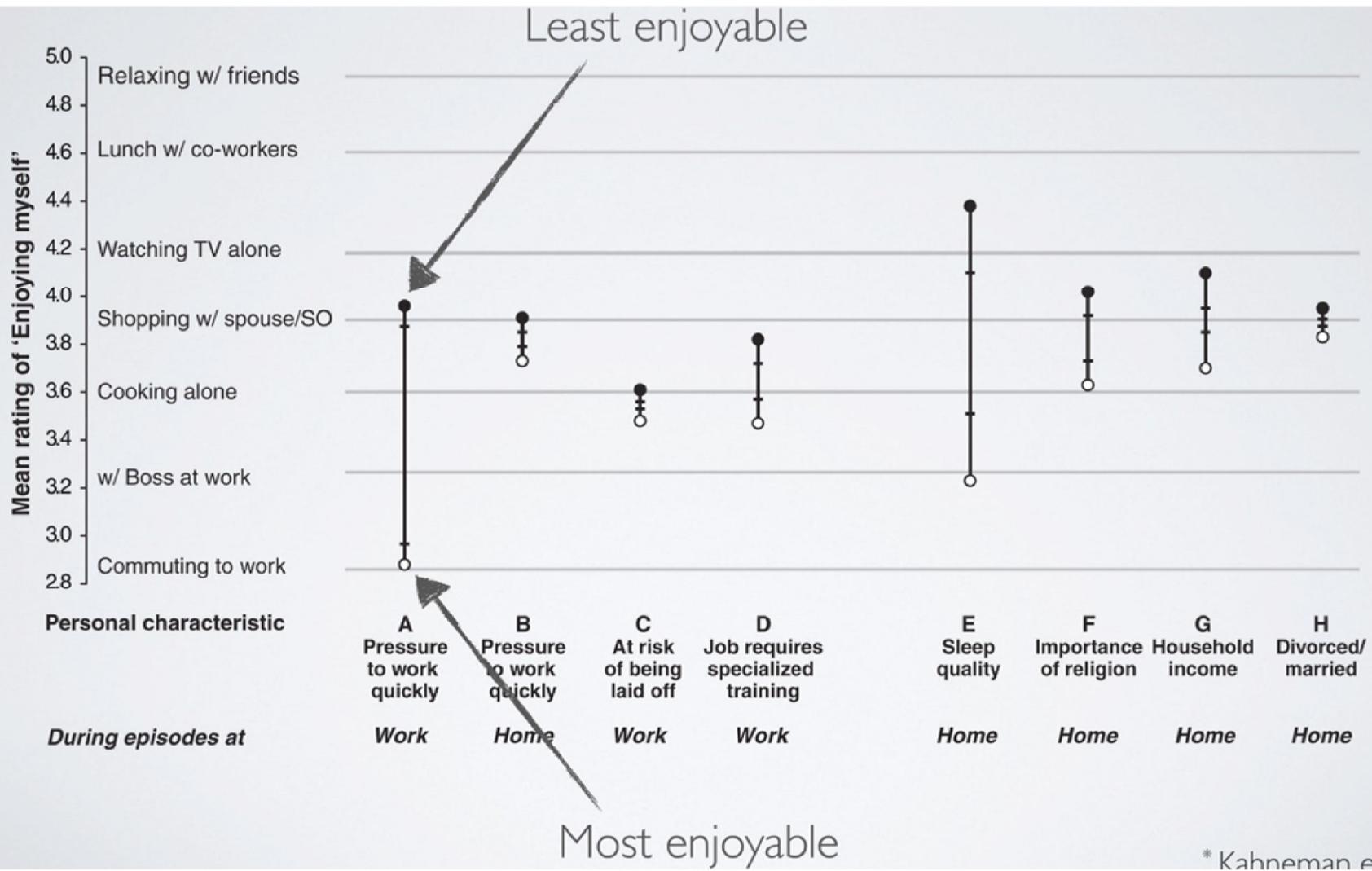
Diurnal Patterns
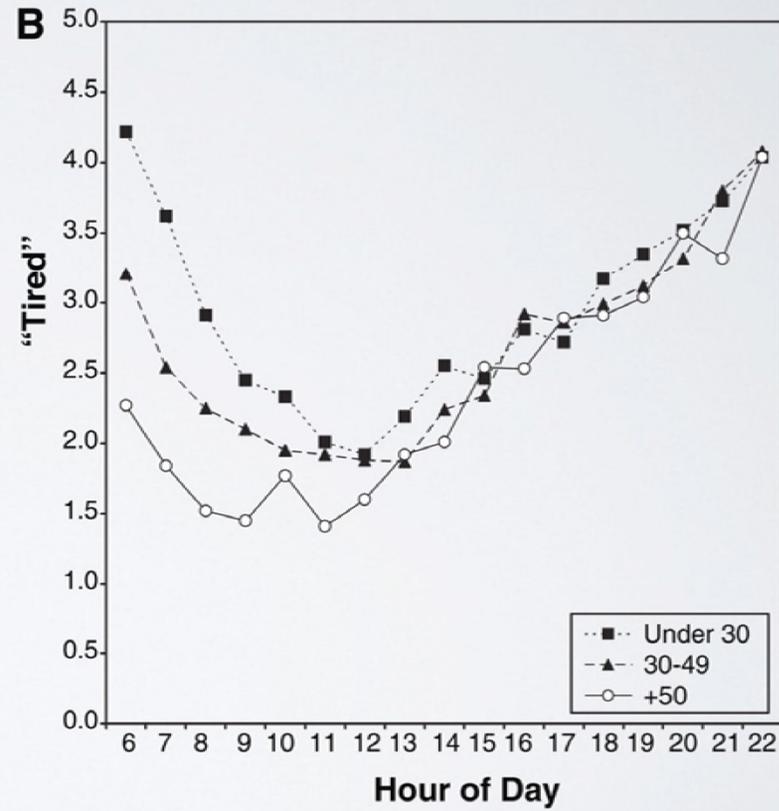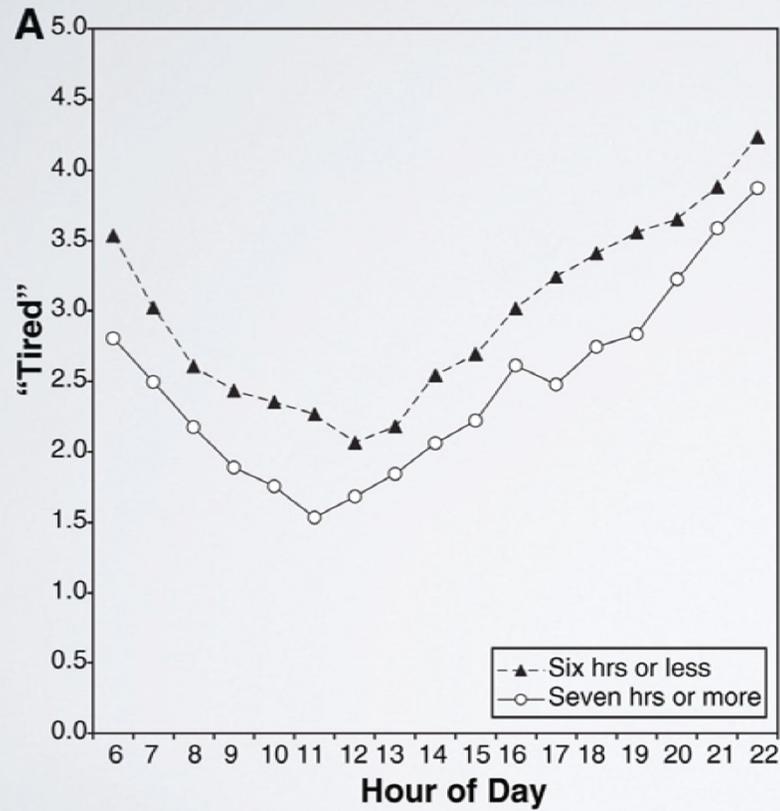
* Kahneman et al.

Comparison With ESM

Questions?