



Process Tracing with MouselabWEB

Handson experience!

Martijn Willemsen

Michael Schulte-Mecklenbeck

TU / **e**

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

Mouselab process tracing

early computerized information boards: Mouselab for DOS

(80's and 90's)

	Cost	Size	Neighborhood
House A			
House B			Suburbs
House C			

Which house would you buy?

Choose one: House A House B House C

House B was chosen. Enter this box and click once to continue.

MouselabWEB

www.mouselabweb.org

(since 2004)

Online tool with much flexibility

	Amount to Win	Probability of that amount	Amount to Win	Probability of that amount
Gamble A:	W_a^1	P_a^1	\$4000	P_a^2
Gamble B:	W_b^1	P_b^1	W_b^2	P_b^2

I choose Gamble A I choose Gamble B

Design: MouselabWEB

Goal: perform Mouselab-like process tracing experiments on the web (and in the lab)

Approach: simple HTML/javascript available in recent browsers (works in 99% of browsers)

- Operating System Independent
- No network delays: (Client-side, 1/60th second precision)
- Fast and Easy: No plug-ins, small pages
- No hassle server-side scripting (php/mysql)
- Easily extended: Open source (GNU license)

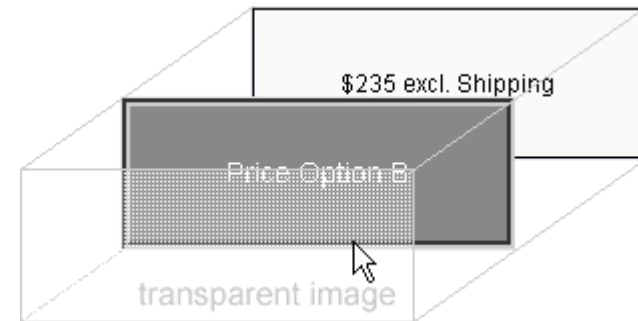
-Drawbacks:

- Some coding you have to do yourself...

How does it work?

Transparent image captures mouseovers which unhides the information

Event get recorded via javascript into a process data field



Other form data (i.e. scales) is also recorded

Without having to predefine these variables in the database!

Every page links to another page and data is saved in between (using PHP)

Datalyser can extract the data without hassle

Features of MouselabWEB

<http://www.mouselabweb.org/>

Designer program to design pages with mouselabWEB and other questions

Datalyser program to retrieve and replay a movie of the process data

Web-based means:

- Large numbers of respondents

- A lot of heterogeneity in participants (not quite the average 20 year old student lab participant)

- Specificity of respondents: targeting specific groups

Handson workshop today

We have a mouselabWEB installation ready:

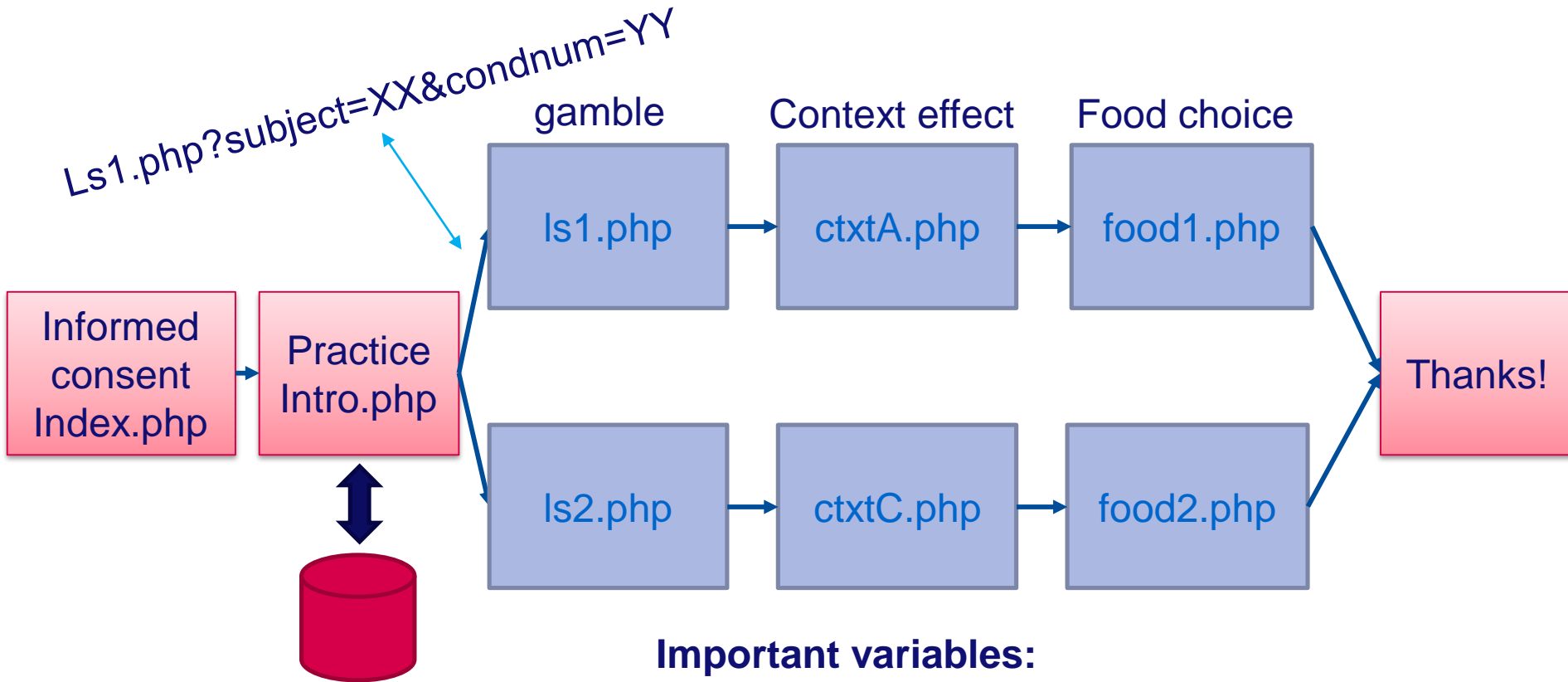
<http://summerschool.mouselabweb.org>

Informed consent and practice page that also assigns a subject ID and sequence number (condnum) and forks

Working in 6 groups with the **designer** to build a set of pages in groups

1. Lichtenstein and Slovic Response-mode compatibility (two conditions: choice versus WTP)
2. Two context effect tasks (compromise and attraction)
3. Food choice (two versions)

Overview of the design



Gets subject/condnum from DB

Important variables:

Expname: name of condition

nextURL: page to refer to when submitting

General Settings				
expname: <input type="text"/>	email: <input type="text"/>	next Page: <input type="text" value="thanks.html"/>	form: <input type="text" value="mlwebform"/>	
Open <input type="button" value="Mouseover"/>	Close <input type="button" value="Mouseout"/>	format: <input checked="" type="radio"/> CSV <input type="radio"/> XML	master: <input type="text" value="1"/>	rand: <input type="checkbox"/>

Designer

The screenshot shows the MouselabWEB Designer interface. Red circles highlight the 'exname' and 'email' fields in the 'General Settings' section, the 'next Page' field, the 'Window Title' field, the 'Check all on submit for missing responses' checkbox, the 'Warning Text' field, the 'Counterbalancing' section, and the 'Text on submit button' field. Blue arrows point from text boxes to the 'Pre HTML' section, the 'MouselabWEB Table' section, and the 'Post HTML' section.

MouselabWEB Designer v. 1.001
help
load clear

General Settings
exname: email: next Page: thanks.html form: mlwebform
Open Mouseover Close Mouseout format: ☐ CSV ☐ XML master: 1 rand: ☐

Appearance
CSS: mlweb.css active: actTD
boxfront: boxTD inactive: inactTD

output
test html
serverside: php

Window Title: MouselabWEB Survey Check all on submit for missing responses ☐ Warning Text: Some questions have not been answered Timer Active ☐ timer properties

Pre HTML

MouselabWEB Table
Counterbalancing: ☒ Auto (1 cond) ☐ Manual
Col: 1 Width: 100 Type: fixed ☐ Fix Col labels new Col new Btns
Row: 1 Height: 50 Type: fixed name: a0 active: ☒
boxbt: text:
☐ Fix row labels new row new Btns

Post HTML

Text on submit button: Next Page

Text/scales before the MouselabWEB table

MouselabWEB table

Text/scales after the MouselabWEB table

Counterbalancing...

Condnum contains a sequence number that is passed from page to page

Counterbalancing will be done on this number

Counterbalancing:

☐ Auto (2 cond)

☒ Manual (2 cond)

Col: 1 move: 1 ☐ Fix Col labels

Width: 100 Type: CBal.

Row: 1

Height: 50

Type: CBal.

name: a0 active: ☒

boxtxt: box1

text: value1

Row: 2 move: 2 ☐ Fix row labels

Height: 50

Type: CBal.

name: b0 active: ☒

boxtxt: box2

text: value2

Manual CB orders

Ord.no.	Columns	Rows	Sel
1	1	1 2	<input checked="" type="checkbox"/>
2	1	2 1	<input checked="" type="checkbox"/>

input: Separate column and row numbers by semicolons (;)

col: row:

New list based on counterbalancing

Post HTML

Text on submit button:

Task 1: response-mode compatibility

Lichtenstein and Slovic 1971

More likely to choose the P-bet
Higher WTP for the \$bet

Explanation: more weight on
the more compatible dimension

Two conditions: choice/WTP

Two groups, one for each

Align intro text for the scenario

Agree on variable names

o_a1, p_a2 etc...

agree on counterbalancing and
layout (horizontal/vertical)

BETS USED IN EXPERIMENT III

Pair	P bet	Expected value	\$ bet	Expected value
1	35/36 Win 400 1/36 Lose 100	386	11/36 Win 1600 25/36 Lose 150	385
2	34/36 Win 250 2/36 Lose 50	233	14/36 Win 850 22/36 Lose 150	239
3	34/36 Win 300 2/36 Lose 200	272	18/36 Win 650 18/36 Lose 100	275
4	33/36 Win 200 3/36 Lose 0	178	18/36 Win 500 22/36 Lose 0	175

Gamble A			Gamble B	
Outcome 1		Outcome 2		Outcome 1
probability 1		probability 2		probability 1

Counterbalancing:	Col: 1 Width: 200 Type: fixed	Col: 2 Width: 200 Type: fixed
<input checked="" type="radio"/> Auto (1 cond) <input type="radio"/> Manual <input type="button" value="Set"/>		
Row: 1 Height: 30 Type: fixed	name: a0 active: <input type="checkbox"/> boxtxt: <input type="text"/> text: Gamble A	name: a1 active: <input type="checkbox"/> boxtxt: <input type="text"/> text: <input type="text"/>
Row: 2 Height: 50 Type: fixed	name: o_a1 active: <input checked="" type="checkbox"/> boxtxt: Outcome 1 text: Win 400	name: o_a2 active: <input checked="" type="checkbox"/> boxtxt: Outcome 2 text: Loose 100
Row: 3 Height: 50 Type: fixed	name: p_a1 active: <input checked="" type="checkbox"/> boxtxt: probability 1 text: 35/36	name: p_a2 active: <input checked="" type="checkbox"/> boxtxt: probability 2 text: 1/36

Task 2: context effects

Context effects: two groups

Attraction

compromise

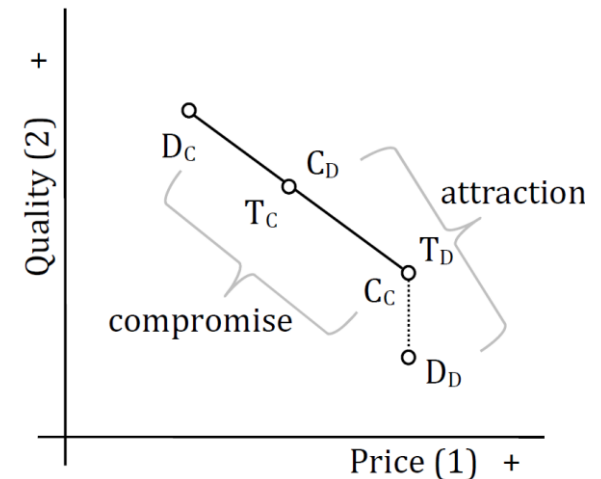
I have texts available from that earlier study: perhaps adapt?

Order effects: **use counterbalancing**

Attraction: TD first vs. C first

Compromise: T first versus T middle

Naming boxes: Tf, Tp, Df, Dp, Cf, Cp



To select a new plan with a new cell phone from another provider. In the new city there are several providers that offer similar network coverage. Their plans and the cell phones they offer are presented below. Because you are not sure how long you will remain in this area, you have decided not to commit to a long term plan. Thus the phones are not fully subsidized by the providers and you will have to pay some amount for the phone.

Make a choice among these cell phones and plans by pressing the button below the phone/plan of your choice.

	A-plus	B-ext	Freedom-C
Features			
Price			

Task 3: Food Choice Example

Nutrition labels are important sources of information for consumers. We will investigate how consumers choose between two products either from the **yoghurt** or the **cereal** category.

Instructions could read like this:

Choose one of the following products.
Try to make a healthy choice.

Use the following information:

Name / Brand

Total fat

Cholesterol

Sodium

Protein

Total Cabohydrates

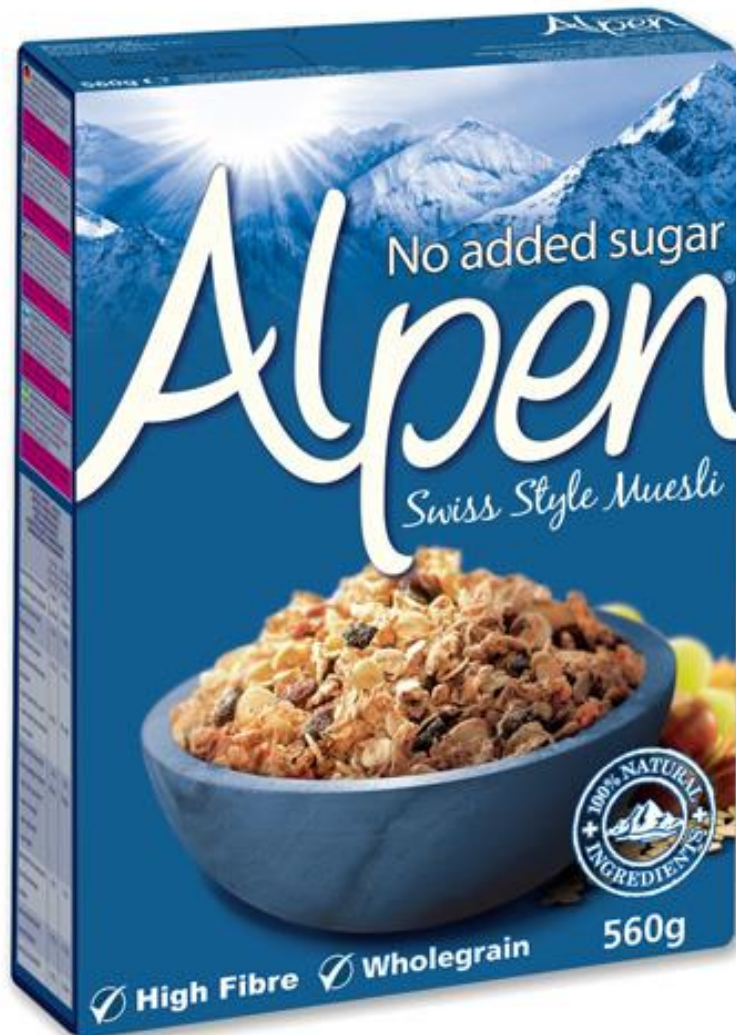


Nutrition Facts

Serving Size: 1 cup (30g)

Amount Per Serving

Calories	110	Calories from Fat	4
% Daily Value*			
Total Fat	0.5 g		1%
Saturated Fat	0.16 g		1%
Trans Fat	0 g		
Cholesterol	0 mg		0%
Sodium	270 mg		11%
Potassium	50.1 mg		1%
Total Carbohydrate	25.23 g		8%
Dietary Fiber	1.2 g		5%
Sugars	2 g		
Sugar Alcohols			
Protein	2 g		
Vitamin A	500.1 IU		10%
Vitamin C	6 mg		10%
Calcium	249.9 mg		25%
Iron	8.4 mg		47%



Nutrition Facts

Serving Size: 3/4 Cup (30g)

Servings Per Package: TBD

Amount Per Serving	Cereal	Cereal With 1/2 Cup Skim Milk
Calories	120	160
Calories from Fat	15	15
% Daily Value**		
Total Fat 1.5g*	2%	2%
Saturated Fat 0g	0%	0%
Trans Fat 0g		
Polyunsaturated Fat 0g		
Monounsaturated Fat 1g		
Cholesterol 0mg	0%	0%
Sodium 150mg	6%	9%
Potassium 60mg	2%	8%
Total Carbohydrate 25g	8%	10%
Dietary Fiber 2g	8%	8%
Sugars 6g		
Other Carbohydrate 18g		
Protein 2g		
Vitamin A	10%	15%
Vitamin C	10%	10%
Calcium	0%	15%
Iron	45%	45%
Vitamin D	10%	20%
Thiamin	25%	25%
Riboflavin	25%	35%
Niacin	25%	25%
Vitamin B6	25%	25%
Folate (Folic Acid)	50%	50%
Vitamin B12	25%	35%
Phosphorus	4%	15%
Magnesium	2%	4%
Zinc	25%	25%
Copper	2%	2%

* Amount in cereal. One-half cup skim milk contributes an additional 65mg sodium, 6g total carbohydrate (6g sugars) and 4g protein.

** Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g



Nutrition Facts

Serving Size (100g)

Servings Per Container

Amount Per Serving

Calories 45

Calories from Fat 0

% Daily Value*

Total Fat 0g 0%

Saturated Fat 0g 0%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 0mg 0%

Potassium 70mg 2%

Total Carbohydrate 13g 4%

Dietary Fiber 4g 18%

Soluble Fiber 1g

Insoluble Fiber 3g

Sugars 7g

Protein 0g

Vitamin A 2% • Vitamin C 2%

Calcium 2% • Iron 4%

Vitamin E 2% • Thiamin 2%

Riboflavin 0% • Niacin 4%

Vitamin B6 2% • Phosphorus 2%

Magnesium 2% • Zinc 4%

Manganese 140%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Potassium	3,500mg	3,500mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4



Nutrition Facts Valeur nutritive

Per 1 container (100 g)
pour 1 contenant (100 g)

Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories 110	
Fat / Lipides 2 g	3 %
Saturated / saturés 1 g + Trans / trans 0 g	5 %
Cholesterol / Cholestérol 5 mg	
Sodium / Sodium 50 mg	2 %
Carbohydrate / Glucides 20 g	7 %
Fibre / Fibres 0 g	0 %
Sugars / Sucres 16 g	
Protein / Protéines 3 g	
Vitamin A / Vitamine A	2 %
Vitamin C / Vitamine C	0 %
Calcium / Calcium	10 %
Iron / Fer	0 %