

Design & Prototypage

James EAGAN

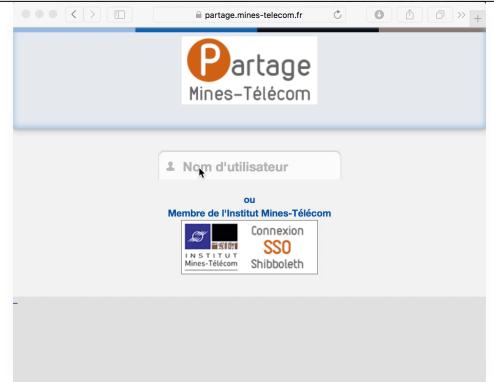
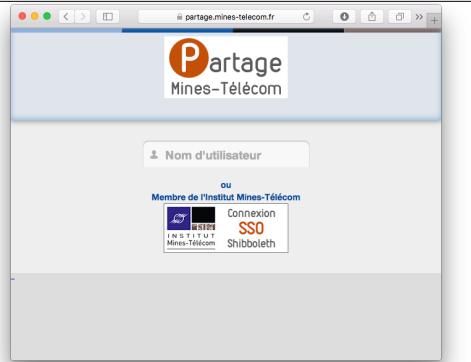
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Ce cours a été développé en parallèle par des membres des départements IHM de Georgia Tech et Télécom ParisTech. La liste des contributeurs inclut Gregory Abowd, Al Badre, James Eagan, Jim Foley, Elizabeth Mynatt, Jeff Pierce, Colin Potts, Chris Stasko, et Bruce Walker.
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Dernière mise à jour : mars 2016.



Besoins Utilisateur

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Motivation

User		Design goal
Low motivation, discretionary use	—	Ease of learning
Low motivation, mandatory use	—	Control, power
High motivation, due to fear	—	Ease of learning, robustness, control
High motivation, due to interest	—	Power, ease of use

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Knowledge & Experience

Experience

task	system	Design goals:
low	low	– Many syntactic & semantic prompts
high	high	– Efficient commands, concise syntax
low	high	– Semantic help facilities
high	low	– Lots of syntactic prompting

Job & Task Implications

Frequency of use

High — Ease of use

Low — Ease of learning & remembering

Task implications

High — Ease of use

Low — Ease of learning

System use

Mandatory — Ease of use

Discretionary — Ease of learning



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Define Tasks

Consider the *whole* system

Determine *who or what* should perform each task and each step :
e.g. the system remembers the login, but the user remembers the password

Determine criteria: efficiency, cognitive effort, time

Task x should take no more than y seconds

A new user should be able to create a new account in 5 minutes

Brainstorming

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Brainstorming

Génération d'idées

Marche mieux si tout le monde a déjà fait une réflexion initiale

Tout le monde propose d'idées

On ne les critique pas

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Design & Prototyping

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Prototyping the Interface

Why prototype?

Creating the system is expensive

Start with low-fidelity mockups

Progress to prototypes

Storyboards, task diagrams, etc.

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Design the Interface

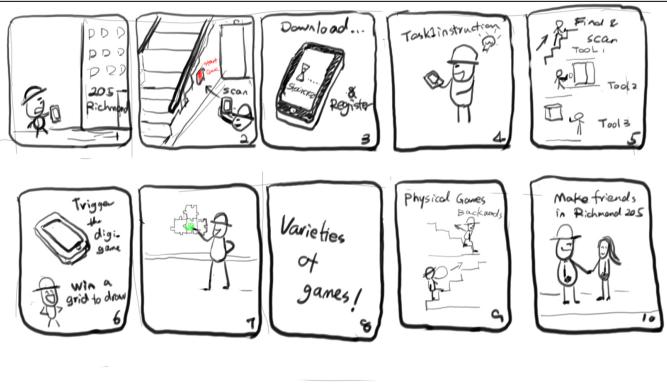


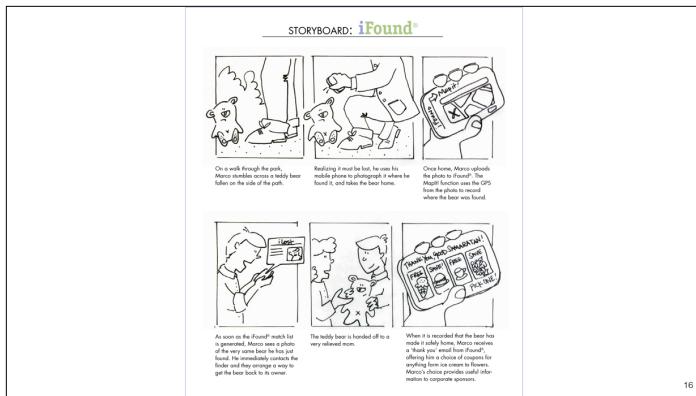
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Storyboards

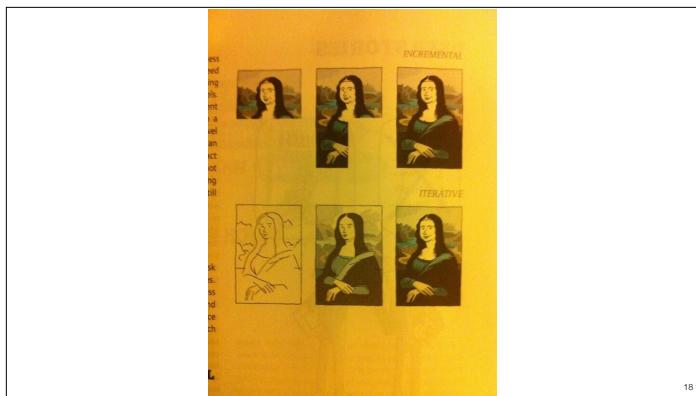
- Shows off
- Sequence
- Tasks
- Context
- Rarely shows interface itself

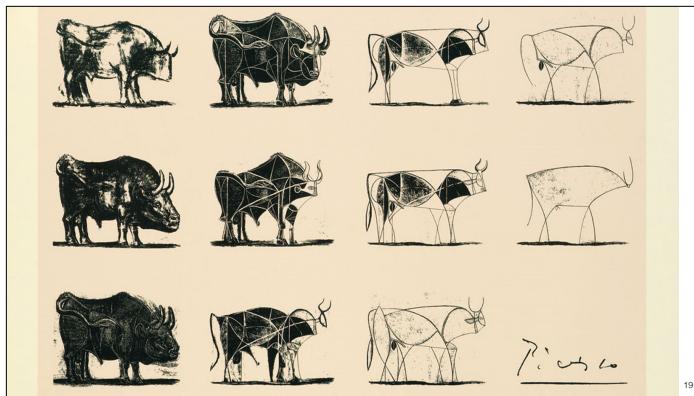
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A people settings

B people

C people

back to topics

messages

Send button appears on keyboard.

Send button

text field

comment...

text field

comment...

send button

side message to reveal.

→ view profile
→ report user

close →

close →

close →

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TIMESHEET: FRANCHISEMENT

THIS IS YOUR LAST TIMEENTRY. REGULAR?

CLIENT NAME: FRANCIS

CLIENT NAME: TAKA

CLIENT NAME: MIKE

CLIENT NAME: ...

NOT BUILDING PAGE!

ACTIVE TIME →

SELECT ONE WORKSHEET

TIME

TIME: EDIT TIME

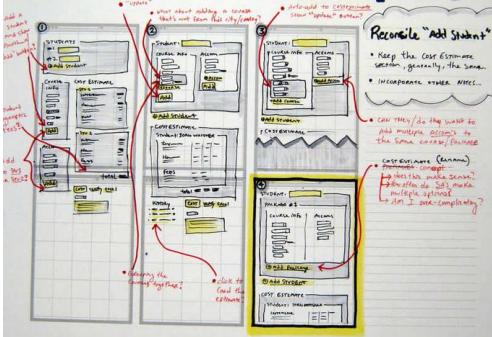
3:30

ADD NOTE

ACTIVE TIME

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PERSON PAGE: Final Notes



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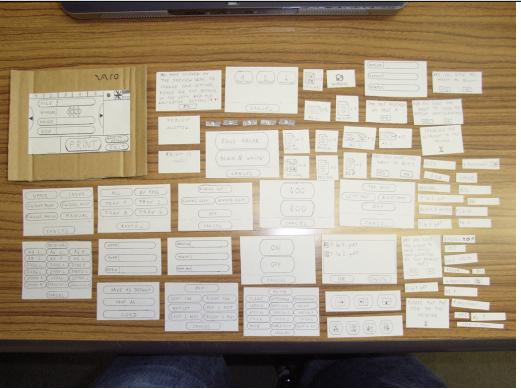
Paper & Physical Prototyping



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Wireframe Prototypes

Paper or digital

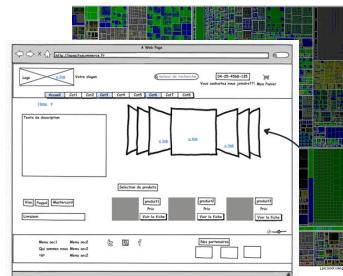
Layout & functionality

Tools :

OmniGraffle

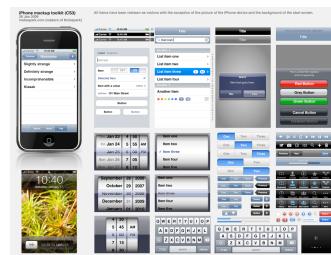
Browser plugins

e.g. Pencil project



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6. Prototypage : mockup



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Wizard of Oz

Simulate the system with a human wizard

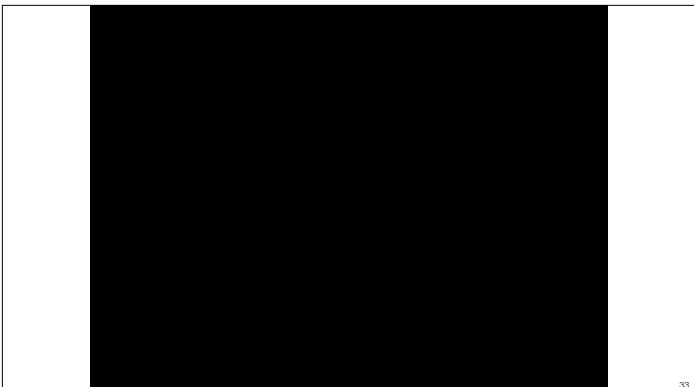


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Prototyping tools



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Usability Principles

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Usability Principles

Many different kinds

No cookbooks, checklists, magic recipes

Shneiderman, *Designing the User Interface*

Dix, Finlay, Abowd, Beale, *Human-Computer Interaction*

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Usability Principles

Learnability

Support for learning for users of all levels

Flexibility

Multiple ways for performing tasks

Robustness

Support recovery

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Learnability

Ease with which new users can begin effective interaction

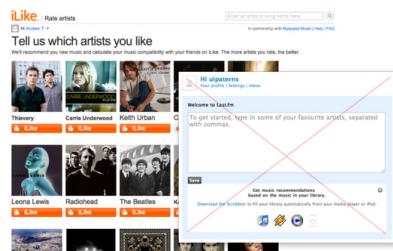
Performance improvement from session to session

Principles

Predictability, Synthesizability, Familiarity, Generalizability, and Consistency

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Recognition over Recall



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Predictability

I think that this action will do...

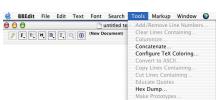
[Done]

vs

[Submit data. Go to Step 2](#)

Operation visibility – can see all available actions

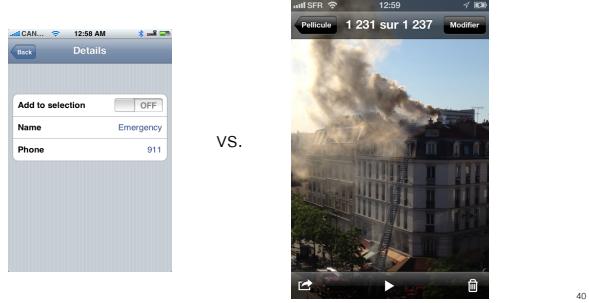
e.g. menus versus command-line



Grayed menu items

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Predictability



Chunking



Flexibility

Minimize modality, Multithreading, Task Migratability, Substitutivity, Customizability

Robustness

Observability

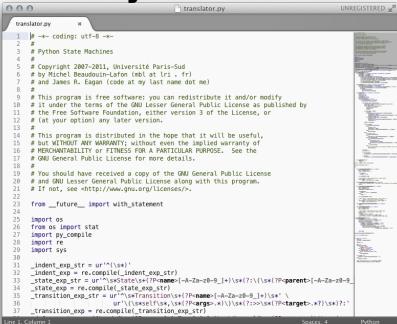
Recoverability

Responsiveness

Task Conformance

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Observability

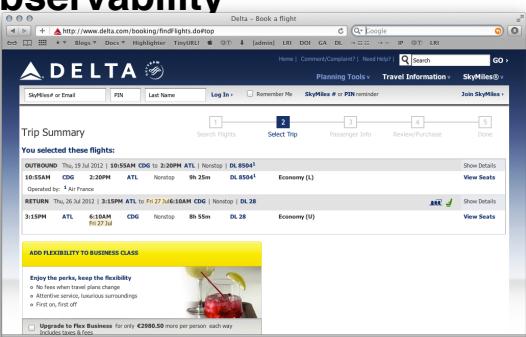


A screenshot of a code editor window titled "translator.py". The code is a Python script for a state machine translator. It includes a license header from the GNU General Public License version 3, imports for sys, re, and py_compile, and defines functions for indenting and recompiling state expressions. The code is heavily commented.

```
1 #!/usr/bin/env python
2 # -*- coding: utf-8 -*-
3 #
4 # Python State Machines
5 # Copyright (C) 2007-2011, Université Paris-Sud
6 # Author: Sébastien Loos (see AUTHORS)
7 # And James R. Eagan (code at my last name :))
8 #
9 # This program is free software; you can redistribute it and/or modify
10 # it under the terms of the GNU General Public License as published by
11 # the Free Software Foundation; either version 3 of the License, or
12 # (at your option) any later version.
13 #
14 # This program is distributed in the hope that it will be useful,
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17 # GNU General Public License for more details.
18 #
19 # You should have received a copy of the GNU General Public License
20 # and GNU Lesser General Public License along with this program.
21 # If not, see <http://www.gnu.org/licenses/>.
22
23 from __future__ import with_statement
24
25 import os
26 from __future__ import print_function
27 import py_compile
28 import re
29 import sys
30
31 _indent_exp_str = ur'^((*)'
32 _state_exp_start = ur'((*)<state>|<parent>|-A-Za-zA-Z0-9_+)*$'
33 _state_exp_str = ur'((*)<state>|<parent>|-A-Za-zA-Z0-9_+)*$'
34 _state_exp_end = ur'((*)<parent>|-A-Za-zA-Z0-9_+)*$'
35 _transition_exp_start = ur'((*)<parent>|-A-Za-zA-Z0-9_+)*$'
36 _transition_exp_end = ur'((*)<parent>|-A-Za-zA-Z0-9_+)*$'
37 _transition_exp = re.compile(_transition_exp_start + _transition_exp_end)
```

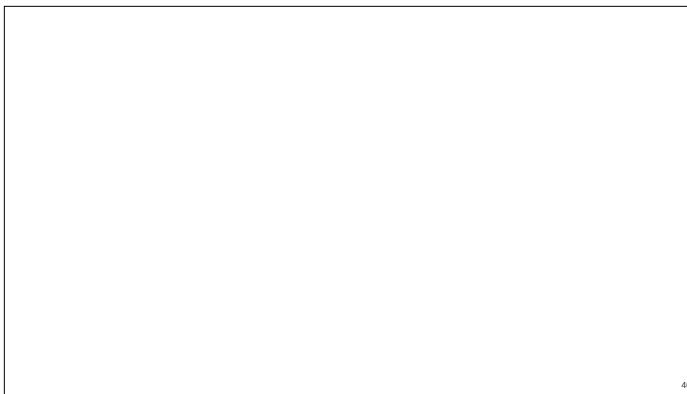
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Observability



A screenshot of a web browser displaying a flight booking page for Delta Air Lines. The page shows a trip summary for a round-trip flight from ATL to CDG. The outbound flight is 10:55AM on 26/04/2012, and the return flight is 3:15PM on 27/04/2012. Both flights are in Economy class. The page includes options to add flexibility to business class and upgrade to plus business.

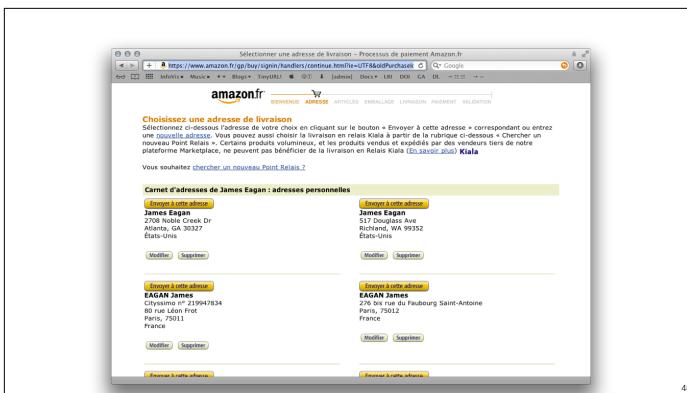
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4

Modèles Mentaux

La représentation mentale de l'utilisateur du système

Sa perception de comment marche le système



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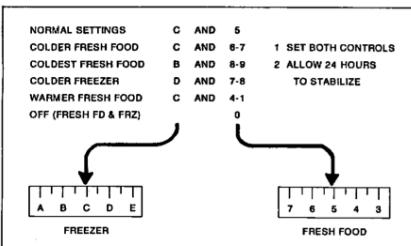
Don Norman

Design of Everyday Things



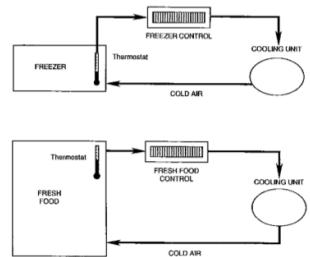
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Interface d'un Frigo



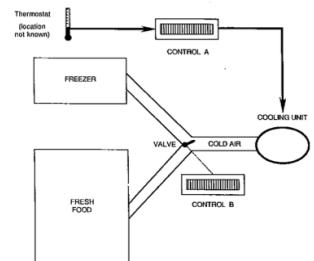
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Modèle d'un Frigo



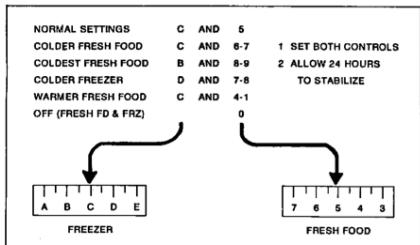
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Modèle d'un Frigo



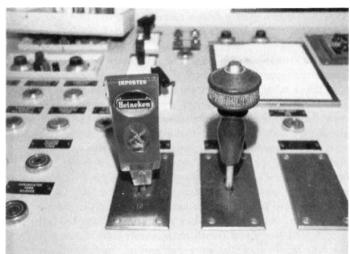
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Interface d'un Frigo



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Make Controls Look & Feel Different



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Paradox of Choice



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iPhone Accessories

iPad Accessories

Mac Family

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MacBook Pro

Mac mini

iMac

Mac Pro

Mac Accessories

MacBook Air

Wireless Printing

New from Adobe

Office for Mac 2011

The new, faster MacBook Air.
Everyone should have a notebook this advanced. And now everyone can.

Help Account Cart

New for Mac

OS X Lion USB Thumb Drive
From \$19.99

Apple Thunderbolt Display
27 inches

Apple Thunderbolt cable
0.9 m

Microsoft Office for Mac
From \$199

Apple HDMI to DVI
Cable 1 m

Magic Trackpad

Apple Battery Charger

Apple A1174 MagSafe Power Adapter
For MacBook

Apple Magic Mouse

Apple Remote

Top Sellers

1. Apple Magic Mouse

2. Apple Remote

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Invoke Scarcity

If it costs a lot, it must be good!

Only two left in this size!

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The Design of Sites: Patterns for Creating Winning Web Sites, Amazon, Dwyane, James A., Landay, Jason I., Hong, Livres anglais et étrangers

Bonjour James Eagan. Découvrez nos conseils personnalisés (Vous n'avez pas James ?)

Fête des Pères : idées cadeaux

Amazon.fr - Rechercher Livres anglais et étrangers

Toutes nos boutiques Recherche simple Non romans Nouveautés Meilleures ventes Bonnes offres Liste d'envies Livres audio Tous les livres

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THE DESIGN OF SITES
SECOND EDITION
NETTIE FREDRIKSEN
JAMES A. DWYANE

THE DESIGN OF SITES: PATTERNS FOR CREATING WINNING WEB SITES, 2ND EDITION

Douglas K. van Doren (Auteur), James A. Landay (Auteur), Jason I. Hong (Auteur)

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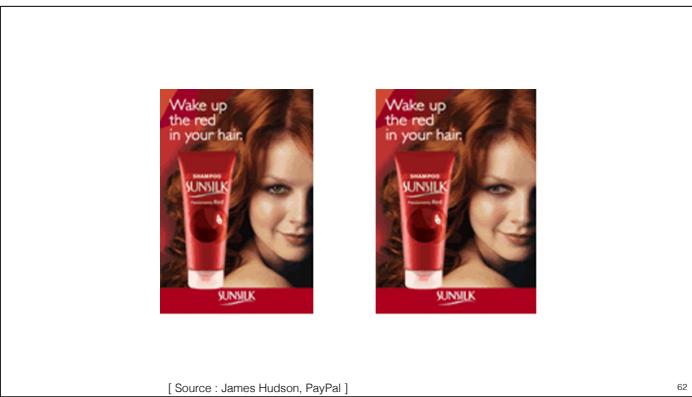
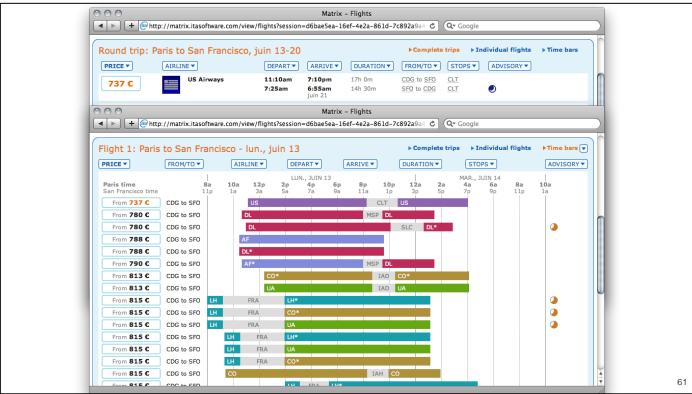
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Slips & errors

Slip — on sait ce qu'il faut faire, mais on ne le fait pas

« Ce matni un lapin a tué un chaussure »

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Erreur de closure



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