

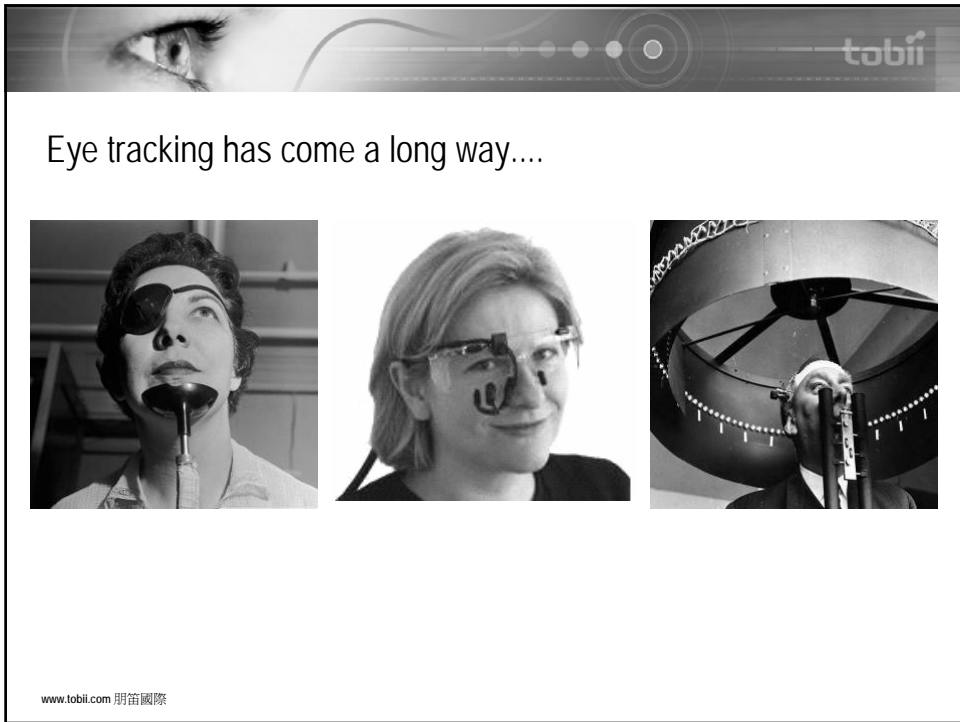


Use your eyes


Tobii Eye Tracker 無線式眼球移動追跡系統

Tobii Technology in Stockholm, Sweden
總代理 朋笛國際有限公司

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www.tobii.com



Eye tracking has come a long way...



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Product portfolio

Products

- » Tobii T60/120 eye tracker
- » Tobii x60/120 eye tracker
- » Tobii T300 eye tracker
- » Tobii Studio analysis software

Partner products

- » E-Prime Integration


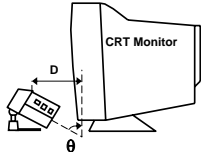
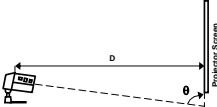
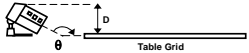
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Tobii x60/x120 eye tracker

» The flexible solution

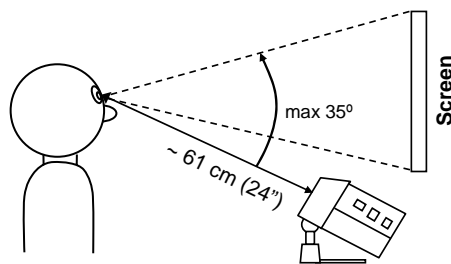
- ▣ Performs eye tracking relative to CRT monitors, projection screens and physical scenes

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Eye Tracker general guidelines

- » The Tobii Eye Tracker should be placed so that the person sitting in front of the eye tracker will sit at an approximate distance of 61 cm (or 24 inches) from the eye tracker.
- » The Tobii Eye Tracker should be placed so that the gaze angle of the person being eye tracked never will exceed 35° as long as he looks at the screen.



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- *電腦螢幕刺激源
- *電視/投影屏幕刺激源
- *x60/120 實體空間刺激源

Stimuli多模式刺激及同步記錄分析

- » -Instruction 導引文字頁(自訂字形、背景色)
- » -Images 靜態圖片(Slide自動連續投片)
- » -Web 網頁動態多視窗同步播放及記錄分析
- » -Movie/AVI影片(動畫)同步播放及記錄分析
- » -Screen(數位相機)螢幕即時畫面播放及記錄分析
- » -Questionnaire 自編問答變數欄輸入
- » -PDF數位電子檔同步播放及記錄分析
- » -Extensions 完全與E-Prime雙向支援
- » -RTA回溯放聲思考再錄對照(精確度再重整)
- » -E-Prime extensions



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Handheld devices

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GazePlot PDA 0-1 sec



GazePlot PDA 1-2 sec


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- Recording 同步眼跡記錄資訊
- Gaze data 眼跡凝視所有資料
- Eye position in space 雙眼位置(含雙眼與偵攝器距離)
- Pupil size 瞳孔面積
- Stimulus timing 刺激持續時間
- Validity codes 凝視信度指數
- Video of screen contents 螢幕即時畫面尺寸
- Mouse clicks and Key presses 滑鼠及按鍵註記
- Web page transitions & scrolling 網頁動態區塊及捲頁
- Synchronized video & audio 同步記錄受眾臉部表情及聲音
- (Remote) Live Viewer 雙(螢幕)電腦同步IP遠距操控及同步訊號互動

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Area of interest (AOI) 重點區塊比對分析

- Rectangular 距形區塊
- Ellipse (橢)圓形區塊
- Polygon 多角形自由區塊
- AOI templates 圖表式
- Scene segmentation 影片多重取圖重疊眼跡自動靜態分析


Statistics 多重數據統計

- Fixation count 停留次數
- Gaze time 凝視停留時間
- Average fixation duration 平均停留期
- Time to first fixation 停留啟動
- Fixation order 停留次序

Flexible export 靈活轉檔輸出

- Filters 濾訊/非濾訊資料檔(增強精確度): Fixation/Eye filters
- Statistics 統計資料檔、AVI 影片檔、bmp/jpg/png 圖片檔

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www.wfp.org
www.benetton.com/food
Tracking by Tobii

Food for life
WFP
World Food Programme
UNITED COLORS
OF BENETTON.

» What is the most attention grabbing element?

First fixation

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» What is the most attention grabbing element?

First fixation

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Most fixations

» What keeps our attention?

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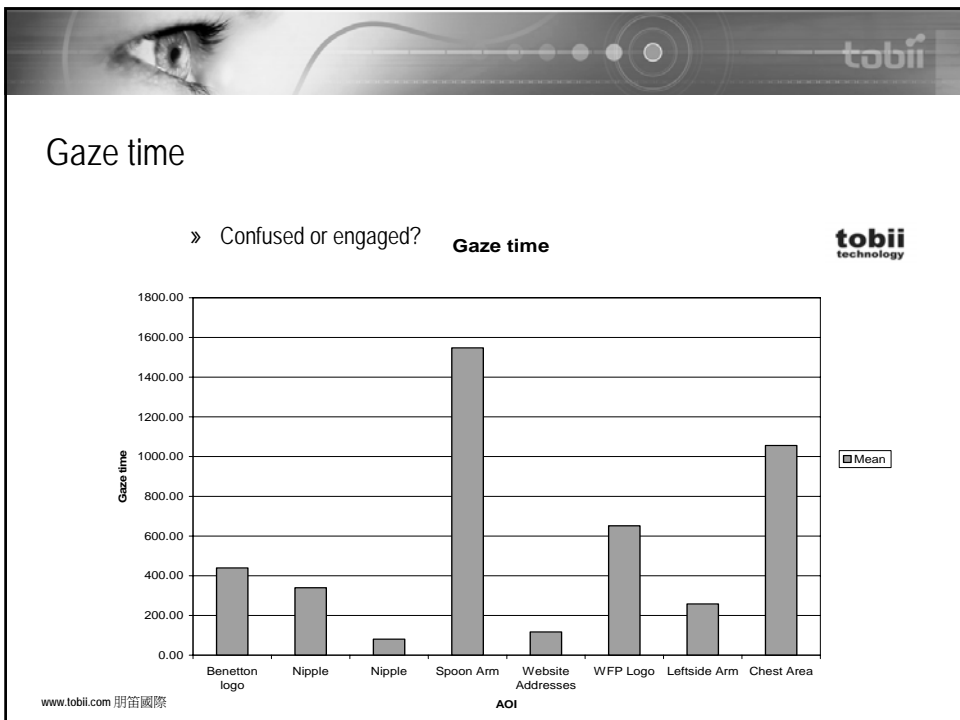
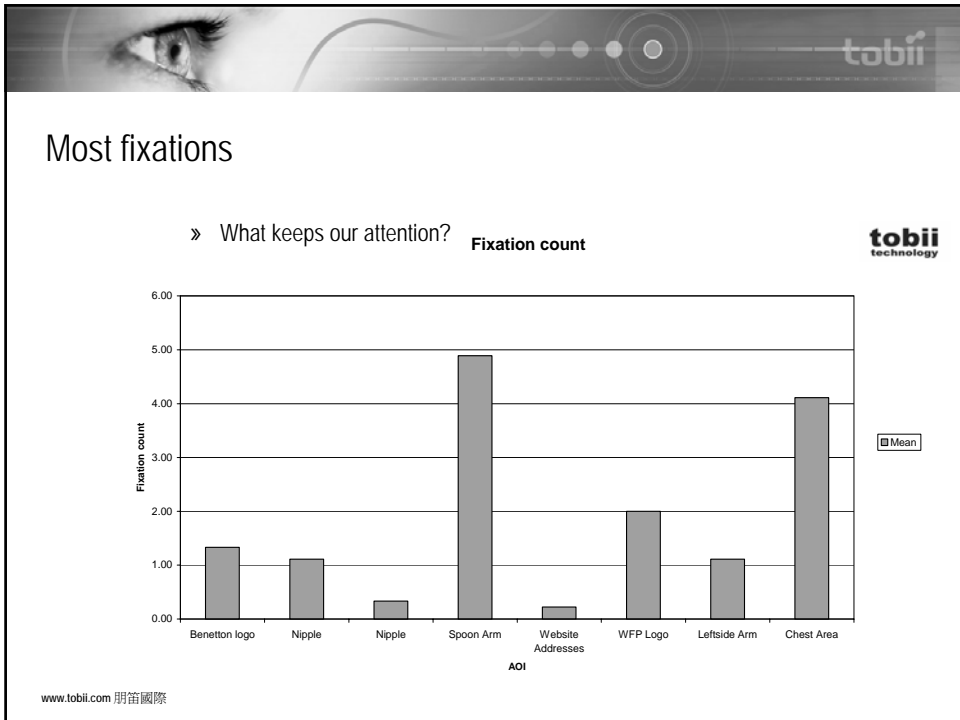
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Most fixations

» What keeps our attention?

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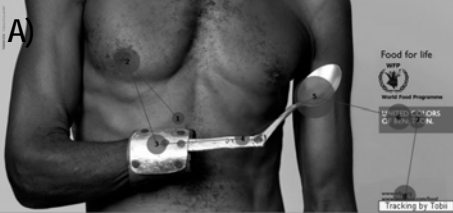
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Fixation order

» Do available visual cues drive users effectively?

A)

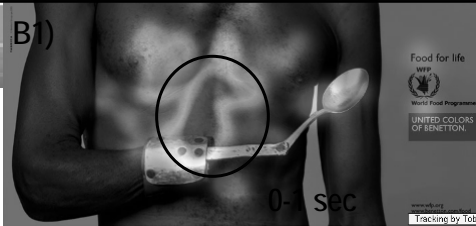


Gaze plot Benetton advertisement

A) 0-5 sec interval, 1 participant
 B1) 0-1 sec interval, 46 participants
 B2) 1-2 sec interval, 46 participants
 B3) 2-3 sec interval, 46 participants

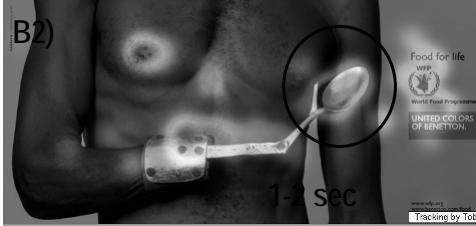
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B1)



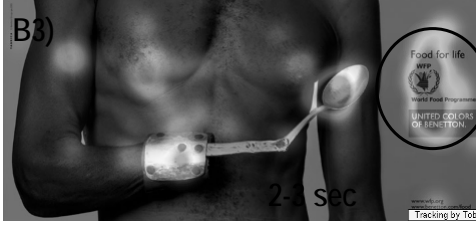
0- sec

B2)



1-2 sec

B3)




2- sec

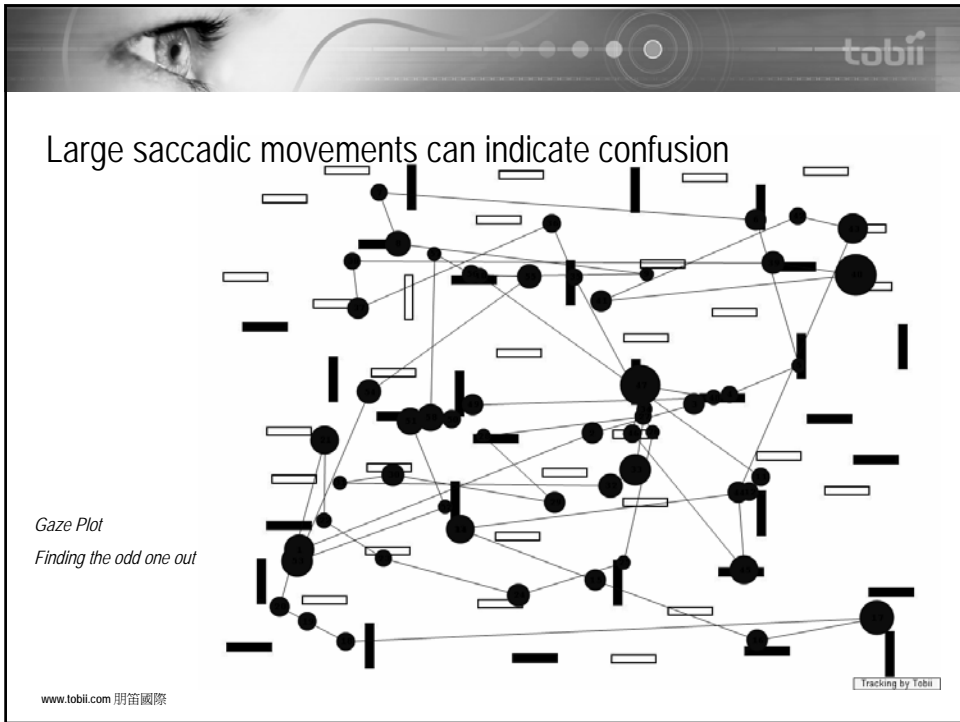
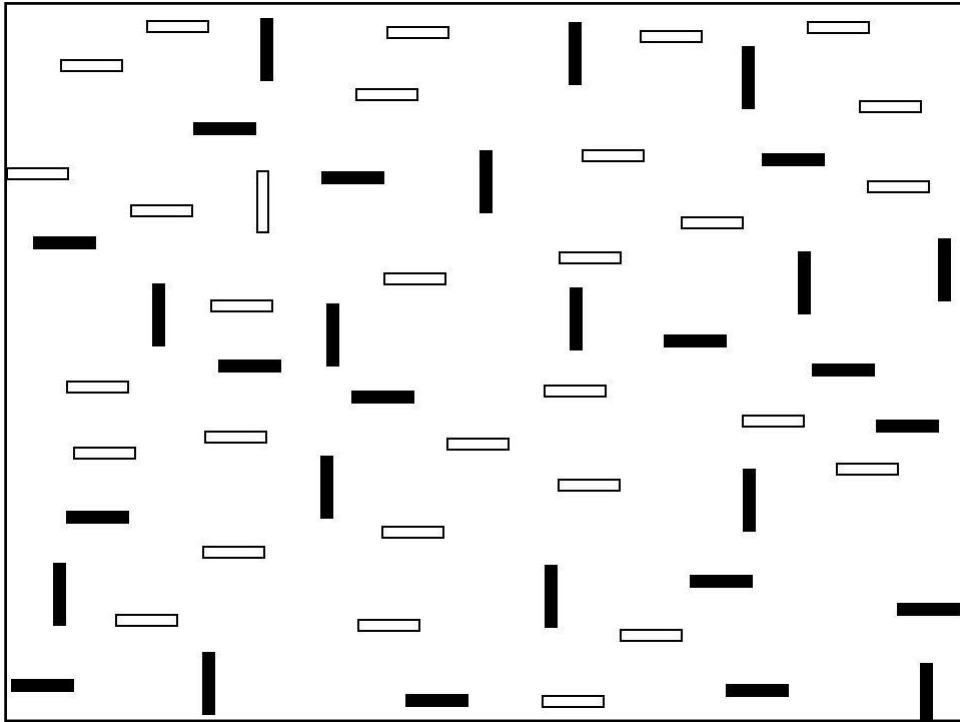
Movement between elements

» Structured or random?

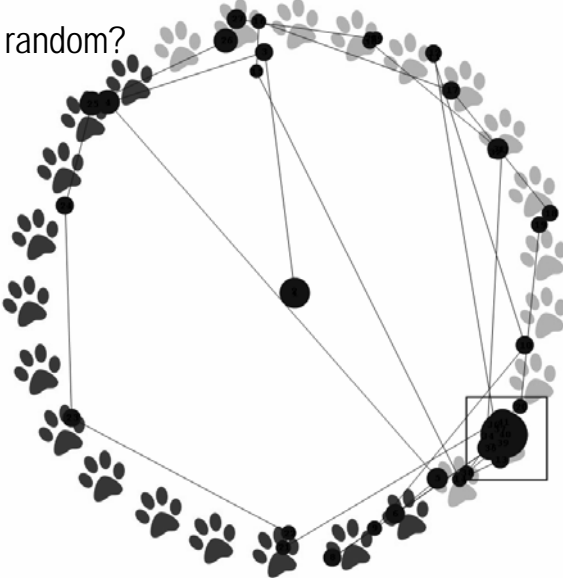
- ▣ See next picture: Find the odd one out



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Structured or random?



A network graph with nodes represented by black circles of varying sizes and paw prints. The nodes are arranged in a circular pattern. A dense network of edges connects the nodes, with a prominent large black node at the bottom right highlighted by a white box. The text "Structured or random?" is positioned at the top left of the graph area.

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Structured or random?



A network graph with nodes represented by black circles of varying sizes and paw prints. The nodes are arranged in a circular pattern. Only a few edges connect the nodes, forming a sparse structure. The text "Structured or random?" is positioned at the top left of the graph area.

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Making decisions

- » Backtrack between options
- » Sometimes take one last look just to be sure

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Psychology Research

- » ClearView is suitable for a wide range of psychology and physiological experiments, such as:
 - ▣ Studies of autism, ADHD, schizophrenia
 - ▣ General psychological response studies
 - ▣ Infant research
 - ▣ Reading studies
 - ▣ Studies of ocular-motor behavior and vision deficiencies

Autism prediction

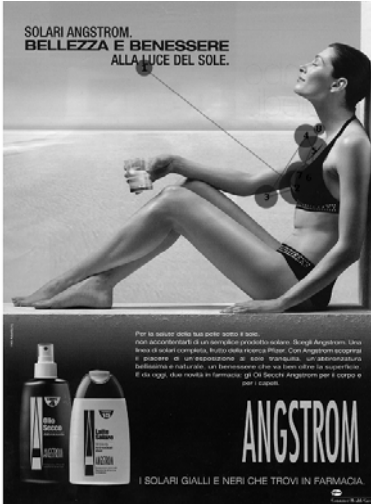
Left: normal

Right: autistic

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What is seen and what not?



**SOLARI ANGSTROM.
BELLEZZA E BENESSERE
ALLA LUCE DEL SOLE.**

Per le donne delle luci c'è solo il sole. Con Angstrom, una linea di prodotti (creme, latte, spray) che ti protegge, ti idrata e ti dona la bellezza e la salute. La Farmacia di un'ora oltre la superficie. E oggi, non resta che andare in farmacia gli Angstrom per il corpo e per il cuore.

ANGSTROM

I SOLARI GIALLI E NERI CHE TROVI IN FARMACIA.


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Gaze plot Angstrom advertisement

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Applications of eye tracking

- » To analyze human behavior
 - ▣ Psychology research
 - ▣ Infant studies
 - ▣ Vision research
 - ▣ Usability testing and Human Computer Interaction research
 - ▣ Advertising testing
- » To interact with computers
 - ▣ Mono-modal / Multi-modal
 - ▣ Active / Passive




TOMMY HILFIGER
watches

Example of Advertising testing

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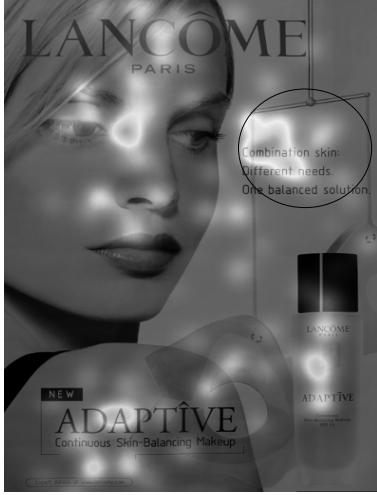
Do available visual cues drive users effectively?



Combination skin. Different needs. One balanced solution.

NEW ADAPTIVE Continuous Skin-Balancing Makeup

Models eyes receive attention



Combination skin. Different needs. One balanced solution.

NEW ADAPTIVE Continuous Skin-Balancing Makeup

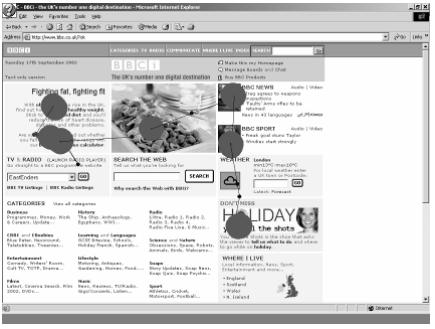
Models eyes drive attention

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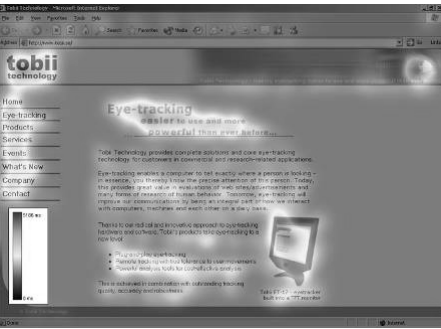
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What can we learn from eye tracking?

- » How do different user populations interact with my design?
- » Where should important content be placed?




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Gaze plot and Hot spot websites

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Handheld devices



HotSpot PDA

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AdvertisingTesting

Advertising design testing on a variety of media:

- » Print advertising (digitally scanned and presented on a monitor)
- » Print advertising (using the actual physical print)
- » TV commercials
- » Product placement (with projection screen shopping shelves)
- » Web advertising

請觀賞





Example Print Advertising: Setup & Gaze Plot

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Change Blindness

- » Eindhoven University of Technology
 - Tobii x60/x120, ClearView and E-Prime



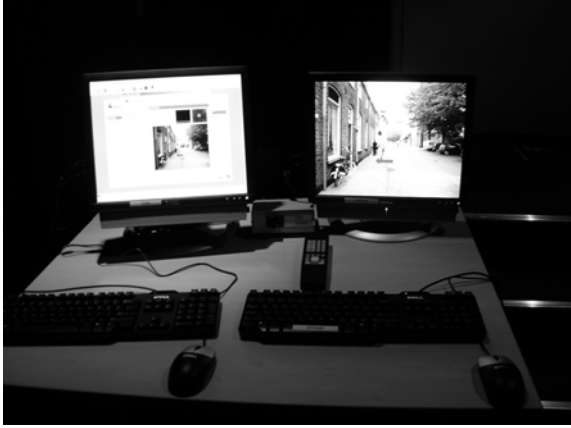
Lab setup example

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Change Blindness

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Control room

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