

# Understanding Cultural Differences in HCI: The Diamond Model of Culture

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# An Everyday Sight in Tampere?

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<http://www.flickr.com/photos/tjbax/21800984/>

# An Emblem of Pakistani Culture

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- Reading cultural manifestations
  - **People** (behaviours, values)
  - **Places** (configurations, uses, expectations, meanings)
  - **Things** (use value, status value, ...)
- Different things in different places
- Different behaviours, different places
- Different values in different places

# What is Culture?

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- ❑ Is it actually (just) culture that we are interested in for new markets?
- ❑ Or is it what is different in those countries that influences the success of new products and services?
  - Culture and society?
    - ❑ Globalisation and glocalisation
  - Political factors?
  - Economic factors?
    - ❑ especially developing countries
    - ❑ IT4D should not be separate from Culture and UX, major overlap between these

# Three PhDs

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- Much of this presentation is based on research by three of my PhD students at the University of Sunderland
- I wish they could all have been here to present their work
  - Fuad Qirem (Jordan)
  - Leonard Mengo (Kenya)
  - Mohamed El Zayat (Egypt)

# Fuad Qirem



- Cultural Factors in Users' Evaluations of User Interfaces And Interactions: Exploration and Representation of Usage in Jordanian Contexts
  - Supervisors: Gilbert Cockton, Mohamed Loutfi, Ghaleb El-Rafae (Examination Oct 2009)
- Diamond Model of Culture
  - **Alternative to Onions, Icebergs and Pyramids**
  - **By-product, not main aim**
- An exclusive focus on Cultural Markers will overlook values about usage that may have more influence
  - **Main contribution of Fuad's research**

# Leonard Mengo



- The Impact of Culturally Sensitive Design on the Acceptability and Persuasiveness of Multimedia Learning Materials for Senior Managers in a Developing Country and its Immediate Neighbours
  - Supervisors: Gilbert Cockton, Susan Jones, Alan Fell (submitting 2009)
- Positive impact of cultural markers
  - Western version **not** disadvantage
- Wide range of potential confounds
  - Training on Situational Leadership
  - Care taken with images containing violence, gender roles, political party colours, and more
  - **Bases for extending Diamond Model**



# Mohamed El Zayat



- A Strategy to Improve e-Learning Adoption, Implementation and Development in Higher Education in Egypt, PhD, 2009
  - Supervisors: Alan Fell, Judith Kuit, Gilbert Cockton
- Western sourced e-learning materials regarded as of superior quality by Egyptian students
- Self-reporting of technology ownership and use unreliable (status markers)
- E-learning resources incompatible with some instructor practices (economics)
- ICT infrastructure main priority
- **Bases for extending Diamond Model**

# What Do You Think?

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- Write down (or SMS) at least 10 examples of cultural impact of which you are aware that relate to one or more of:
  - The look and feel of user interfaces
  - Functions and capabilities
  - How users evaluate their interaction with digital products and services
  - How users evaluate the outcomes of their interactions
- Spend around 5 minutes on this, in small groups if you can on this little 'experiment'

# How Can We Model Culture?

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# Pyramid

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## □ Hofstede

- Individual

- Culture

- Nature

## □ Scopes

Culture (just!)



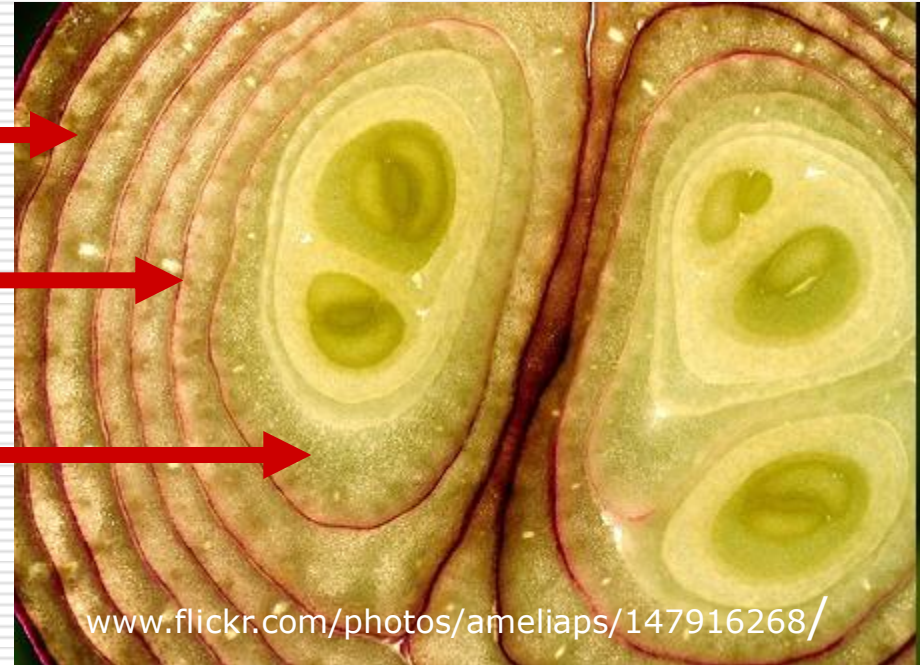
[www.flickr.com/photos/brooklyn\\_museum/2488800747/](http://www.flickr.com/photos/brooklyn_museum/2488800747/)

# Onion

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## □ Trompenaars

- Artefacts
- Norms and Values
- Adaptation to Environment

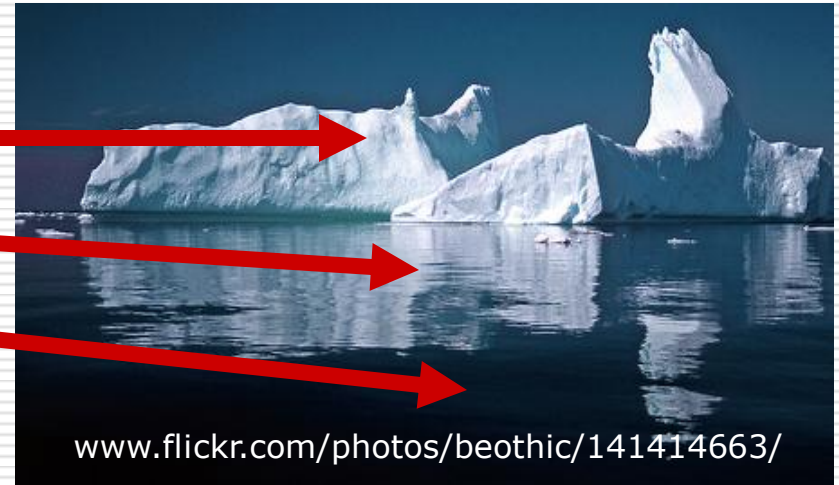


# Iceberg

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## □ Victor

- Surface culture
- Unspoken rules
- Unconscious rules



## □ General pattern

- Observable artefacts and behaviour
- Inferrable values and norms
- Increasingly harder to get at

# England

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# Jordan

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# Both

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# Diamond Model

## □ Fuad Qirem

- Objective (crown)

- Subjective (pavillion)

- Light Paths 



□ Light reflects off multiple facets, passing through different 'segments', emitted light reflects its path

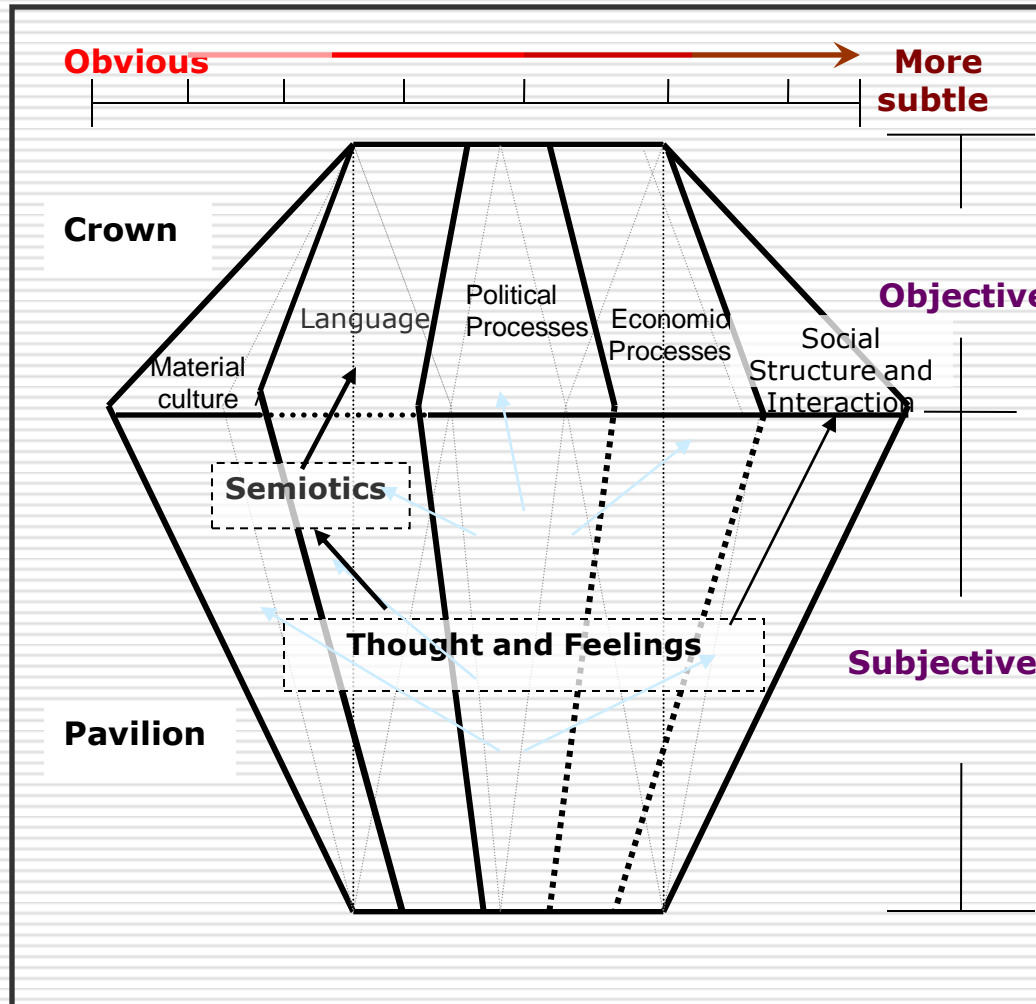


# Five Segments (so far)

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- ❑ Material Culture (mostly objective)
- ❑ Language (objective) and semiotics
- ❑ Political Processes
- ❑ Economic Processes
- ❑ Social Structure and Interaction
- ❑ Above order reflects default expectations in HCI about which factors are most influential

# Alternatively ...



# Who Had What?

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- Put your hand up if your list of examples of cultural impact contains an example of:
  - Material Culture (places and things)
  - Language and semiotics
  - Political factors (esp. national policies)
  - Economic factors (esp. development)
  - Social Behaviour/Interaction (people)

# Fuad Qirem's Research

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- Literature Survey followed by three studies
  - (Groups of) Variables for the Diamond Model
  - IT Expert Interviews
  - Repeat of Lazar and Colleagues USA Diary Study on Frustration
    - only 2 out of over 300 users angry!
    - *Triangulation interviews explored why*
  - User Interviews
- Each provided Jordanian instances and further variables for the Diamond Model
- *Dramatic Sketches* as an alternative representation for Jordanian instances

# Fuad's Focus

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- Fuad investigated the balance of influence of his five segments and their (groups of) variables
- Diamond Model is a live resource
  - Knowledge intensive and challenging
  - Should be restructured, extended and adapted to need
  - Unfinished
  - Unfinishable

# Material Culture

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*1.1 The Arts*

*1.2 Buildings, houses and monuments*

*1.3 Crafts and Decorative Art*

**1.3.1 Colour preferences, polychromic**

*1.4 Foods*

*1.5 Literature arts and media*

*No instances of variable found in study*

**New variable (group) added after study**

# Language and Semiotics

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2.1 Nonverbal communication

2.2 Familiarity with English spelling  
across cultures

2.3 Text direction

*2.4 Context*

2.5 Information flow

2.6 Colour

2.7 Time of day, dates and numbers

**2.8 Direct translation**

# Political Processes

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3.1 Political contexts.

3.2 English fluency and the role of colonialism.

## **3.3 Government Support for IT Training**

**3.3.1 IT Education in Schools**

**3.3.2 IT Training Centres in Communities**

**3.4 Trade Sanctions**

**3.5 Government Language Policy**

**3.6 Authority and policy of companies**

# Economic Processes

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4.1 Cost of equipment

**4.2 Availability of International Products and Services**

**4.3 Affordability of IT Access**

**4.3.1 Affordability of Computers**

**4.3.2 Affordability of Internet Access**

**4.3.3 Affordability of Training**

# Social Structure and Interaction (1)

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5.3 *Long-term versus short-term orientation*

5.4 Attitude to the environment

5.5 Individualism versus collectivism

## **5.5.1 Individual responsibilities toward computers**

5.6 Femininity versus masculinity

## **5.6.1 Gender roles**

5.7 Uncertainty avoidance

5.8 *Concepts of times and space*

## **5.8.1 Attitude to Time**

5.9 *Business etiquette*

5.10 Neutral or emotional

5.11 Structure and achievement versus Ascription

5.12 Power distance and Authority conception

# Social Structure and Interaction (2)

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**5.13 Age differences**

**5.14 Usage experiences/IT knowledge**

**5.15 Attitude to Work**

**5.16 Religion**

**5.17 Access to, and Experience with,  
Technology**

**5.19 Family obligation and relationships**

**5.19.1 Nepotism in the Workplace**

**5.20 Software and Identity**

**5.21 Attitudes towards Western  
Technology**

# Glocalisation

- ❑ Globalisation is not a global trend (!)
- ❑ Impact of globalisation has local variations
  - Different mixes of the global and local
  - **Globalisation + Localisation**
- ❑ Examples in all three Sunderland PhD studies
  - Bin Laden videos full of Western artefacts



# A Dramatic Sketch

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## ***Dramatic Sketch 3: Anas and his teacher***

*Anas is a student at Jordan University, who studies computer science. Anas uses his computer at home for studying, playing, graphic design and for internet use. Anas and his friends are in the same school, studying most subjects in English and using English software. One day, one of Anas' teachers asks students whether they prefer English software or software translated from English to Arabic.*

*Anas answers the question: Truly, I use some Arabic programs translated from English to Arabic and I face lots of problem, therefore I decide to use the English versions.*

*Teacher: Why Anas? And what are the problems that you face?*

*Anas: Some Arabic programs translates the word directly without anyone thinking about what it really means. Therefore it causes some changes in the meaning and sometimes causes confusion for us.*

# Dramatic Sketch (continued)

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*Teacher: what else Anas?*

*Anas: Also, when I use English software I develop my English language by reading and learning some new words. Typing and reading will be in English, therefore I will learn more and get more experience with the English language.*

*The teacher: That's true but sometimes we need to use Arabic programs, especially in the government and education sectors, because most of them use Arabic software.*

*Anas: Yes, but on the other hand there are private companies who prefer their employees to speak and write English fluently, and also have skills in using English software.*

# Leonard Mengo's Research

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- Direct test of cultural markers
  - Drawing on material culture (including media)
  - Impact on appeal and persuasiveness
- East African and Western versions of management training multimedia
  - Differed only in cultural markers
  - Colour, images, wise words, music, voice over accent
  - DM: 1.1-1.3, 1.5, 2.6, 3.5, 5.4, 5.6.1

# East African and Western Versions



- **Profiled participants (3.3)**
- **High production values (4.3.2)**

# Some of Leonard's Results

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- Pre-test post-test comparisons
  - East African version more persuasive despite negative bias in group
  - Too many profiling variables to balance
- Western version still very much appreciated and persuasive
- Better recall by cultural markers for East African version users
  - One political issue about colour (DM3.1)
- Issues about voice-over accent
  - DM: 2.1 & 3.2

# Mohamed El-Zayat

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- E-learning strategy for Egypt grounded in field studies
  - Cultural factors and questionnaire design
- Not designed to directly investigate culture and user experience
  - National institutional policy proposal
- Interesting similarities with Fuad Qirem's research, but these were independent PhD projects
  - I joined as Mohamed's co-supervisor in 2007-08
    - e-learning research
  - Fuad began his PhD in 2004

# E-learning Development Factors

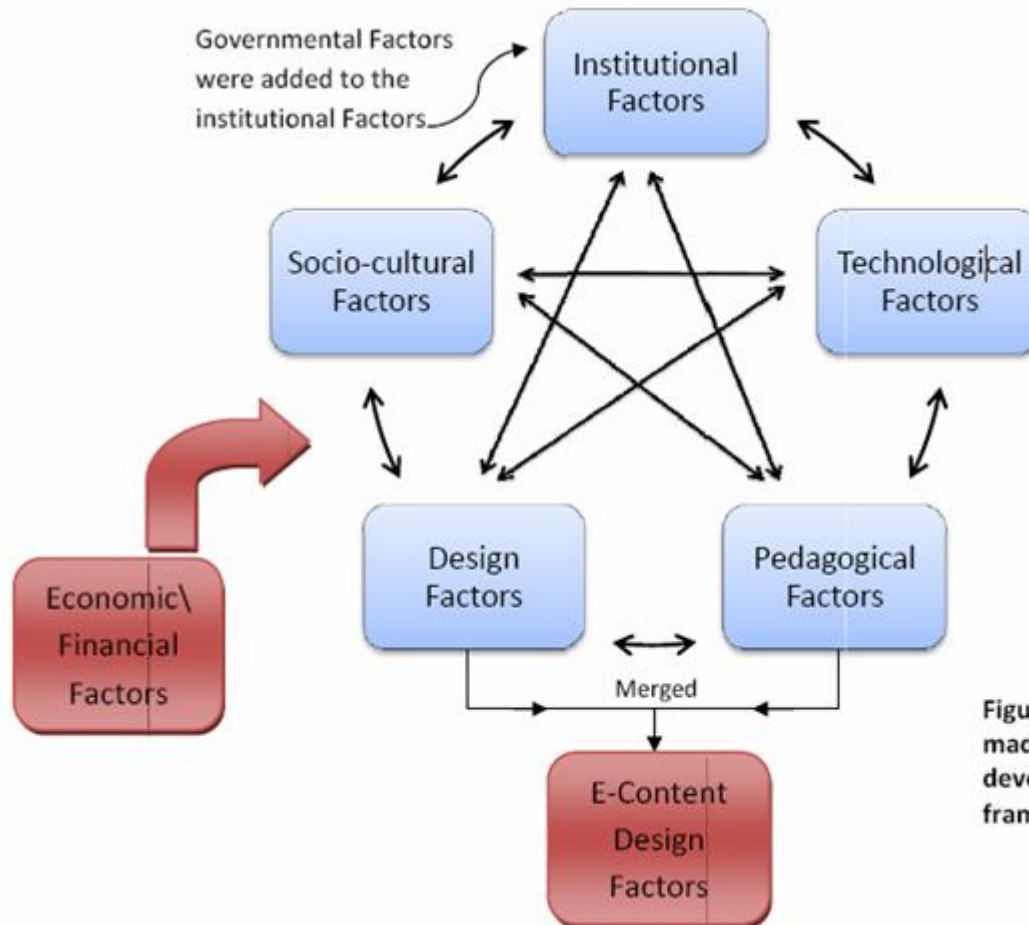


Figure 30 Modification made for the e-learning development factors framework

# Diamond Model Extensions?

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- Technological diffusion/maturity
  - Sixth segment or economic/political
- Influence of Western production values
  - 5.27 Attitudes to western media artefacts?
- Physical environment/geography as 6<sup>th</sup>/7<sup>th</sup> segment?
  - Distances for distance learning in Egypt and Kenya?
  - Concentration in Amman in Jordan

# Summary of the Three PhDs

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- Narrow model of culture can exclude other key factors
  - Especially in developing countries
  - Political and economic situations are crucial
- Culture shapes how users evaluate their usage experiences, not just how they evaluate interactive media
- Cultural markers are influential
  - Mood effects? Identity?

# Cultural Differences and UX

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- ❑ Culture ≠ Nation but national factors should not be underestimated
- ❑ Starting point is the 'territory'
  - Then consider how sociocultural, socioeconomic and political factors interact with technology ownership and usage
- ❑ Good to start with strong background
  - Literature Studies (Qirem, El-Zayat)
- ❑ Essential to follow through with field studies
  - New factors emerge
  - Very complex, unpredictable interactions
- ❑ Communicating findings
  - Distracting models or lively sketches?

# Practical Implications

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- Desk research is vital preparation
  - Remote evaluation may have to compensate where this is impossible
  - Not just evaluation, also investigation
- Need to be able to interpret and discuss remote evaluation data
  - Understanding how user experiences are interpreted
  - Explaining these interpretations
- Need to understand how culture and user experience interact
  - User Experience Frames can highlight this diagrammatically

# User Experience Frames (UEFs)

- HCI 2009, Microsoft Case Study
  - More in my Kansei 2009 keynote (Warsaw)
- UEFs simplified Worth Mapping

	A	B	C	D	E
1	(OH2) Nurturing: somewhere you want to be (?2)	(OF3) New Shared Times as a Family (?2)	(OF5) Stronger sense of family past (B-C2)	(OF7) Stronger Roots in the past (?2)	(OF2) Increased Family Empathy
2	<b>(CX1) Reliving (Shared) Memories</b>				
3	<i>Feelings (Visceral)</i>	<i>Thoughts and Beliefs (Reflective)</i>	<i>Browsing Actions (Behavioural)</i>	<i>Searching Actions (Behavioural)</i>	<i>Digital Transformations (Structure and Attributes)</i>
4	(CF5) Joy, Togetherness (?2, happy memories)				
5			(CA1) Dialogue about memories (?2)		(CD1) Enhanced content
6	(CF2) Evoked Memories		(C4) Annotate, tag, record		
7		(CC4) Decide to enhance			
8		(CC2) Decide found			
9	(CF7) Surprise		(C16) Browse to a Serendipitous encounter		(C17) Navigate to/Search for
10		(CC1) Decide to look for			
11	(CF3) Feeling drawn in		(CC3) Decide to use archive		
12	(CF8) Physically engaged				
13					
14					
15					
16		QT2: Inviting, QI1; Playful, fun			QT4: Capable, comprehensive, versatile, inclusive
17	MAT1-2 Tangible interface on table forms	ENT 1-3 Attract features	CRE1 Metaphor views etc	CRE5 Search capabilities, tag clouds etc.	
18	<b>FeCAT Abstract Scenarios: Main and variations</b>				
19	MAIN: 1/2 - Solo/group decide to find (starts at CC1), then decide to annotate [solo usage excludes CA1+CF5] CC1.C17.CC2.CC4.C14.(CD1+CF2./CA1.CF5)				
20	A1-2. Solo/group decide to annotate, so must find [Starts at CC4, solo exclusions as MAIN abstract scenario] CC4.C17.CC2.C14.(CD1+CF2./CA1.CF5)				
21	B1-2. Solo/group user attracted to browse ENT 1-3.QT1.CF8.CF3.CC3.C16.CF7.CF2./CA1.CF5				
22	Each scenario can result in a range of outcomes, depends on target content and enhancements				
23	OF3 could always result				
24	OF5&7 require certain categories of family content, OF2 requires individual's content				
25					
26					

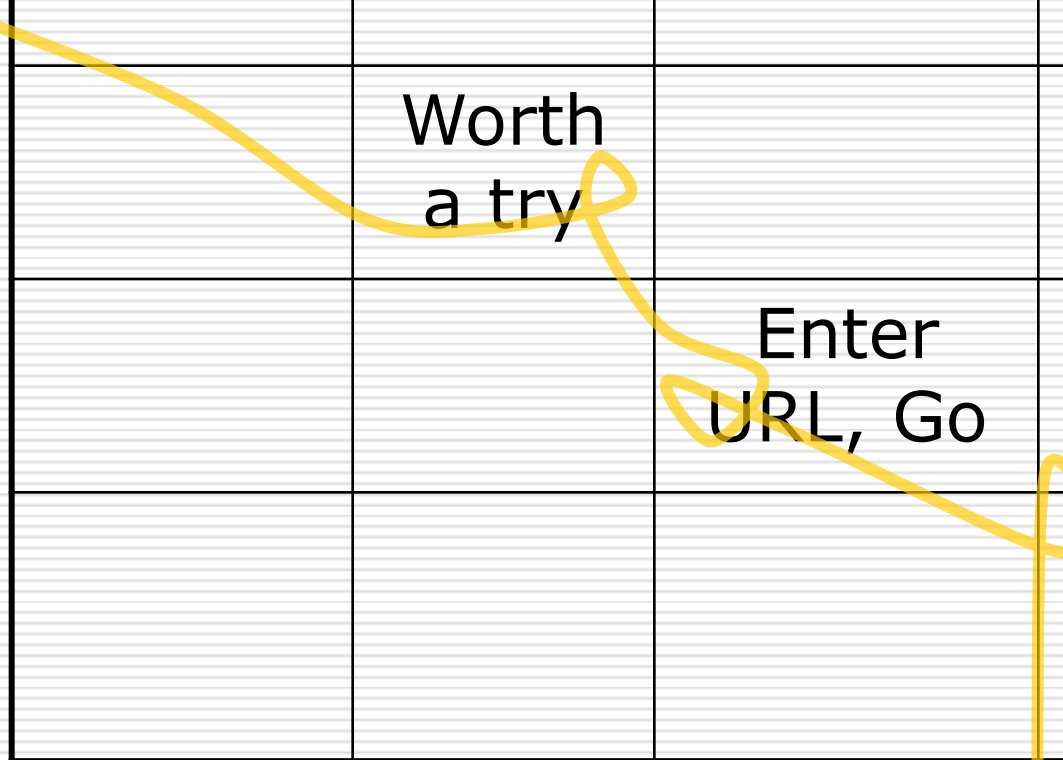
# Van Hire Example

- Web site UX based on commercial usability work by Alan Woolrych
- How do van hire web sites succeed and fail?

The screenshot shows the Practical Van Hire website. At the top, there is a navigation bar with links for 'UK Pricing & Reservations', 'Enquiries', 'Where we are', and 'Travel Links'. Below this is a map of the United Kingdom and Ireland, with various regions labeled. To the right of the map is a list of regions: East Anglia, London, Midlands, North West, North East, Scotland, South East, South West, and Wales. Below the map is a list of airport locations: Aberdeen, Belfast, City/International, Biggin Hill, Birmingham, Brize Norton, Cardiff, Dublin, East Midlands, Edinburgh, Exeter - Airport, Gatwick, Heathrow, Humberside Airport, Inverness, Kerry, Leeds - Bradford Airport, Liverpool - Airport, London City, London, Heathrow, and London Gatwick. On the left side of the page, there is a blue sidebar with the text: 'Please select a Location or area for your rental to start from. Terms and Conditions may be subject to regional variations. All pricing includes VAT unless stated otherwise.' At the bottom of the sidebar, there is an email address: enquiry@practical.co.uk and a link to the Privacy Policy. At the bottom right of the page, there is a logo for 'Driven by our customers' and a small image of a van.

# An Example UEF (Part 1)

<i>User Feelings</i>	<i>User Beliefs</i>	<i>User Actions</i>	<i>System Reactions</i>	<i>Actions in the World</i>
	Worth a try			
		Enter URL, Go		
			Display home page	



# An Example UEF (Part 2 of ...)

<i>Feelings</i>	<i>Beliefs</i>	<i>Actions</i>	<i>Reactions</i>	<i>World</i>
	<b>Can find prices</b>			
<b>Not good place to start</b>				<b>Sally persuades Harry</b>
		<b>Enter post code</b>	<b>Display depots map</b>	
	<b>Nearest depot is on ring road</b>	<b>See the nearest depot</b>		

The image shows a 5x5 table representing a User Experience Framework (UEF). The columns are labeled 'Feelings', 'Beliefs', 'Actions', 'Reactions', and 'World'. The rows contain various user states and actions. Yellow arrows indicate causal relationships between cells:

- An arrow points from the 'Can find prices' belief cell to the 'Not good place to start' feeling cell.
- An arrow points from the 'Not good place to start' feeling cell to the 'Sally persuades Harry' world cell.
- An arrow points from the 'Enter post code' action cell to the 'Display depots map' reaction cell.
- An arrow points from the 'Display depots map' reaction cell to the 'See the nearest depot' action cell.
- An arrow points from the 'See the nearest depot' action cell to the 'Nearest depot is on ring road' belief cell.

# UX Frames

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- ❑ Add heart/soul, bodies and buddies to use cases, task descriptions etc.
- ❑ Interplay of feelings, thoughts, usage actions, system reactions, social interactions and acts in the world
- ❑ Supports reflection on when and why culture matters during interaction
  - Culture drives feelings
  - Culture may shape thoughts
    - ❑ e.g., pre-test doubts about efficacy of cultural markers in multi-ethnic Kenya

# Implications for Remote E-evaluation

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- Track the interplay of cognition and affect
  - how separate are they?
- Understand how different cultures may interpret interaction differently
  - Not just about appearance and language
  - **But cultural markers remain important**
- Understand glocalisation
  - Positive responses to Western cultural markers are likely
  - Need for high design quality
- **Understand your own culture**
  - **Track role of values, feelings and beliefs in UEFs**
  - **Expose (g)local assumptions underpinning good UX (Choi et al. CHI 2005)**

# Conclusions

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- Culture is complex
  - Countries can be even more complex
  - Develop models of your own culture
    - Extend Diamond Model/Add instances
    - Practice with UEFs
- Globalisation valorises both local and western cultural markers
  - Hard to predict the mix in advance
- Need to be well prepared for effective remote evaluations
  - Background readings, Diamond Model
  - Representation and understanding of UXs (UEFs)

# Questions?

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# Kiitos!

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