

Culture and International Usability Testing: The Effects of Culture in Interviews

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Agenda

- Introduction
- Literature Review
- Methodology
- Data Analysis and Results
- Conclusions and Discussion

Introduction

- Global Users and Global Products
 - One size doesn't fit all
 - Globalization and Localization only addresses issues like character sets, date formats, time zones, currencies and colors
 - Cultural characteristics ignored
- Cultural Anthropology
 - Largely unapplied to HCI
 - Wide applications in Management and Advertising

Research

- Usability Engineering Scenario
 - International User Testing
- Usability Assessment Technique
 - Structured Interviews
- Participants from large Power Distance culture
 - Indian Graduate Students
- Interviewers from large and small Power Distance cultures
 - Indian
 - Anglo-American

Research Questions

In international user testing involving participants from a large power distance culture

- Is the interviewer from the same culture as that of the participants more effective in elicitation of responses than the interviewer from a different culture?
- Does culture of the interviewer have an effect on the number of usability problems found by the participants during structured interviews?
- *Does culture of the interviewer have an effect on the number of suggestions made by the participants?*

contd...

Research Questions

In international user testing involving participants from a large power distance culture

- *Does culture of the interviewer have an effect on the number of positive comments made by the participants?*
- *Does culture of the interviewer have an effect on the number of negative comments made by the participants?*
- *Does culture of the interviewer have an effect on the number of culture related comments made by the participants*

Research Hypothesis

Interviewer	Total Responses Given	Usability Problems Found	Suggestions Made	Positive Comments Made	Negative Comments Made	Culture Related Comments Made
Indian	T1	U1	S1	P1	N1	C1
Anglo-American	T2	U2	S2	P2	N2	C2

Null Hypothesis(H0): Hypotheses 1,2,3,4,5,6 are all false

Hypothesis 1: $T1 > T2$

Hypothesis 4: $P1 < P2$

Hypothesis 2: $U1 > U2$

Hypothesis 5: $N1 > N2$

Hypothesis 3: $S1 > S2$

Hypothesis 6: $C1 > C2$

Literature Review

- Definition of Culture

"Culture is the collective programming of the mind which distinguishes the members of one group or category of people from another "

- Geert Hofstede

- Cross-Cultural HCI Research

- Identification of cultural issues
- Internationalization and Localization
- Cultural models not considered

- Culture and Interface Design

- Cultural Impact on Design
- Web design
- Lack of empirical data

contd..

Literature Review

- Culture and Usability Testing
 - Focus Groups
 - global- Software Development Life Cycle
 - International User Testing
- Interviews as Usability Testing Technique
 - Development and Evaluation Stages
 - Open- Ended and Structured
 - Limitations
- Interview Guidelines
 - Social Context
 - Planning
 - Implementation

Hofstede's Five Dimensions

- Power Distance
- Collectivism vs. Individualism
- Femininity vs. Masculinity
- Uncertainty Avoidance
- Long- vs. Short- term Orientation

Comparison: India and USA

	PDI		IDV		MAS		UAI		LTO	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
India	10	77	21	48	20	56	45	40	7	61
USA	38	40	1	91	15	62	43	46	17	29

Power Distance

“ the extent to which the less powerful members of institutions and organizations within a country expect and accept the power that is distributed unequally ”

- Geert Hofstede

- Power Distance influences can be found in family, in workplace, at school and in administration
- International user testing can involve any of these settings

Effects of Power Distance

- Criticism
- Common Ground
- Negotiation
- Loss of Face

Methodology

- Two Phases
- Two Independent Participant Groups
- Two types of Interviewers
 1. Indian Interviewer
 2. Anglo-American Interviewer
- Website Usability Test Tasks

Phase One

- 25 Indian Participants
- Procedure
 - Recruitment
 - Informed Consent
 - Demographic Questionnaire
 - Power Distance Questionnaire
 - Acculturation Questionnaire for Indian Participants

"Acculturation occurs as the dominant host culture absorbs to a certain extent the minority immigrant culture or due to the fact that both the cultures co-exist"

-Suinn, R. M., Ahuna, C. and Khoo, G

contd...

Phase Two

- Controlled Usability Testing
- 16 participants from Phase 1: 8 per each Interviewer profile
- Nielsen's Heuristics used to introduce usability problems
- Independent Heuristic Evaluation of the website
- Procedure
 - 5 Web Navigation Tasks
 - Structured Interview
- Transcriptions of A/V Recordings

Data Analysis:Phase One

- Demographics

Average Age: 24 Years

22 Male, 3 Female

Average Stay in US:20.24 months
(low:6 months , high:30 months)

Average Stay in India: 22 Years

7 States, 7 Languages

contd...

Data Analysis: Phase One

- Power Distance Scale

Average: 19.56 (lowest:11 , highest:27. 6)

Only 6 had Low Power distance

- Acculturation

Average: 2.11 (lowest:1.71 , highest:2.57)

Participants: Representatives of the Indian culture

- Correlation

Not significant.

Data Analysis: Phase Two

Interviewer	Total Responses Given	Usability Problems Found	Suggestions Made	Positive Comments Made	Negative Comments Made	Culture Related Comments Made
Indian	T1	U1	S1	P1	N1	C1
Anglo-American	T2	U2	S2	P2	N2	C2

Total Replies = T, Usability Problem = U, Suggestion = S

Positive Comment = P, Negative Comment = N, Culture related Comment = C

Reply to the Website Rating Question = R = 1, Repetitions = Rep

n (X) = Number of replies of Kind X made

$U \cap N$ = Negative Comments that are also Usability Problems Found

$$n(T) = n(U) + n(S) + n(P) + n(N) + n(C) + R + RR - n(U \cap N)$$

Data Analysis: Phase Two

- 8 Participants per each Interviewer
- All participants from Phase 1
- 7 Male, 1 Female per group
- Groups do not differ in PD or Acculturation (p-values are .28 and .55 respectively)

Data Analysis:Phase Two

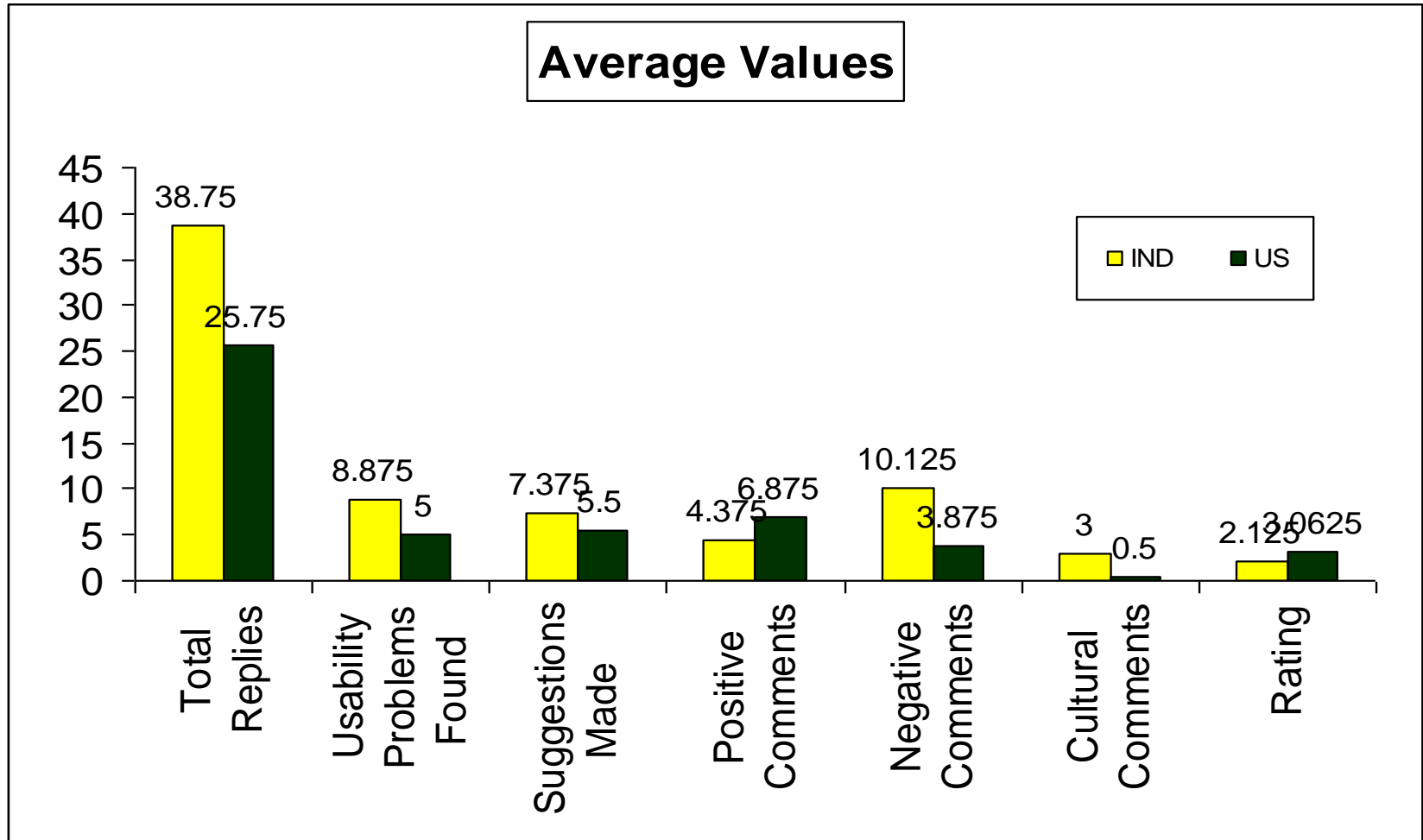
Definitions

- **Total Replies:** Sum total of all responses made by the participant during the structured interview
- **Usability Problem:** Interaction design flaw or a user difficulty directly associated with an interaction design flaw
- **Suggestion:** Subjective preference of the participant to the implemented design choice/tradeoff
- **Positive Comment:** Participant's subjective approval of a design choice/ tradeoff
- **Negative Comment:** Participant's subjective disapproval of a design choice/ tradeoff
- **Culture related Comment:** Participant's reference to his/her native culture, country, customs, symbols, rituals and tradition

Data Analysis:Phase Two

- Transcription
- Independent Evaluations
- Statistical Method: Tallying
- Overlap

Summary of Phase Two Results



ANOVA Results:Phase Two

p-values

Total Replies	0.003142
Usability Problems	0.000509
Suggestions	0.026023
Positive Comments	0.021164
Negative Comments	0.001998
Culture Related Comments	0.049173
Website Rating	0.008309

Conclusions

- *All Hypotheses Verified*
- Research Methodology
- Empirical Proof that Cultural Effects Exist
- Large Power Distance Users
- Structured Interviews
- Interviewer Profile
- Subjective Preferences
- Limitations

Looking Ahead...

- Other Usability Assessment Techniques
- Other Dimensions
- Other Cultural Models
- Interaction Techniques
- Navigation Strategies

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Questions?