Supporting Ethnographic Studies of Ubiquitous Computing in the Wild

Andy Crabtree, Steve Benford, Chris Greenhalgh, Paul Tennent, Matthew Chalmers and Barry Brown

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Ethnography and UbiComp

• UbiComp Environments
  – Are characterized by ‘fragmented’ interaction
  – I.e., interaction is distributed across an array of devices and online environments that exploit invisible sensing systems
  – The challenge of understanding interaction is one of reconciling the fragments to develop coherent descriptions for analysis
  – ‘Record and replay’ provides a means of doing this
Ethnography and UbiComp

• Four Experiences of RnR
  - Can You See Me Now? (basic text logs)
  - Uncle Roy All Around You (text logs, audio files, and video)
  - Savannah (video and virtual environment)
  - Treasure (video, audio, mobile devices, virtual environment)
Ethnography and UbiComp

• Can You See Me Now?

Log allowed is to examine arrangements of collaboration between players

• But not moment-by-moment interaction between runners and players
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- Uncle Roy All Around You

- Allowed us to examine moment-by-moment nature of collaboration between street players and online players

- But very labour intensive ... all manual
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- Savannah
- Aligned virtual model with video
- Allowed us to understand moment-by-moment character of interaction
- But synchronization still manual
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• Treasure

• Allows data from multiple sources (PDAs and video) to be synchronized and viewed in relation to gameplay map
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- Increasingly sophisticated tools that enable us understand interaction in situations where
  - Users are mobile
  - Interact via small displays
  - Interactions are mediated by invisible sensing systems
  - And are distributed across other applications, such as virtual environments
  - Already of benefit to analysis
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• Problems
  – Still a lot of technical challenges to address - e.g., representing delays and disconnections
  – Not usable by ethnographers yet
  – And don’t support ethnographic practice
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• Working out solutions (not in paper)
  – Current work focuses on developing tools to support ethnographic practice
  – In particular a Replay Tool that enables ethnographers to extract salient features of logs and combine them with other resources
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- Replay Tool: Data Goggles
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• Replay Tool: Synchronization
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• Replay Tool: Annotation & Description
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• Extending RnR
  – Need to support coding and statistical transformations of qualitative datasets to support a broad range of research practices that exploit ethnography

• Work being explored in conjunction with e-Social Science Research Node at Nottingham
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• CfP Journal of CSCW, Special Issue on e-Research
  – Deadline 1st December
  – Submit to Marina Jirotka
  marina.jirotka@comlab.ox.ac.uk