AUNT-SUE Research Symposium

Capturing Fear of Crime: Mapping Local Knowledge

LONDON metropolitan university

13th January 2010 – 15:30 – 16:00

Capturing Fear of Crime: Mapping Local Knowledge

- Outline
  - Predicting Fear of Crime
  - Where do people feel scared?
  - Validating the Predictive Maps
  - Further Work

Predicting Fear of Crime

- Prospect/Refuge Theory
  - The level of fear felt depends on two factors:
    - Prospect – how far ahead you can see and how wide is the view
    - Refuge – how many potential hiding places there are for people to jump out from

Predicting Fear of Crime

- Street Environment Index
  - Combines elements of New Urbanism and Broken Windows Theory
    - Broken Windows: unrepaired broken windows lead to other broken windows as they are a sign that no one cares. The degeneration of an area leads to a withdrawal of people from the street, increasing the opportunity for crime

Predicting Fear of Crime

- Street Environment Index
  - Combines elements of New Urbanism and Broken Windows Theory
    - New Urbanism: the presence of people on the street will deter criminals and reduce the opportunity for offending.

Predicting Fear of Crime

- Both theories have been implemented in a GIS and the concept of Isovists used to generate surfaces to ‘predict’ locations of fear

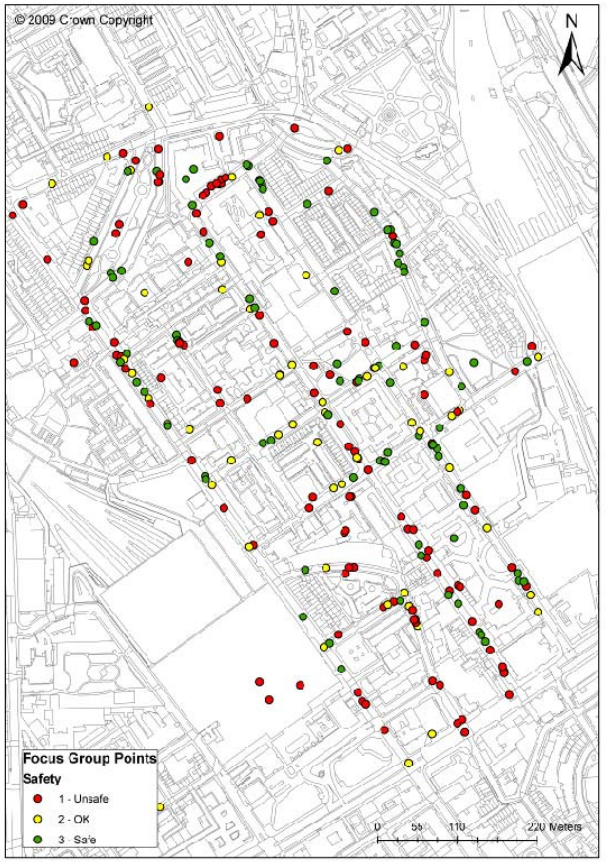
Where do People Feel Scared?

- Four Focus Group sessions held with residents in Somers Town

Group	Number of Participants
Focus Group 1: Single Parents	6
Focus Group 2: Women under 27	4
Focus Group 3: Elderly	4
Focus Group 4: Bangladeshi men under 27	5 (excluded from analysis)

Where do People Feel Scared?

- Each participant was asked to indicate on a map where they feel safe, neutral and scared
- Total of 182 valid points collected:
  - 90 ‘scared’
  - 43 ‘neutral’
  - 49 ‘safe’



Where do People Feel Scared?

- Each participant was also asked, where appropriate, to participate in a walk-about in the area, during which they made comments on the local environment

Where do People Feel Scared?

- An Inverse Distance Weighting Interpolation was used to create a ‘surface of fear’ as expressed by the Focus Group participants

Where do People Feel Scared?

- Surface of Fear
  - Due to the uneven distribution of the Focus Group points, the map is rather patchy
  - Additionally, some contradictory cases were encountered, when one participant rated a location positively and another negatively
    - These were left as they reflect the view of the community

Validating the Predictive Maps

- Reclassification
  - All three maps were reclassified into three classes using an equal-interval classification
  - The use of the equal-interval classification allows the resulting map to clearly highlight the range of ‘safe’, ‘neutral’ and ‘fearful’ areas on each map without being biased by the distribution of the data

Validating the Predictive Maps

- Subtraction
  - The reclassified Focus Group surface was then subtracted from the reclassified SEI map and the reclassified Prospect/Refuge map
  - The results were analysed to identify areas of agreement and disagreement

Validating the Predictive Maps

- SEI (New Urbanism and Broken Windows)
  - 45% match between the surfaces

Validating the Predictive Maps

- SEI (New Urbanism and Broken Windows)
  - 24.64% match for negatively weighted areas
  - 18.15% match for neutral areas
  - 2.85% match for positive areas
  - This may be due to the predominance of negative values on the FG Map:
    - 51% of FG surface was negative
    - 30% of SEI surface is negative

Validating the Predictive Maps

- Prospect Refuge
  - 46% match between the surfaces

Validating the Predictive Maps

- Prospect Refuge
  - 34% match for negatively weighted areas
  - 11.71% match for neutral areas
  - 0% match for positive areas
  - This may be due to the predominance of negative values on the FG Map and on the P/R Map:
    - 51% of FG surface was negative, 30% neutral and 19% positive
    - 60% of P/R surface is negative, 39.8% neutral and 0.14% positive

Validating the Predictive Maps

- In both cases, % match obtained is higher than would be obtained through a random process
- However, anecdotal evidence from the focus group participants highlights the importance of local knowledge:
  - "Fights between school boys"
  - "Very high density of people in the morning and between 3 and 3.30pm"
  - "Youths gather here and abuse passers-by"

Further Work

- Current surface of fear generated by the Focus Groups is a bit ‘patchy’ – need to improve this by creating a combined map reflecting a consensus view for the community
- It is also possible to measure fear using avoidance behaviour – where do people not walk, even though it may provide the shortest route to their destination?
  - This could potentially be measured by using GPS traces of residents’ movements

Further Work

- The mechanism used for the SEI is very flexible and features to represent ‘local knowledge’, with appropriate weightings, could also easily be added
- Need to investigate the importance of familiarity with an environment – do urban features become more important when you are a stranger to a location?

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Thank You – Any Questions?