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Response to Pezzuchi 2008, 'A Brief Commentary on "The Utility of Hotspot Mapping for Predicting Spatial Patterns of Crime"'. Security Journal.

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Gaston Pezzuchi raises some useful points for consideration. In reply,

- We acknowledge that there are other techniques that can be used for hotspot mapping, but as we state in the opening section of the paper we chose to test against techniques that were well known and had been in popular use for some time. Hence our decision to include the STAC spatial ellipses technique, using CRIMESTAT to generate the results from this method. We also acknowledge that there are other techniques that generate ellipses, but for sake of brevity we only refer to 'spatial ellipses' throughout the paper after making clear reference in an opening section that the particular technique we were referring to was STAC.
- By reporting on the results from what we considered were the most popular techniques and explaining the methodology we applied we hoped that this would encourage others to repeat the experiments for other techniques. We are aware that since the paper has been published others are indeed applying our methodology to compare results generated using nearest neighbour hierarchical clustering techniques. We hope that they too will publish their findings.
- We acknowledge that there are differences between cluster detection techniques and other representation methods. Our paper, however, was not solely about cluster detection techniques but was about hotspot mapping techniques that generally, in practice, include both.
- We apologise for the confusion we may have generated when explaining the thematic mapping techniques. These are indeed choropleth maps, and we point the reader in our paper to a number of references that describe these techniques in more detail. We felt it unnecessary to repeat this detail in the paper.
- We did not intend to offer any bias towards the Hotspot Detection software solution. The kernel density estimation (KDE) algorithm that it uses is the same as that for generating KDE maps in CRIMESTAT. We merely used Hotspot Detective because it is a software solution that is in common use and because it provides the user with default values for cell size and bandwidth. CRIMESTAT does not offer similar defaults for testing.

- One solution for deciding upon a suitable KDE bandwidth is to use the adaptive bandwidth approach. The research we reported on applied the more common (in practice) method of a fixed bandwidth (e.g. using the default bandwidth in Hotspot Detective or by entering in the bandwidth following guidance reported in other research). We have completed additional research that fully tests the impact of bandwidth and cell size on KDE results and intend to publish these. We also intend to repeat our methodology using a KDE adaptive bandwidth approach, but also encourage others to repeat our methodology using this approach too.
- The quantile approach for determining thematic threshold values was chosen because it is a common range method that is used in practice. However, it is not without its problems and we encourage others to repeat our methodology using other thematic range methods and publish these results.
- Without providing specific details we are not certain what the other concerns are with the “forecasting power, the temporal variable and similar things”. However, we do encourage others to strengthen and add to the research we have reported on by using the paper as a foundation for them to develop additional research on the subject. We are encouraged by the debate the paper has generated and on reports that many have found the results useful and a basis on which to test other techniques.