



## Questioned Documents Section – 2006

### J10 Graffiti Tagging Behavior and Its Forensic Identification

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After attending this presentation attendees will have gained information on the graffiti subculture and in particular tagging behavior. Attendees will have an understanding of the relationship between forensic document examination and the forensic identification of graffiti tagging.

This presentation will impact the forensic community by demonstrating applications to the field of Forensic Document Examination where empirical studies may result in improvements to current method and a possible mechanism to determine the probative value of opinions expressed on graffiti tags.

The financial burden of graffiti tagging across the world is colossal. It has been estimated that world wide sixteen million square feet of graffiti is removed every year. Keep South Australia Beautiful estimates the costs of removing and attempting to eradicate graffiti to the Australian community is approximately \$200 million annually. In 1992 the City of Los Angeles spent more than \$15 million cleaning up graffiti while the Southern California Rapid Transit District spent \$12 million. These figures do not include volunteers' time or the costs to home owners and private businesses. According to the National Graffiti Information Network, graffiti eradication costs the American public \$4 billion per annum.

As well as the financial burden there is a human cost. In New South Wales, Australia in 1986 four people were killed attempting to tag trains. Communities can become fearful and concerned about their safety whilst using public transport and the removal of graffiti can cause delays. Graffiti can also have a powerful negative impact on property value.

In many countries forensic document examiners (FDE's) are involved in the comparison and analysis of graffiti tags in situ, in sketchbooks and in photographs. However the identification of graffiti tags by FDE's has remained virtually unresearched in spite of evidence being led in courts of law around the world.

Traditional validation studies on handwriting and signature expertise are unlikely to offer significant support to the claimed expertise in this area due to graffiti being much larger in size to normal handwriting and the use of atypical writing implements (for example modified spray cans) and writing surfaces (which are usually vertical rather than horizontal).

The aims of this research are to determine whether construction features alter oversize conditions, whether tags scale proportionally oversize conditions, the ability of taggers and lay people to simulate a given tag, spatial consistency between tagger's simulations and lay people's simulations, and the ability of FDE's compared to lay persons in determining authorship and process of genuine and simulated tags.

This study involved the use of six graffitiists whom each gave samples of their tag at a number of different sizes. The sizes ranged from a 'normal' handwriting sized sample as may be found in a sketchbook up to an extra large size representing a wall. The smaller sizes were tagged with a black ball point pen, the medium sizes were tagged with a black marker pen and the larger sizes were tagged with spray paint.

Two of these tags were chosen and four graffitiists and eight lay people then attempted to simulate each of the tags a number of times on two different sized pieces of paper. One size was completed with a black marker pen and the larger size was completed with spray paint.

The results were analyzed using a software program named Matrix Analysis and spatial consistencies and inconsistencies were calculated.

A combination of genuine and simulated tags were compiled and distributed to fifteen forensic document examiners and fifteen lay persons to establish claimed expertise in forensically identifying tags. Major outcomes of the research will be discussed at the presentation.

This research has applications in the prosecution of offenders and by being able to analyze the spatial consistencies between any number of samples of a given tag, different offences may be able to be linked together or discarded with a high degree of certainty.

The validation trial completed by FDE's and lay people will provide empirical data on the claimed expertise of FDE's in determining authorship and process. This may validate and contribute to the weight given to any opinion evidence delivered in a court of law.

#### **Forensic, Graffiti, Identification**