Misinterpretations in Blood Pattern Analysis

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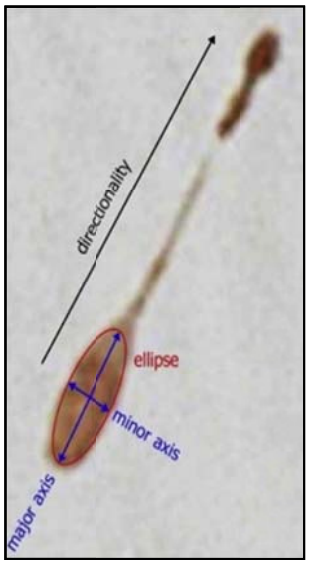
At a crime scene where a violent crime or death has occurred latent and patent bloodstains are often left behind. The analysis of these stains will provide forensic scientists with key information about the sequence of events that had occurred at that scene, for example through the use of calculations and reconstruction events, it will provide details about the relative positions of the victim and assailants, the direction of travel, impact force etc (as shown in figure 1).



This information will be presented in a court of law as evidence, and therefore it is essential that inaccuracies in measurements made at the scene are minimised.

Blood is a non-newtonian fluid, and its physical properties such as viscosity, wettability and surface tension could have an effect on the types of blood patterns left at a scene. Previous research has shown that the physical properties of blood are altered when anticoagulants have been administered[2]. This could potentially lead to an incorrect case assessment and subsequent miscarriage of justice. However, there is a limited amount of studies that have been ned conducted on victims that have been administered prescription or drugs of abuse. Thus, the aim of this research will be to analyse the effect prescribed and illicit drugs can have on the physical properties of blood, and subsequently the effect that this can have on the bloodstain patterns produced at a reconstructed crime scene.

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[1] Ursula Buck et al, (2011), Forensic Science International, 206; Issues 1–3, pgs 22-28
[2] Bethany Larkin et al, (2012), Analytical Methods, 4,pgs 721-729