

**Commentary on:** Ristenbatt RR. Review of: *Bloodstain Pattern Analysis With an Introduction to Crime Scene Reconstruction*. 3rd ed. J Forensic Sci 54;1:234.

Sir,

We are writing in response to the review by Ralph R. Ristenbatt III, MS of our book, *Bloodstain Pattern Analysis With an Introduction to Crime Scene Reconstruction, 3rd Edition*. He criticizes the book's content in a number of ways including: an informal style of speech (paragraph 2), apparent paucity of footnotes (paragraph 3), our employment of certain vocabulary, our references to conceptual principles derived from archaeology (paragraph 6), and our perceived failure to capture the "essence" of bloodstain pattern analysis as a science (paragraph 7).

With regard to the writing style we would simply point out that our target audience consists of those who perform bloodstain pattern and crime scene analysis each day as part of their professional duties. We intend to convey bloodstain pattern analysis via simplified explanations, examples, and even colloquialisms. We intend it to be easily read, and we hope that it will be used. We sought to introduce techniques and methodologies that we the authors have found effective in the field, which we hope will aid those who perform bloodstain pattern analysis.

With regard to some of Mr. Ristenbatt's specific comments:

*"Though it is stated that BPA has a 'rich history,' only 25 references are cited in this chapter; of these, less than five are from refereed scientific sources."*

We discussed 17 historical articles or books published between 1856 and 1960. We also mentioned nine contemporary books or scientific articles. Of the 17 historical documents, six were reference books authored by medical doctors and recognized scientists of their time. Eight were published in the scientific journals of the time. One reference is a written version of, arguably, one of the most significant bloodstain pattern presentations ever delivered (Congres De Medicine Legale in 1939 by Baltzhazard et al.). Additionally, we discussed Piotrowski's effort published at the University of Vienna, which may well be his Master's thesis and we mentioned Dr. Goringher's Master's thesis.

Is it Mr. Ristenbatt's position that the forensic science community fault, and thus ignore, Baltzhazard or any other pioneer from this discipline because they did not appear in a "refereed scientific source"? If one accepts that only a finding vetted by a contemporary "refereed scientific source" has value, then in effect we must reject the largest part of the history of science. We are not presently willing to do that and in our humble opinion, this chapter more than adequately demonstrates the richness of the subject matter.

*"excluding the invited authors' chapters, less than 185 references are cited with fewer than 15 originating from refereed scientific journals."*

Excluding our invited authors, there are 185 citations. Eighty-three are from peer-reviewed scientific journals, published theses (which are by definition, "reviewed"), or scientific reference books (which must be considered as "reviewed" by their very definition as reference texts). Thirteen citations refer to Baltzhazard's research, which, as explained above, is of significance to the development of

bloodstain pattern analysis. An additional seven are research presentations at scientific association meetings by authors other than us.

*"incorrect assertions that ... surface tension is the 'force holding the blood mass to the object'."*

In the context presented on page 128 (the creation of cast-off spatter), we discuss the creation of a small blood mass from the blood adhering to another object. We are not discussing adhesion properties (why blood on an object sticks to it), but only the interactions occurring within the liquid mass. Could this have been better worded? Certainly, but in this context, liquid cohesion/surface tension is certainly in play connecting the droplet's mass to the mass of liquid on the object.

*"Despite awareness concerning contamination and safety issues, one figure depicts an ungloved hand positioning a scale near a bloodstain pattern."*

In a book of over 350 figures, we use a single photograph of an ungloved hand at a scene. We include it because it is an outstanding example of the radiating effect observed in impact spatter. As Mr. Ristenbatt points out, the photograph also portrays a hazardous procedure. We thank him and will resolve his concern by adding a comment to the figure caption in the next edition.

*"Scientists have previously described terminology associated with drop formation and droplet impact; thus, new terms are unnecessary."*

The terms in question were described at an International Association for Identification conference in 1990. They were included in the 1st Edition of this book in 1997. In the 1st Edition and in every edition since, we clearly state "some authors may object to the terms." But, here, as in the other examples from Mr. Ristenbatt's critique, we hope that interested readers will be able to identify and appreciate the mechanism being described.

*"The declared resemblance of archaeology to crime scene reconstruction is overstated. Although some archaeologists may be concerned with 'reconstructing' aspects of history, their true objective is the appraisal of past cultures, not discrete events."*

As we developed our ideas of how layering, continuity, association, and chronology were utilized in crime scene analysis (adapting many of these from archaeology), we sought intellectual guidance and advice of a respected professor of archaeology at a major university. As a scientist engaged in archaeology, he helped guide our beliefs and obviously did not share Mr. Ristenbatt's position.

We described these very concepts in an article in the Journal of Forensic Identification (a "refereed scientific journal") in 2007. Following publication Mike Hochrein, a respected forensic science author in his own right, wrote saying: "As a recovering academic and contract archaeologist you have no idea how it warmed my heart to read about terminus postquem and Steno's laws in the context of a crime scene reconstruction article. You guys have hit the nail on the head, and have helped explain why the transition for me, from archaeological theory and field work to criminal and crime scene investigation was so seamless."

Perhaps if Mr. Ristenbatt had articulated his archaeological experience and explained himself better, we might be more convinced by his argument. At present we are not.

*“There is no doubt that bloodstain pattern analysis is a science. Unfortunately, the authors have failed to capture its essence.”*

Scientists, far more learned than your humble authors, have previously described that the concept behind any science (or as Mr. Ristenbatt describes it, the “essence”) is nothing more than the methods employed in the science. We do some operation or measurement because there is a principle within the science guiding us to do it. We describe in detail both the principles and methods employed in bloodstain pattern analysis; thus we feel we have captured the “essence” of the science as effectively as any other author to date.

Science is the observation, experimental investigation, and theoretical explanation of phenomena. We, along with the many authors we mention, have spent a significant portion of our adult lives doing exactly that for bloodstain pattern analysis. We have shared our beliefs and research in published articles and books. We have never been afraid to hold our beliefs up to scrutiny nor assumed that they could not be refined or in some manner better described. We contrast this effort to Mr. Ristenbatt’s.

In the 12 years since he began teaching bloodstain pattern analysis, he has published no independent research nor authored any book on the subject. Yes, he wrote a case study, has written numerous commentaries on other authors’ work, as well as authoring a master’s thesis in chemistry; but these are not the kinds of research to which we refer. We ask that he hesitate no longer. He should feel free to publish all of his “scientific” research on bloodstain pattern analysis, detailing what he thinks the true “essence” of this science is. If he would publish these beliefs then we could all benefit and gain from his insight. We welcome his personal efforts to develop this field. At the very minimum, in publishing, he may assist us in increasing the number of citations included in the next edition of this book.

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