Prehension and Hafting Traces on Flint Tools: A Methodology

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Use wear research is based upon a very simple principle—that friction between two mediums results in traces on both mediums. Thus, the frictions within both hand-held and hafted tools are logically equally real and should result in traces. Yet up to now there has been no experimental research into the creation of such traces, despite being acknowledged by Semenov's pioneering research (1964: 14).

Prehension and Hafting Traces on Flint Tools: A Methodology relies upon Rot's doctoral research performed during 1997–2002 at the Prehistoric Archaeology unit at Katholieke Universiteit Leuven (Belgium) under the direction of Pieere M. Vermeersch. The subject matter is as the title suggests, a methodology allowing for the identification and interpretation of prehension (referring to a hand-held use of tools) and hafting traces on flint tools, two aspects of a flint tool which are often ignored. The book is composed of acknowledgements, eleven chapters, two annexes, and an additional CD-ROM containing additional data, tables, and images. There are 289 figures, 204 plates and a short glossary explaining the key terms.

The book begins by highlighting the problems with this area of research. Firstly, that no hafting experiments have been undertaken on a systematic basis; previous attempts remain unsystematic and lack sound methodologies. Secondly, that prehension is often neglected in favour of focussing on the (supposed) working edges. With the skepticism that microwear research has received, it is not surprising that these areas of interest did not occur sooner. Researchers are more often than not drawn to the more obvious areas of use (the working edges), so it comes as no surprise that prehension and hafting wear has never been a priority. By highlighting these problems early on, Rots clearly and concisely identifies the niche that this research fills.

Rots then provides an overview of the history of both prehension and hafting studies, before ending the introduction by highlighting the importance of this study for archaeological interpretation, specifically by reinforcing the notion that the dynamics of hafting have a big impact at each stage of the life cycle of the tool (raw material procurement, haft manufacture, hafting procedure, tool use, tool manufacture, re-hafting, tool recycling, and discard) and strongly influences the archaeological record.

In order to overcome the limitations of previous microwear attempts, Rots' methodology is extensive, covering 29 pages. This second chapter—Research Methodology—covers the research strategy, hafting arrangements: terminology and classifications, hafting materials, experimentation, and the methods of analysis. The experiments were undertaken in collaboration with CENTREP (Centre d'Études des Techniques et de Recherche Expérimentale en Préhistoire). All of the experimental lithics were freshly knapped, with the emphasis on task completion rather trace production. While this aspect may have been overlooked in earlier experimental studies, it is unclear what the differences would be in tool manufacture. Maybe I am just being picky but my own suspicions (based on a little experience in tool manufacture) are that the differences in tool morphology would be minimal; however, Rots' approach is definitely applauded and eradicates any potential difference.

In Chapter 3 (Prehension and Hafting Traces: dream or reality?), Rots submits a dialogue of a series of questions and answers regarding the existence, the stages of creation, and the interpretability of distinguishable traces. After a healthy Yes vote on all accounts, the stage is set for Rots to discuss, in the next four chapters, the main variables in prehension (Chapter 4), the hafting traces (Chapters 5 and 6) and secondary variables in hafting traces (Chapter 7). Material worked (Chapter 4) is the main area of research that the majority of microwear research tends to focus upon. Here, Rots identifies three distinct tool uses, representing three different levels of dirtiness—schist working, firemaking, and hideworking—and concludes with a summary of the main characteristics of wear.

The four most influential variables in hafting traces are discussed in Chapters 5 (use motion and material worked) and 6 (hafting material and hafting arrangement [including resin, wrapping, and binding materials]). It appears that during some of the experiments, the quantity of experimental tools upon which the conclusions are drawn are rather minimal (only two tools were used for hideworking and firemaking). Whether this is due to the wide ranging experimental practices of this research or to the researcher having such faith in the conclusions, when it comes down to it, it may somewhat weaken the argument.

Chapter 8 (Indirect Evidence of Hafting) is a supporting chapter to interpreting traces, proposing that fractures on a tool can be supportive, or at least suggestive, evidence of hafting, with intensive scarring being the most distinctive trait. Use wear trace distribution also is tested, identifying that it is possible to interpret hafting use (based on a centralized distribution), but that hand held use is less certain (based on the distribution of traces).

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Chapter 9 (Blind Test) provides the results and short discussions of the final blind test of ten experimental pieces. These results have been previously published (Rots et al. 2006). This chapter also briefly summarizes the effectiveness of the three different interpretative methods (macro, low power, high power), indicating that all three methods (even the macro approach) allow for fairly decent interpretations (albeit in areas of traces), thus concluding that a combination of different methods should be adopted for a higher success rate.

An invaluable Discussion follows in Chapter 10, which enables the reader to think, firstly, why they should be interested in hafting studies; secondly, how one would go about examining prehensile wear in practice; and, thirdly, what to record (which is absolutely perfect for students in England where places to learn experimental use wear analysis are few and far between).

My only qualms with the book are the images, which have been shunted to the back of the book. The tables are located appropriately throughout the chapters and I believe the images should have been placed throughout the book too. By situating the images at the end, the reader is forced to continuously flip back and forth. If separating the images was necessary in this fashion, perhaps these images should have been put on the disc. The disc, in fact, is a fantastic addition to the book, allowing the reader to view images of the experimental hafted tools, the fractures occurred, the tool side-hafted, and the experimental settings.

In sum, this work is ground breaking—hafting and prehension traces are indeed interpretable. Rots' later work (Rots 2005, 2009, to name but a few), utilizing the methods outlined in this book, demonstrates the significant contributions that this methodology allows, when applied to archaeological assemblages. Rots' methodology is sound and will overcome skeptics. This book is an exceptional reference book for academics and will be of interest primarily to those wishing to pursue wear studies and to experimental practitioners. Any students wishing to not just discover how stone tool was used, but how to set up experiments regarding lithics are encouraged to pick up this text.

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