Iron Age Hillfort Defences and the Tactics of Sling Warfare

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Abstract

The defensive function of Iron Age hillforts has been disputed, on the grounds that they are poorly suited to military purposes and because recent models of Iron Age society emphasise symbolic display, community-building and boundaries, rather than warfare. Although excavation of hillfort interiors provides evidence of varied functions, these do not explain the features of the surrounding banks and ditches: in this study, the functions of the enclosing works are argued to be distinct from the functions of the hillfort interiors.

Pebbles found in large numbers at hillforts are interpreted as sling-stones, slings having been widely used as weapons in ancient times, and several writers have suggested that Middle Iron Age modifications to hillfort defences improved their capability against attack by stoning. However, there is little information on sling performance in the context of hillforts.

An experimental examination of these issues is described. Seven slingers cast a total of 1278 stones at a target placed in 14 positions on the defences of a hillfort, representing attack and defence of a univallate rampart and of a bivallate dump rampart. The most practiced slinger had hit-rates of 29% against a man-sized target and 68% against a target representing a group of six attackers. His effective range was over 70m. Attackers scored more hits in the univallate case, and defenders in the bivallate case. Distance to target was the main predictor of hit-rate, height being advantageous only at marginal range. Observations include the need for context-specific training and that dead ground in the outer ditch was not a defensive disadvantage.

The results were used to model several tactical scenarios, including direct assaults and barrages of stones. In general the defenders had the advantage, especially in the bivallate case, the time of exposure to defensive slinging being a key factor. Speed, surprise and superior slinging effectiveness on the part of attackers could overcome the disadvantage, but the availability of reinforcements would determine the outcome in favour of the defence in the bivallate case. Other factors, including shields, parapets and entrance designs are discussed, as are methodological issues and problems of interpretation.

The study concludes that defence remains the most persuasive functional explanation for the features of the enclosing works of hillforts.

Preface

This book is derived from a Master of Research in Archaeology dissertation for the University of Winchester. Creating new knowledge through research was an objective of the work, leading to the need for some kind of archaeological field work to qualify it as research, and hence to an experimental study which made a one-person investigation practicable.

Having worked on human performance studies in a former career, I was able to apply old skills to the conduct of such an experiment, and I hope that the methodological approach is not only novel (I have found nothing similar in the literature on hillforts or slinging) but also will provide ideas for other experimental archaeologists. For this reason, the appendixes include exhibits of the documents used in the planning and conduct of the experiment and full details of the results.

Although I refer to it above as a one-person investigation, it was of course dependent upon help from others. I am very grateful to those who supported me by providing access to the site and especially to the participants who turned up there to trial their expertise as slingers.

The cover image shows a slinger on the main rampart at Hod Hill. Photographs are by the author except where specified.

Acknowledgements

This work would not have been completed without the support of numerous individuals and several organisations. I am very grateful to everyone who helped me in understanding hillforts or with the experiment, and wish to acknowledge the following help in particular.

Dr Nick Thorpe and Dr Keith Wilkinson, of the University of Winchester Archaeology department, provided encouragement and advice throughout the conduct of this investigation.

I am grateful to the National Trust and their Property Manager, Rob Rhodes, for permission to use Hod Hill. The NT Archaeologist, Dr Martin Papworth, gave much-appreciated support in arranging the access and made helpful comments on the experiment plan.

Matthew Lovering and Roy Harrison gave time and energy to assist the survey and assault time trial at Hod Hill and acted as sounding boards during the planning.

Expert slingers from *Slinging.org* provided much information and not a few opinions on all matters relating to slings, visited a few hillforts with me, and cast the majority of the stones in the experiment. I am indebted to 'David Morningstar' and especially to 'Curious Aardvark,' without whose contributions the experiment would have flopped.

I am also grateful to *Brigantia* for providing several volunteer slingers, and especially to Matthew Curl, who organised their participation as well as slinging stones himself.

The Hillfort Study Group gave me encouragement and the opportunity to debate with real experts in the field; literally in fields on several occasions. Among them I must especially thank Dr Jon Finney, whose work was part of the inspiration for this study and who also participated in the experiment, and Professor Gary Lock, who first introduced me to the debate on the function of hillforts and who provided the opportunity to excavate at Moel y Gaer.

A number of authors and institutions have been generous with permission to reproduce figures from their work; I am grateful to Grahame Austin, Ann Boddy, Ian Brown, Margaret Brown Vega, Barry Cunliffe, Philip Dixon, Jon Finney, JD Hill, Alex Johnson, Val Maxfield, Christine McDonnell, Kate Owen, Cynthia Poole, David Stewart, Sami Taha and Anthony Weir. Nathalie Barrett generously

prepared the maps and plan, from open-source data; I am very grateful to her for the time and expertise she spent on this.

Finally, my wife Elizabeth was patient and supportive as always, through many hours on the hill or at the keyboard.

Chapter 1: Introduction

'THE RULES OF DEFENCE HAVE BEEN THE SAME THROUGHOUT ALL TIME, AND ARE EXTREMELY SIMPLE' (LANE FOX 1877: 501).

Hillforts are the most prominent surviving monuments from later prehistory in Britain, but over a century of investigation has not led to them being fully understood; their size, numbers and variability have produced a variety of conflicting interpretations.

This investigation examines a specific area of debate: the function of the surrounding banks, ditches and entrances that identify Iron Age sites as hillforts. The study also focusses on sling warfare, because frequent finds of sling-stones at hillforts suggest that slings were used in their defence. A number of authors, including Wheeler (1943), Collis (1975), Avery (1993a) and Finney (2006), have proposed that some hillforts were developed in the Middle Iron Age to provide improved defence against attack by slingers. Others, notably Bowden and McOmish (1987; 1989), Hill (1993; 1996) and Lock (2011), dispute this interpretation on the grounds that hillforts were unsuitable for defence, or based on contrary views about Iron Age society and warfare.

Figure 1 shows the distribution of the major sites in southern Britain. As the number of hillforts in Britain runs into some thousands and their use spanned almost a millennium, variations in their construction were inevitable, leading to some uncertainty as to which monuments should be included in the category (for example, many are not on hills). As this study is primarily concerned with hillfort defences, no Iron Age site enclosed by a substantial bank and ditch is excluded.

The debate on the defensive suitability of the enclosing works includes little tactical analysis, partly because of the lack of information concerning the performance of slings in the context of the defence of hillforts; the experimental part of the study attempts to fill these gaps.

The characteristics and development of British hillforts and more specifically of hillfort defences are summarised in Chapter 2, followed by a review of the debate on their function. A key point is that the function of the defences can be independent of the varying functions of the hillforts themselves.

The uses of slings and their capabilities as weapons are covered in Chapter 3, including evidence from classical authors and from finds at hillforts as well as experimental evidence for sling performance.

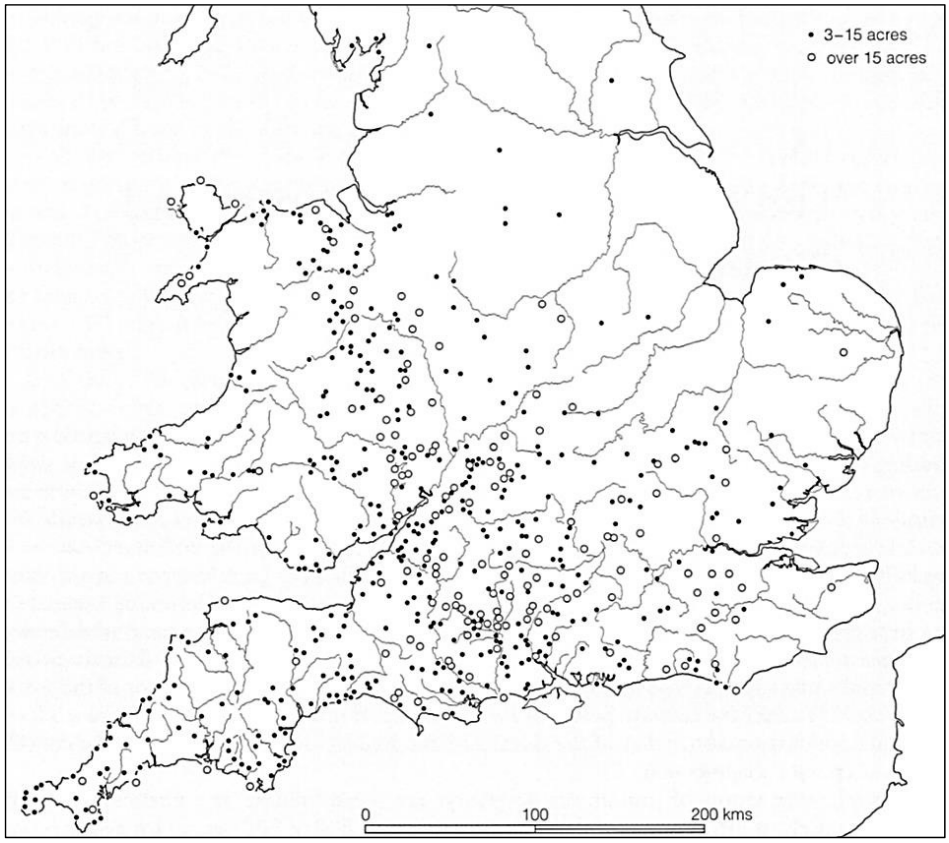

Figure 1. Distribution of Larger Hillforts in Southern Britain (from Cunliffe 2005, figure 15.1, 348; by kind permission of Barry Cunliffe).

Chapter 4 brings the work of Michael Avery (1986; 1993a) and Jon Finney (2006) together with the foregoing material and develops the idea of an experiment to explore Avery's hypothesis that the Middle Iron Age developments of large glacis-shaped ramparts and multivallation were defensive responses to attack by stoning.

The experiment compared the performance of slingers, in both defence and attack, on hillfort ramparts roughly representative of the defences from before and after the change. Chapter 5 reports the experiment, and informal trials of range and effectiveness of slings; its major sections describe the approach, the method in detail, the principal results, and a tactical analysis modelled on the experiment data.

Chapter 6 reviews the various explanations of the presence and features of the enclosing works, followed by discussion of issues with the experiment method and with interpreting the experimental results and analyses. A summary of conclusions follows, in Chapter 7.

Two appendices include further details of the experiment equipment and procedures, and tables of results and statistical analyses.

The chronology used is based on Cunliffe (2005; 2006) and Brown (2009), approximate dates being: Earliest Iron Age (800-600 BC); Early Iron Age (600-400 BC); Middle Iron Age (400-100 BC); and Late Iron Age (100 BC-AD 50).

'Hillfort' is not a word recognised by most dictionaries; it is, however, the normal spelling in reports of Iron Age research, especially by the Hillfort Study Group, whose usage for this and other words has been adopted. With respect to slinging, it is not correct to refer to 'firing' the stone, as no fire is involved, but expressions such as 'covering fire' are used in the tactics discussion, being clearer than purist alternatives. The use of the expression 'defences' herein is not an assumption of their function; it is simply more usual than the neutral term 'enclosing works' suggested by Lock and Ralston (2013).