Journal of Archaeological Science 41 (2014) 605–621

Contents lists available at ScienceDirect

Journal of Archaeological Science

journal homepage: http://www.elsevier.com/locate/jas

Buying local or ancient outsourcing? Locating production of prismatic obsidian blades in Bronze-Age Northern Mesopotamia

Ellery Frahm*

Department of Archaeology, The University of Sheffield, Northgate House, West Street, Sheffield S1 4ET, United Kingdom

ARTICLE INFO

Article history:
Received 20 May 2013
Received in revised form
30 September 2013
Accepted 4 October 2013

Keywords:
Bronze Age
Northern Mesopotamia
Obsidian sourcing
Lithic analysis
Craft specialisation
Organisation of production
Prismatic blades
Canaanean blades

ABSTRACT

It is widely held that crafting prismatic chert and obsidian blades was extremely specialised in the Bronze-Age Near East. The prevalent narrative holds that there were just a few dedicated workshops in Anatolia's Upper Euphrates Valley, from which blade segments were exported to Northern Mesopotamia. Due to the challenges of chert sourcing, obsidian has been incorporated into the narrative. Recently, Tell Mozan was added to the proponents' list of Mesopotamian sites with blades imported from Anatolian workshops. Two issues are addressed in this paper. First, does archaeological evidence regarding the spatial organisation of blade production support an interpretation that incomplete reduction sequences imply off-site production? It is shown here that, at known workshop sites, the reduction sequence occurs only in small portions of large urban centres, and even there certain reduction products are under-represented. Second, do obsidians at Tell Mozan and other sites originate from sources near the proposed blade workshops? Highly diverse obsidians at Tell Mozan are inconsistent with a reliance on Anatolian workshops, and a reassessment of prior sourcing studies reveals a regional "sourcescape" more variable than generally thought. The result is a very different picture of lithic craft specialisation in Northern Mesopotamia: diverse obsidian cores and preforms reaching the cities' specialists involved in household production principally for the local market.

1. Introduction

Five decades of obsidian sourcing have established basic spatial distribution trends across Anatolia, Mesopotamia, and the Levant. Large-scale, supra-temporal patterns identified by Renfrew and colleagues (Fig. 1; Cann and Renfrew, 1964; Renfrew et al., 1965, 1966, 1968) have been upheld by subsequent regional syntheses (Cauvin and Chataigner, 1998; Chataigner et al., 1998). More often than not, however, the forms in which obsidian was distributed (e.g., finished tools, cores) are ambiguous. In an article titled "The Phantom Obsidian Traders of the Jazirah," Copeland (1995: 5) lists a variety of outstanding questions:

> How did the obsidian arrive at the sites? Are we certain that it was imported? Who, exactly, collected the material? Were they the same people as those who brought it to the Jazirah settlements? In what form did they transport it: natural lumps, debited cores, finished artifacts? Was it brought directly to each user/destination or to an intermediate spot?

Two decades later, organisation of production has received greater attention (e.g., Astruc et al., 2007; Khalidi et al., 2009; al Quntar et al., 2011; Khalidi, in press); however, Copeland's issues remain largely unanswered. These issues are arguably even more ambiguous for cherts, given methodological and interpretive challenges in identifying their geological origins (see Shackley, 2008: 197–198).

Across Northern Mesopotamia, the Early Bronze Age (EBA, circa 3300–2100 BCE) was a period of increasing urbanism and societal complexity, largely attributed to agricultural surpluses that enabled labour mobilisation and craft specialisation. During the mid-EBA (circa 2600–2500 BCE), urban centres in Syria's Upper Khabur Basin (UKB; Fig. 2) grew markedly. Tell Leilan and Tell Hamoukar, for example, expanded from 15 to 90 ha (Weiss and Courty, 1993; Ur, 2002). Drawing upon satellite agricultural settlements, cities attained populations as high as 14,000 (Wilkinson, 1997, 2000; Wilkinson et al., 2007).

Flaked stone tools, frequently made of chert and obsidian, remained an important aspect of Northern Mesopotamian material culture, even in urban settings. These sites' lithic assemblages

Abbreviations: EBA, Early Bronze Age; LBA, Late Bronze Age; MBA, Middle Bronze Age; MKB, Middle Khabur Basin; SBE, specialised blade export; UEV, Upper Euphrates Valley; UKB, Upper Khabur Basin.

* Tel.: +44 74 0299 0202.
E-mail addresses: e.frahm@sheffield.ac.uk, elleryfrahm@gmail.com.

0305-4403/$ – see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.jas.2013.10.007

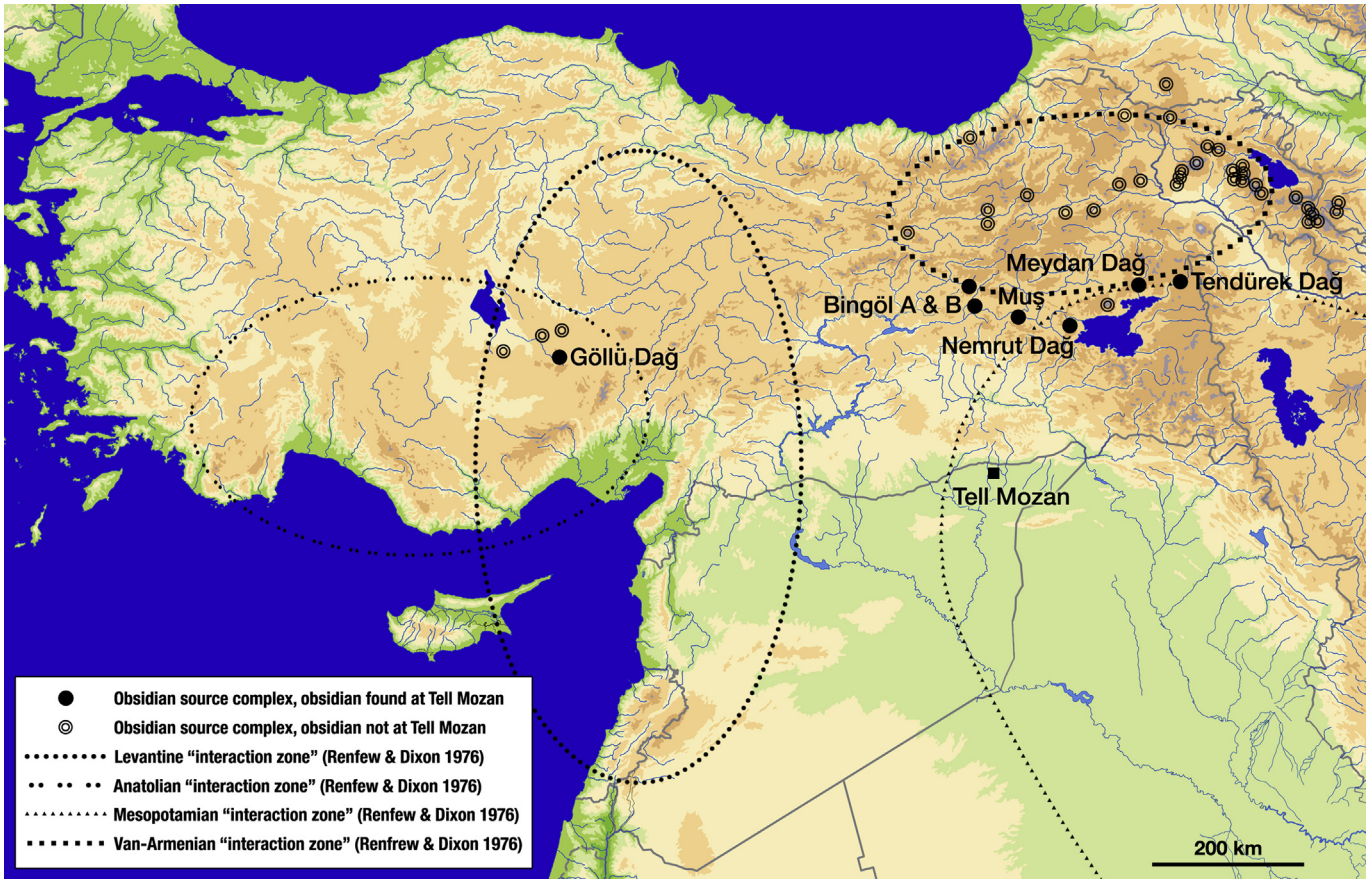

Fig. 1. Near Eastern obsidian sources and the four obsidian interaction zones, circa 5000–3000 BCE (i.e., Late Neolithic to Early Bronze Age [EBA] I), proposed by Renfrew and Dixon (1976). Sources of obsidian artefacts found at Tell Mozan are marked by filled black circles and labelled, whereas obsidian sources not currently represented at Tell Mozan are marked by open circles. The locations marked for each source were chosen to represent the central locations of the obsidian, the primary source (if known), or the "type site" for which a source is named. No endeavour is made here to precisely represent the full primary and secondary distribution of the obsidians.

are largely composed of (1) prismatic blades, blade segments, and blade-based tools (Fig. 3) and (2) *ad hoc* flake tools. The latter are simple flakes, commonly little modified, used as expedient tools for purposes that required no particular morphology. In the UKB, *ad hoc* flake production involved, as aptly described by Akkermans and Schwartz (2003), "smashing a nodule… with a heavier rock into many smaller, irregular pieces" (169). Consequently, these expedient tools pose interpretive challenges (Johnson, 1996), largely lacking indicators of varied social and technological choices. Thus, attention has focused principally on prismatic blades, crafted of both chert and obsidian, that are products of sophisticated, yet variable, *chaînes opératoire*. Such blades were used for various cutting and scraping purposes, including agricultural activities, food and hide processing, and crafts such as pottery and textile production (al Quntar et al., 2011; Groman-Yaroslavski et al., 2013).

A prevalent hypothesis holds that production of one type of prismatic chert blade, called Canaanean blades, was extremely specialised during the EBA (especially the Ninevite V period, 3000–2500 BCE). It is argued that there were only a few dedicated workshops in Anatolia's Upper Euphrates Valley (UEV; Fig. 2), from which Canaanean blade sections were exported throughout Northern Mesopotamia (e.g., Anderson and Inizan, 1994; Chabot, 1999, 2002; Chabot et al., 2001; Chabot and Pelegrin, 2006, 2012; Chabot and Eid, 2003, 2009) "and perhaps beyond" (Anderson et al., 2004:123, Chabot and Eid, 2007:23).

Recently, Chabot and Eid (2009) added Tell Mozan (Figs. 1 and 2) to their list of UKB sites with blades imported from Anatolian workshops. This is based, in large part, on chert appearance:

> This type of flint has been identified only in the Bingöl area in southeastern Turkey, where the only Cananaean workshops known to-date in Northern Mesopotamia were discovered… We thus come to the conclusion that the flint blades of Mozan come from the Anatolian workshops, as concluded for others sites in the region. (810; translated)

Furthermore, they argue that Tell Mozan attests to the continuity of this specialised exchange from the EBA into the Middle Bronze Age (MBA, 2100–1600 BCE):

> This had already been evidenced by the site of Tell Leilan, but the singularity of this discovery, however, called for caution. Mozan would thus confirm this conclusion and come to show, during the Middle Bronze Age, workshops specialised in the manufacture of Canaanean blades and the exchange networks necessary to redistribute them were always active. (819; translated)

Given the challenges of chert sourcing, obsidian sourcing has become an important feature of this narrative (e.g., Chabot et al., 2001:253–254, Chabot, 2002:62). Regarding obsidian prismatic blades recovered at Tell Mozan, Chabot and Eid (2009) conclude that