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Wagons on the Move. The Study of Wagons through Landscape Archaeology

Wagon; hollow ways; landscape of movement; landscape archaeology; Ancient Near East.

First attestations of wheeled-vehicles in the Ancient Near East come from Uruk. The proto-cuneiform signs from the end of the 4th millennium BC represent a sledge sustained by four wheels or two rollers that could be considered as archetype of the 3rd millennium BC wagons. The evolution of wheeled-vehicles is confirmed by the discovery of four-wheeled chariots in tombs at Ur and Kish dating back to the first half of the 3rd millennium BC, in addition to the so-called Standard of Ur that represents a procession of four-wheeled war chariots.

During the second half of the 3rd millennium BC in Syria, a rapid increase in documentation relating to wagons is attested. Terracotta models, seals or seal impressions and written sources from many Syrian sites (such as Ebla, Mari, Terqa, Hama, Tell Brak/Nagar, Tell Bi'a/Tuttul, Tell Beydar/Nabada, Tell Mozan/Urkish, Tell Barri/Kahat, Tell Arbid, Tell Selenkahiye etc. . .) prove the use and diffusion of both two- and four-wheeled vehicles. Although no full-size chariots have been found in Syria, it is possible to reconstruct their morphology and their function based on the documentation mentioned above.

The study of the vehicles' morphology (number of wheels, body morphology, shape and position of the axles) through comparison between different categories of documentation was adopted first by M.A. Littauer and J.H. Crouwel in their book.¹ They recognised three different types of vehicles: a four-wheeled "battle car," a two-wheeled "straddle car" and a two-wheeled "platform car." A more detailed typology, based on the study of terracotta models (Fig. 1) and glyptic representations is: 1) Two-wheeled platform body. 2) Two-wheeled box body. 3) Two-wheeled platform body with footboard. 4) Four-wheeled platform body. 5) Four-wheeled box body. 6) Four-wheeled covered vehicle.²

This approach on the study of the wagon is valuable, especially for reconstruction of their form, but is too limited to allow an understanding of their function. Glyptic representations and written sources provide partial information on their use. In particular war chariots and cultic wagons are often represented on 3rd millennium BC Syrian glyptic,³ while texts, in addition to the previous vehicles, provide information on a type of wagon used to carry loads. This wagon type was identified by the terms GIŠMAR.GID₂.DA, GIŠGIGIR-SUM from Ebla texts.⁴

To date, previous studies on this topic have considered wagons as disjointed from the landscape in which they were used; they were objects without space. The main goal of the research aims to deepen the understanding of the function of the Early Bronze Age wagons through the study of the landscape in which they were used.

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Fig. 1.

- 1 Littauer and Crouwel 1979.
- 2 Raccidi 2012.
- 3 Jans and Bretschneider 1998.
- 4 Conti 1997.



Fig. 1 | Wagon terracotta models from Tell Arbid. After Bielinski 2004, Fig. 11.

The investigated area is part of the so-called “*Khabur Triangle*,” corresponding to modern north-eastern Syria. This area in particular is located between the *wadi Jaghjagh* (east) the *wadi Aweidj* (west) and the *wadi Radd* (south) and comprises many important Bronze Age sites (such as Tell Brak/Nagar, Tell Beydar/Nabada, Tell Arbid, Tell Barri/Kahat, Tell Chagar Bazar/Ashnakkum) with conspicuous documentations related to wagons (models, glyptic representations, written sources).

First studies on the landscape of the Khabur region date back to the 1930s of the last century. Anton Poidebard flew over the Khabur basin producing numerous aerial photographs with the aim of studying the landscape of the eastern frontier of the Roman Empire.⁵ In the 1950s, the archaeologists Willem Van Liere and Jean Lauffray were the first to recognize and map hollow ways associated with Bronze Age Tells and Byzantine sites.⁶ In recent years, many surveys have been made: in the area around Tell Beydar,⁷ in the region to the west of the *wadi Jaghjagh*⁸ and in the hinterland of Tell Brak.⁹ The two archaeologists who have studied the landscape and hollow ways of northern Mesopotamia are Tony Wilkinson¹⁰ and Jason Ur.¹¹ Ur has mapped more than 6000km of hollow ways between the Khabur basin and northern Iraq based on CORONA satellite photographs.¹²

5 Poidebard 1934.

6 Van Liere and Lauffray 1954.

7 Wilkinson 2000.

8 Lyonnet 1996; Lyonnet 1998; Lyonnet 2000.

9 Ur, Karsgaard, and Oates 2011.

10 Wilkinson 1993; Wilkinson et al. 2010.

11 Ur 2003; Ur 2009; Ur 2011; Ur and Wilkinson 2008.

12 Ur 2011.

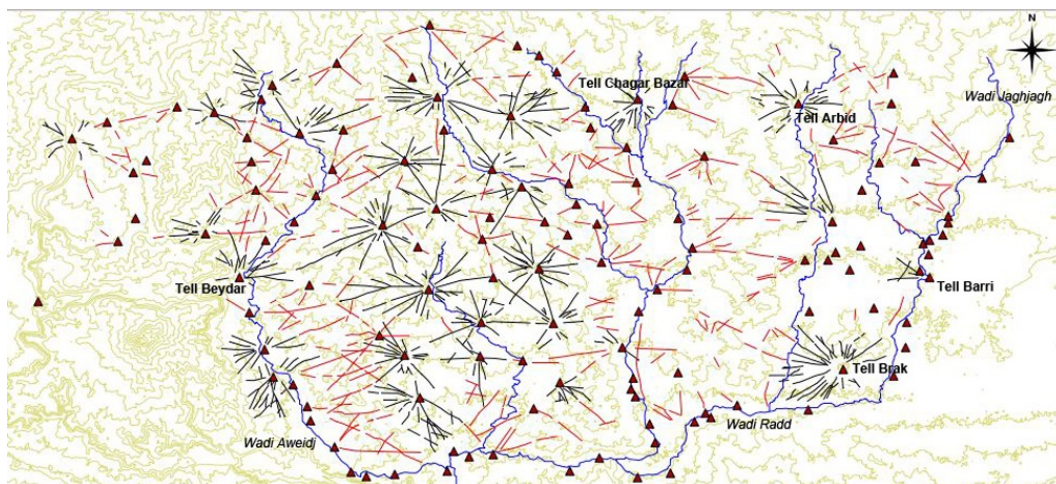


Fig. 2 | Bronze Age sites with internal (black) and external (red) hollow ways, based on OIP 137–3, Ur 2011.

The hollow ways are the main feature studied in this paper. According to Wilkinson and Ur, they represent the modern remains of ancient tracks or paths produced by the continuous passage of human, animal and vehicle traffic. They can be divided into two types: broad and narrow. Broad hollow ways (60–120m wide; 0.50–1.50m deep) are associated with Bronze Age sites and have a radial pattern around the main Bronze Age Tell of the region. Narrow hollow ways (30–60m wide) are instead associated with Byzantine and Islamic sites. Hollow ways are clearly visible via remote sensing, especially by CORONA satellite photographs. They appear as dark linear lines in the landscape, often with light margins due to the concavity of the feature (broad HWs). Some of them around Tell Brak were archaeologically investigated by Wilkinson.¹³

The first step of the present research was to identify Bronze Age sites in the investigated area based on data from surveys.¹⁴ A total of 120 Bronze Age sites were identified. Subsequently, broad hollow ways, connected to Bronze Age sites, were remapped starting from Map OIP 137-3.¹⁵ They are divided into two main types: internal and external hollow ways for a total of more than 1125 km (Fig. 2). Internal hollow ways (645.05km) represent the spokes around the main Bronze Age sites and in most cases do not have the function of connecting sites each other. External hollow ways (480.60km) instead do not have a radial pattern and connect sites together. The end of the internal hollow ways represents the boundary of the cultivation zones, beyond them there are the pasture zones.¹⁶

Starting from these assumptions, two main analyses have been made. The first is useful to understand the boundaries of the area of relevance of the settlements.¹⁷ It is based on a comparison of the Thiessen/Voronoy polygons and the cultivated zone delimited by the internal hollow ways. The second analysis is useful for understanding whether the principle of maximum efficiency is applicable for the hollow ways. It consists of the comparison between the hollow ways (internal and external) and the Delauney network. In the central part of the investigated area, a correspondence always greater than 50% has been found.

13 Wilkinson et al. 2010.

14 Data of surveys are incomplete to identify all Bronze Age sites. For the present paper, data of surveys have been completed by Ur sites classification Ur 2011, 60.

15 Ur 2011.

16 Ur 2009, 193–197.

17 The area of relevance is understood as the territory better controllable from a settlement.

The study of the hollow ways attests to a dense network of tracks or paths connecting Bronze Age sites with each other and with their cultivation zones, but which kind of wagons passed through this landscape and for which kind of use?

Through comparison between wagon documentation and the study of the landscape, it is possible to identify two types of four-wheeled wagon used during the Bronze Age for two main purposes: work on the fields (these vehicles passed through internal hollow ways) and trips between sites (these vehicles passed through internal and external hollow ways).

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