In Search of the Origins of Lower Egyptian Pottery:
A New Approach to Old Data
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Chapter 3
The state of research on the origins of Lower Egyptian pottery

In European archaeology, the emergence of clay vessels and their use by prehistoric societies has often been linked to the transition from hunting and gathering to farming and animal husbandry. Such an approach has a long tradition in culture-historical archaeology. It was H.L. Morgan (1877: 12-14) who claimed that pottery, alongside art, was a feature that distinguished the upper savage from the lower barbarian. However, the first researcher to link the presence of pottery to domesticated plants and animals was Sir John Lubbock. In his division, these three elements became the features that distinguished the Neolithic from the preceding Palaeolithic. In 1923 V.G. Childe (1936) coined the term "Neolithic revolution", seeing this particular period as a breakthrough in human history. Thus, in his opinion, the introduction of domesticated plants and animals marked a fundamental change in people's lives while the emergence of pottery among Neolithic societies was linked to the technological and social progress taking place at that time. The connection between pottery, on the one hand, and farming, animal husbandry and sedentism, on the other, has generally been accepted in archaeology. Pottery, alongside domesticated plants and animals and a sedentary lifestyle, became a key element of the so-called "Neolithic package" – a broadly defined collection of features differentiating farmers from hunters and gatherers (see Çilingiroğlu, 2005). This approach was not changed even by the discoveries of pottery among non-farming communities in Northern Europe. Its emergence and use among hunters and gatherers was considered as a peripheral practice and was linked to contacts or exchange be-

tween foragers and farmers. Since the presence of clay vessels was a diagnostic element in traditional research on farming dispersal, the approach in question led to misunderstandings, namely on the basis of the presence of pottery some communities were defined as agricultural, while its absence led to other traces of farming and herding being ignored.

The last 20 years of discoveries all over the world have shown that pottery was known and used before the domestication of plants and animals, as well as sedentism, in many different contexts of specific and distinct ecological, economic and social settings. The cultural diversity of locations in which pottery has been discovered shows that its origin cannot be explained using a single scheme and that its emergence in farming communities inspired by new types of food and new needs is just one of many possibilities (e.g. Jordan & Zvelebil 2010; Gibbs, 2015).

3.1. The origins of pottery amongst prehistoric societies – a short overview

From our contemporary perspective, the introduction of clay vessels into human life was "the smartest thing to do". Pottery partially replaced containers made of organic materials, while its emergence involved multiple practical potential advantages and benefits. However, the reasons why people began to make and use clay vessels are still being investigated. The multitude of contexts in which the first pottery artefacts were found translates directly into a multitude of theories. Undoubtedly, those which are dominant link pottery to food and the methods of its preparation and storage. The popularity of the so-called culinary hypothesis is partially attributable to the connection between pottery and farming which is so deeply rooted in archaeology. New types of food and new ways of its processing and storage called for new types of containers as those made of organic materials were deemed no longer useful (Brown, 1989: 213; Skibo & Schiffer, 2008: 40). The frequently emphasised connection between the origins of pottery and food processing additionally takes into account the benefits of using pottery. Clay vessels were supposed to detoxify foods and make them more palatable, which had obvious effects on the state of the community (i.e. better health, improved neonatal survival rate). Furthermore, pottery used for storage offered greater protection of food reserves (Arnold, 1989; Barnett & Hoopes, 1995: 3-4; Rice, 1999; Jordan & Zvelebil, 2010: 54).

The introduction of ceramics has also been attributed to symbolic and social practices (Jordan & Zvelebil, 2010: fig. 1). In the opinion of Hayden (1995), pottery was a prestige technology. The first clay vessels were supposed to be prestige food-serving containers that appeared in the context of social or economic competition (Hayden, 1995; Rice, 1999: 11; Jordan & Zvelebil, 2010: 61-65). Early pottery was also supposed to play an important role as a symbol of one's ethnicity and social group identity (e.g. Barnett, 1990).

It is not impossible that the invention of pottery resulted from many co-existing factors, while its practical and symbolic functions could have been interlaced (Skibo & Schiffer, 2008). This claim has been confirmed by research by Gibbs who has investigated two pottery emergence centres, namely those in East Asia and the Near East (Gibbs, 2016; Gibbs & Jordan, 2016). This research showed that, in both cases, the underlying reasons for the emergence of ceramics were different and depended on various economic, social and environmental factors. The new technology may have served a variety of needs and uses and was one of the elements of social development.

The loosened links between farming, sedentism and pottery in archaeology had considerable influence on the research concerning how the idea of pottery making spread. The Near East is no longer considered the only centre of pottery invention from where this technology (as an integral element of the Neolithic package) was introduced to Europe. The current state of research makes it possible to identify three main centres where the technology of pottery emerged (Jordan & Zvelebil, 2010: 68-72; Jordan *et al.*, 2016). The oldest pottery known today comes from East Asia (southern China) and is dated to 18,000 cal. BP, or even earlier. More recent pottery from Japan and the Russian Far East (the Amur River valley) is dated to approximately 16,500 cal. BP and is seen as an effect of a diffusion of know-how from China by mobile hunter-gatherers (Jordan & Zvelebil, 2010; Gibbs & Jordan, 2013; 70; Jordan *et al.*, 2016: 595; Gibbs, 2016). In the model of pottery technology dispersal proposed by Jordan and Zvelebil, pottery may have spread west and north from East Asia, thus reaching as far as the edges of Eastern Europe, the eastern Baltic and northern Scandinavia (Jordan & Zvelebil, 2010: 70-71; Gibbs & Jordan, 2013; Jordan *et al.*, 2016).

Some 12,000 years BP, pottery first appeared in North Africa, with the oldest finds known from Saggai in Sudan bring dated to 11,663 cal. BP (Caneva, 1983; Close, 1995; Silva & Steele, 2014: 724), followed by those from Nabta Playa-Bir Kiseiba in the Western Desert of Egypt (site E-79-8) (Jórdeczka *et al.*, 2011) and Ounjougou in Mali, both dated to 11,000 cal. BP (Huysecom *et al.*, 2009). Although the present state of research does not allow one to conclude whether there were one or more centres of pottery invention in Africa, most researchers tend to support the view of pottery having multiregional origins (Close, 1995; Jesse, 2003; 2010; Tassie, 2014: 80-82). Undoubtedly, however, pottery technology spread quickly within a 4,000 km strip running through the southern Sahara and the northern Sahel. In the model of pottery technology diffusion across Afro-Eurasia proposed by Jordan *et al.* (2016), the early African pottery tradition is also indicated as a possible source of pottery technology in the Neolithic period of the Near East. The model is in keeping with a hypothesis assuming an African contribution to the pottery technology of the western Mediterranean (Gronenborn, 2010: 232). However, this issue requires more investigation and further studies.

For decades, the Near East used to be treated as the only source of pottery technology. Today, the emergence of ceramics in the Near East is dated to approximately 10,500-8,800 cal. BP in the Pre-Pottery Neolithic B (PPNB) context (Kfar HaHoresh), although clay vessels became widespread at the start of Pottery Neolithic (PN) around 9,000 cal. BP, being present in the area stretching from central Anatolia, across Upper Mesopotamia to Zagros (Gibbs & Jordan, 2016: 5). Only from 6,500 BC on, did the idea of the Neolithic economy begin to spread from the Near East to Europe. Pottery accompanied domesticated plants and animals and was gradually adapted, thus becoming one of the most common utensils and, eventually, one of our most abundant archaeological sources. Taking into account the facts described above, it is reasonable to assume that European pottery may have many different roots, including those that originated from East Asia and North Africa. The reasons for the unrelated emergence of pottery in different places, possible links (if any), as well as the methods and ways of dispersal, all need further research.

The diversity of contexts in which the first clay vessels emerged requires each such case to be analysed separately. Human choices depended on many environmental, social and economic factors. Furthermore, the emergence of pottery alone did not necessarily lead to its adaptation. The existing social system had to be modified accordingly. Since pottery making involved a few steps, each such step had to be integrated into the existing system. Thus, the emergence and use of clay vessels eventually required changes to existing traditions and practices.

3.2. The origins of pottery in Lower Egypt

Theories explaining the emergence of the first pottery in Lower Egypt have been affected by its coexistence with the remains of domesticated plants and animals. New types of containers were supposed to have been introduced to Lower Egypt by newcomers from the Near East together with new subsistence strategies. Research on the origins of Lower Egyptian pottery has been dominated by hypotheses linking it to southwest Asia, although their proponents fail to agree on the size of groups that reached Lower Egypt, or on their cultural identity, chronology and reasons that forced them to leave their homelands.

Apart from the Levantine hypotheses, another theory has been proposed that points to the Western Desert as a source of Lower Egyptian Neolithic pottery. Despite having rather few supporters, in recent years possible Saharan influences on the development of Lower Egyptian communities have been mentioned more and more often (e.g. Kuper, 2002; Riemer & Schönfeld, 2010; Shirai, 2010; Muntoni & Gatto, 2014).

3.2.1. The southern Levant as a source of Lower Egyptian pottery

Research by G. Caton-Thompson and E. Gardner on the northern shore of Lake Qarun in the 1920s yielded many significant discoveries. Fayum A and Fayum B were introduced to the archaeological map as two new archaeological cultures. Caton-Thompson realised the importance of these discoveries, linking them both to the Levalloisian hunters, who – in her opinion – were the first to settle near the lake in the Pleistocene era, and to farmers who had developed community life in villages. Despite errors committed in the interpretation of chronology and the selection of artefacts , *The Desert Fayum*, published in 1934, continues to be an important source of knowledge on the prehistoric settlements on the northern shore of Lake Qarun, presenting a vast diversity of finds ranging from pottery to very well-preserved items made of organic materials. In this publication, Caton-Thompson and Gardner focused primarily on the interpretation of finds and on attempts at determining their chronology by comparing them with materials from other sites (Merimde, Tasa, Badari). The problem of the origin of Fayumian farming communities, including the origin of their pottery, was, however, considered to be of secondary importance and was mentioned briefly only towards the end of the book. While Caton-Thompson admitted that in the light of agricultural knowledge then it was reasonable to look for the origins of the farming communities from the Fayum in the east, she eventually considered this option as "unpromising" and spoke in favour of the "autochthonous Delta origin" of the Neolithic groups inhabiting the shores of Lake Qarun.

A similar approach to Neolithic materials from Lower Egypt was followed by H. Junker who ran an excavation project at Merimde Beni Salame from 1929 to 1939. The project provided new evidence concerning Neolithic settlement patterns in the north, with Junker paying particular attention to determining the site's relative chronology. In his papers, the materials from Merimde Beni Salame are compared with earlier finds from both Lower and Upper Egypt. The pottery from Merimde is set together with the pottery known from the Fayum and Maadi, as well as that from Badari or Naqada. Junker's comparative analyses, not unlike those made by Caton-Thompson and Gardner, were confined to the Nile Valley, while his interest in neighbouring areas is visible only in attempts at determining the origin of certain raw materials and items, but not pottery.

The discovery of the Neolithic sites in Ras el-Hof and Wadi Hof also took place in the early 20th century. Results of their brief explorations with a description of features and finds were published in 1926 by Fr. P. Bovier-Lapierre (1926a; 1926b). It seems that Bovier-Lapierre realised the importance of these discoveries, rightly noting that "un ensemble complet", consisting of a settlement accompanied by a cemetery, had been discovered in the Nile Valley for the first time. However, his publications do not mention the origin of the communities occupying this area.

In many ways, the explorations of the Neolithic sites in the Fayum, Merimde and Wadi Hof should be seen as pioneering. Indeed, the attention of archaeologists reached beyond the Pharaonic civilisation and towards the Predynastic period only in the late 19th/early 20th century, which is why archaeological knowledge concerning this field was rather modest and grew significantly with each subsequent discovery. Furthermore, archaeologists initially concentrated, first of all, on Upper Egypt, regarding the Delta and the whole of Lower Egypt as uninhabited swamplands of little interest in terms of archaeology. After the discoveries of sites in the north, containing previously unknown materials that differed considerably from those found in Upper Egypt, the area in question earned a permanent place in the minds of researchers investigating Egyptian prehistory. Most research projects carried out back then were aimed at archaeological reconnaissance and at determining chronology. Researchers were not interested in searching for external analogies or in the precise identification of origins, instead concentrating on the typology of finds and on comparative analyses aimed at defining relative chronologies of artefacts, sites or cultures. The primary objective of their efforts, therefore, was to understand the prehistory of the area under investigation.

The 1920s saw the first publications by Childe (1925; 1928) featuring his concept of a Neolithic revolution. Newly discovered sites with remains of domesticated plants and animals along with ceramics in Badari, the Fayum, Merimde and Wadi Hof also attracted his attention as the best example of the Neolithic culture in Egypt (Childe, 1928: 51-63; 1935: 35-41). These discoveries were compatible with the theory that assumed a gradual spread of new forms of social and economic life from a place of origin located in the Near East (Childe, 1925: 23). In *New Light on the Most Ancient East*, Childe used ceramics as a starting point for facing the unclear origin of Egyptian farming (Childe, 1935: 48-49). Having analysed the similarities between the oldest pottery from Merimde and that known from the Levant, he considered it likely that domesticated plants and animals, as well as other Neolithic elements, were introduced to Egypt from the east. However, he remarked that the Asiatic tradition had blended with local "African-Aterian traditions", thus emphasising the autochthonic character of the Neolithic societies from Lower Egypt. The theory on the eastern origins of domesticated plants and animals together with other 'arts', including pottery, was commonly accepted and its popularity has not waned ever since.

The publication of works on Neolithic materials from Lower Egypt by Caton-Thompson and Gardner, Junker, Bovier-Lapierre, as well as those of Childe, brought these materials into a broader discussion, thus making it possible to compare them against materials from neighbouring areas, including, in particular, the southern Levant. Pottery was one of the key aspects to be researched. Already in 1942, in a section dedicated to "the Pre-Gerzean period" in her article on early

relations between Egypt and Asia, H. Kantor pointed out the similarities between the pottery from Merimde Beni Salame and the Ghassulian pottery from the southern Levant (footed vessels and clay ladles). Although Kantor did not propose any detailed explanations for these similarities, she noted that they may have resulted from "casual, intermittent contacts" or the same origins (Kantor, 1942: 174-175). A similar view was proposed in 1959 by J. Kaplan who, in his brief study on the connections between Egypt and Palestine, suggested the existence of similarities between footed vessels/chalices and ladles from Merimde and Palestine, as originally proposed by Kantor (1942). Although the 1950s saw a growing interest in relationships between Egypt and the Levant, the Neolithic period – due to the lower quality and quantity of materials – did not attract much attention. After a series of discoveries of imports in the territory of both Egypt and Israel, archaeologists focused on, and intensively researched relationships between these regions during the 4th and 3rd millenniums BC (for details, see Mączyńska, 2013: 37-45).

The post-war period in Egyptian archaeology saw researchers returning to already-known Neolithic sites and a general intensification of excavation projects in both Upper and Lower Egypt. The scope of archaeologists' attention was also expanded to include assemblages from pre-war research projects. The materials excavated by Junker at Merimde Beni Salame, stored in the collections of Stockholm's Egyptska Museet were subsequently analysed by H. Larsen (Larsen, 1957; 1958; 1959; 1960; 1962). His attention was drawn, for instance, to the herringbone pattern visible on the oldest Merimde ceramics, which he linked to decorations recorded at the Neolithic site in Jericho among materials from Stratum VIII (Larsen, 1958: 45-48).

Furthermore, the post-war period was a time of the first monographs taking a holistic look at Predynastic Egypt. Thus, in 1955, E.J. Baumgartel published *The Cultures of Prehistoric Egypt*, also featuring Neolithic sites from Lower Egypt (the Fayum and Merimde). However, Baumgartel considered it erroneous to use the term Neolithic when referring to Predynastic Egypt, including the materials from Merimde (Baumgartel, 1955: 14-15). Furthermore, she proposed to supplement Merimde and Fayum pottery analyses with flint analyses in studies on chronology and cultural relations. In Baumgartel's view, both pottery and flint assemblages indicated that the settlement at Merimde was founded at a time when the Naqada II culture already existed in Upper Egypt (Baumgartel, 1955: 17-18). On the same basis, materials from the Fayum were dated to Naqada I (Baumgartel, 1955: 25). Moreover, she saw the origins of Naqada I communities in the south while linking the Fayumian materials with the Early Khartoum culture. Additionally, Baumgartel saw southern influences in the materials from Merimde. Currently, although many of her theories are considered incorrect and controversial, it is the poor state of contemporary research on the Predynastic period that should be blamed for such imperfections.

An important breakthrough in the research on the origins of the Neolithic communities in Lower Egypt came with the introduction of radiocarbon dating. In 1965, W.C. Hayes published *Most Ancient Egypt*, dedicated to the prehistory of Lower Egypt alone and taking into account the first C14 dates. For Hayes, it seemed "inevitable" that the Neolithic culture with all its elements, including ceramics, was introduced to Egypt from southwest Asia (Hayes, 1965: 92, 96-97). Furthermore, in the pottery from Merimde, Hayes saw strong cultural ties (herringbone pattern, ladles, footed vessels) with the Neolithic B pottery from Jericho (Hayes, 1965: 114). Hayes' views were shared by other researchers. Indeed, A.J. Arkell linked the origins of the Fayumian culture with Asia; in his opinion "a knowledge of pottery must similarly have come to the Fayum from Palestine" (Arkell, 1975: 13; Arkell & Ucko, 1965: 147). L. Krzyżaniak (1977), in his work entitled *Early Farming Cultures on the Lower Nile*, also drew attention to the similarities between Merimde pottery and materials from Jericho Stratum VIII. In addition, for M.A. Hoffman the inhabitants of Merimde were immigrants from southern Palestine or the Libyan coast (Hoffman, 1979: 188). However, as far as the Fayumian culture is concerned, he considered the local community to be an endogenous culture that adapted the Neolithic way of life, with ties to the Sahara.

The discoveries important for the research on Fayumian origins were made by a Polish mission and by an American expedition during the 1980s. At the sites at Qasr el-Sagha, B. Ginter and J.K. Kozłowski identified two phases of Neolithic occupations, differing in terms of ceramic and flint assemblages (Ginter & Kozłowski, 1983: 67; Kozłowski & Ginter, 1989). In their opinion, settlers from the earlier phase were related to southwest Asia, while Saharan origins were suggested for the later occupation phase. In the light of the American research, R. Wenke suggested that the farming Fayumian societies could have originated from multidirectional influences, namely both from southwest Asia and from North Africa (Wenke *et al.*, 1988: 47). Moreover, the transition from hunting and gathering to farming and herding was likely to have been more complex, with a stage of pre-adaptation (Wenke & Casini, 1989).

In the 1970s and 1980s, researchers also returned to the site at Merimde Beni Salame. The modern research methods used by these expeditions offered new insights into the Neolithic communities of Lower Egypt, particularly with regard to their origins (Eiwanger 1984; 1988; 1992; Hawass *et al.*, 1988). In 1984, materials from the site's oldest phase, known as the Urschicht phase, were published. Referring to the origins of ceramics, J. Eiwanger accepted the hypothesis put forward by Larsen, claiming that the herringbone pattern on pottery had come from the east. Moreover, Eiwanger suggested a connection between the Merimde I pottery assemblage and the Yarmukian pottery of the Pottery Neolithic on the basis of decoration patterns, loop and lug handles, as well as a bifacial surface retouch, early

forms of polishing and, finally, clay figures (Eiwanger, 1984: 61-63). Moreover, he linked the origins of the Merimde culture to groups arriving from the east because of droughts occurring in southwest Asia around 7,000 BC. The inhabitants of the affected areas were forced to migrate to more humid regions, with the first to reach Merimde being a kind of reconnaissance group who came to the Delta in search of new inhabitable areas. Owing to the favourable location of the areas surrounding Merimde (fertile valleys and desert pastures), they decided to establish a permanent settlement there, particularly along the main branch of the Nile, where the abundant resources of the river, namely transport and fertile silt-rich soils were easily available.

The 1980s saw a soaring interest in food production in Egyptian archaeology, inspired by new discoveries in the Western Desert. Particularly noteworthy are the works of F. Hassan, as they cover a broad context including both North Africa and the Levant, create a radiocarbon dating framework for Egypt, as well as present correlations between cultural changes and climatic changes (Hassan, 1980; 1984a; 1984b; 1985; 1998; 2002a; 2002b). Already in 1984, Hassan was of the opinion that the emergence of farming in Egypt had resulted from a "demographic fusion between the inhabitants of the Nile Valley and the refugees from the desert regions adjacent to the Nile Valley", including the Sinai and the Negev (Hassan, 1984b: 222-223). According to Hassan, farming was introduced to the Delta by drifters and refugees. However, their movement was not linked to mass migrations from southwest Asia. In fact, Lower Egypt is claimed to have been gradually infiltrated by such drifters and refugees over a relatively long period of time (some 500 years or more). In his opinion, the change in subsistence was almost imperceptible, and thus peaceful and gradual. Levantine farmers easily adapted to local hunter-gatherers, with the adaptation process being facilitated by a flexible social organisation and a probably exogamous marriage pattern followed by autochthonous communities. In the light of this hypothesis, pottery may have reached northern Egypt together with migrants from the east.

In 1989, A. Smith compared available evidence on the connections between North Africa and the Levant in the period in question. Taking into account the most recent data from the Sinai and the Negev, he pointed to the Qatifian culture as a possible source of the Fayumian ceramics. In his opinion, pottery may have been introduced to Lower Egypt through pastoral contacts with North Africa (Smith, 1989: 75). Furthermore, Smith claimed that there were some similarities between lateral polishing on flaked stone axes from Qatif and those from the central Sahara. According to Smith, such similarities confirm a mutual exchange of ideas having occurred between North Africa and the Levant during the Early and Middle Holocene periods.

The question of linking the Neolithic pottery tradition with the Levant was also raised after the publication of materials of the el-Omari culture from Wadi

Hof (Debono & Mortensen, 1990). According to F. Debono and B. Mortensen, some aspects of el-Omari pottery production correspond well to the Pottery Neolithic pottery tradition from the Levant. In their opinion, vessel shapes were similar to the ceramics of Jericho (bowls, hole-mouth jars, necked jars, concave bases). Moreover, Debono and Mortensen suggested a link between Egyptian and Levantine pottery traditions visible in the use of different clays, the mixing of clays, the use of straw, calcite and sand tempers, wet-smoothing, thick red slip and burnishing, as well as control of oxidizing conditions during the firing process (Debono & Mortensen, 1990: 40). The flint industry may also be associated with the Yarmukian culture (Debono & Mortensen, 1990: 53). According to Debono and Mortensen, the origins of the el-Omari culture were local, although its pottery, lithics, constructions and burial customs show strong links to the southern Levant. In their opinion, just as in the case of the Merimde settlement, a group of Levantine herders may have settled in the Wadi Hof region.

Intensive research on the Predynastic and Protodynastic periods in the 1980s and 1990s yielded a growing amount of new evidence that needed to be systematically analysed. As a result, a number of important monographs addressing those two periods and, additionally, the Neolithic were published. Thus, B. Midant-Reynes (see also 2000), in her 1992 work entitled *Préhistoire de L'Égypte. Des premiers hommes aux premiers pharaons*, presented the state of research on the Neolithic communities of Lower Egypt. She pointed out the eastern origins of domesticated plants and animals, in both the Fayum and Merimde. In the case of the Fayumian culture, she also suggested a Near Eastern origin of bifacial knapping with polishing. According to Midant-Reynes, the Fayumian culture emerged at a junction of three influences, namely from the Near East, the Sahara and the Nile Valley (Midant-Reynes, 1992: 107). By analysing materials from the Urschicht phase at Merimde Beni Salame (including pottery), the French researcher linked their origins to the Near East. In her opinion, the settlement at Merimde, unlike the Fayumian sites, has a typically eastern character. She also attributed Levantine origins to the communities of the el-Omari culture. In the opinion of Midant-Reynes, the pottery of this culture displays a significant affinity to that known from the Pottery Neolithic in the Levant (Midant-Reynes, 1992: 119). Similar views were presented by Midant-Reynes in her 2003 work entitled *Aux Origines de L'Égypte* (Midant-Reynes, 2003: 66-79). Another specialist in Egyptian prehistory, K.M. Ciałowicz, has also suggested a Near Eastern origin of the early Neolithic communities from Lower Egypt and migration from the east (Ciałowicz, 1999: 91-103).

The theory on the Levantine origins of the Lower Egyptian Neolithic (including domesticated plants and animals, pottery, as well as certain flint items), one well established before the Second World War, has remained relatively unchanged in studies on Egyptian prehistory. The lack of new discoveries has not attracted

researchers' attention and has been counterproductive to the growth of knowledge on farming communities inhabiting northern Egypt before the 4th millennium BC. Moreover, research has been limited to presentations of the current state of knowledge and earlier hypotheses proposed by other researchers (e.g. Wetterström, 1993; Wengrow, 2006; Mączyńska, 2008).

However, an important contribution to the research on the first farming communities in Egypt came from N. Shirai (2005; 2006). In his opinion, the Neolithisation process in Lower Egypt was closely linked to the Near East. Shirai's attention was drawn to the sites of the Fayumian culture and to flint materials excavated by Caton-Thompson and Gardner. On the basis of this analysis, he concluded that already from the 8th millennium BC on, there had existed a sociocultural network linking Egypt with the Levant and enabling a steady flow of technical knowledge, stylistic information and symbolic beliefs. He was of the opinion that this network also allowed for the diffusion of concepts concerning farming and herding into Lower Egypt (Shirai, 2010; 2013a; 2013b; 2015; 2017). Although he assumed that migrants from the east had come to Egypt, he also admitted that there is no evidence directly confirming their presence. Moreover, Shirai also noticed that in contrast to lithics, the pottery of the Fayumian culture differs from the Levantine pottery of the Pottery Neolithic period in terms of shape, surface treatment and decoration, and thus should rather be linked to the North African pottery tradition. However, he also claimed that the herringbone pattern from Merimde, as well as the variety of body shapes and sizes of Lower Egyptian ceramic assemblages, can be linked to the Yarmukian culture (Shirai, 2005: 13; 2010: 312-314).

An interesting hypothesis on the origins of the north-eastern African pottery, based on the relationship between pottery and food traditions, was put forward by R. Haaland (2007). Taking into account archaeological and ethnographic data, on the one hand, and the division into wheat-barley bread-eating Near East and sorghum-porridge-eating Africa, on the other, Haaland placed Egypt in the Near Eastern tradition, thus pointing to the Near Eastern origins of the entire Egyptian pottery tradition, additionally including the Western Desert.

Both the African and Levantine roots of Lower Egyptian pottery were noticed by G. Tassie (Tassie, 2014: 184-185). Even though he points out the similarities between Fayumian and Merimde pottery, on the one hand, with that from the Western Desert, on the other, he also notices some differences. In Tassie's opinion, the pottery from Lower Egypt – in the light of its technological sophistication – must have been introduced from outside, probably from the Levant. Thus, the Nile Delta must have been reached by farmer-herders from the Nizzanim variant or Wadi Rabah culture (Tassie, 2014: 194).

The spread of farming and herding, as well as other Neolithic elements from the Levant to Egypt, has been rather rarely addressed by researchers working in

Israel. This moderate level of interest has resulted from the lack of access to materials in Egypt, on the one hand, and from their poor quality and low quantity as compared with evidence from the Levant dated to the same period, on the other hand. O. Bar-Yosef (1987) supported the view claiming the existence of contacts between communities inhabiting the Levant and Egypt already in the Pleistocene epoch. In his opinion, the geographical proximity and lack of natural barriers on the Sinai were conducive to the exchange of people and ideas. However, he pointed out the maritime migration route from the Levant to the Nile Delta, linked to the collapse of the PPNB society and the 8.2 kiloyear cal. BP cold event (Bar-Yosef, 2009; 2002; 2013).

The most recent hypothesis on the origins of Lower Egyptian pottery has been proposed by K. Streit (2017). Having analysed materials from the Neolithic sites in Lower Egypt and having compared them with assemblages from the Levant, she concluded that pottery was first introduced to Egypt by migrants representing the Wadi Rabah culture from the Levant. According to Streit, parallels can be seen among pottery shapes (hole-mouth jars, simple bowls), surface treatments (slip and burnishing) and decoration (herringbone pattern). Moreover, she also noticed some similarities in flint assemblages and among small finds (animal figurines). Streit's hypothesis is based on radiocarbon dating and Bayesian modelling. On this basis, she concluded that only members of the Wadi Rabah culture could have had contacts with groups inhabiting Lower Egypt in the 6th millennium BC.

Human migrations from the Levant to northeast Africa at the time of the Neolithic transition have been confirmed by genetic studies (Arredi *et al.*, 2004; Kujanová *et al.*, 2009; Smith, 2013b). Moreover, the latest discoveries from northern Morocco have prompted researchers to suggest that the introduction of domesticated plants and animals and pottery to that area took place between 5,500 and 5,000 cal. BC as a result of the same diffusion process from the Levant that had previously reached Lower Egypt (Morales *et al.*, 2016).

By way of conclusion, it should be remarked that the Levantine origins of Neolithic Lower Egyptian ceramics are closely related to the origins of domesticated plants and animals introduced to Lower Egypt from the east. Commonly accepted as an element of the so-called Neolithic package, pottery is seen as a Levantine contribution to the development of Ancient Egyptian civilisation. Hypotheses suggesting the eastern origins of pottery are based on the origins of farming and herding, on the one hand, and/or on stylistic or technological similarities, on the other. Domesticated plants and animals, as well as assemblage items (pottery, flints, figurines) with analogies in southwest Asia, are the key arguments in discussions on the early connections between Egypt and the Levant. However, the very process of their introduction to Egypt continues to be puzzling. Questions about when and how the Levantines reached northern Egypt remain unanswered.

So far, not a single foreign item (ceramics or flint) has been found in any of the Neolithic sites that could serve as evidence confirming the presence of foreign groups in this area. Furthermore, stylistic analyses of material culture (including ceramics) aimed at highlighting similarities are inconsistent, as they link the first Egyptian farmers to different cultural groups from the Levant. Undoubtedly, research is not made any easier by the low quality and quantity of the available data. The currently known Neolithic sites in Lower Egypt surely represent but a fraction of the actual settlement activity in the period in question. The traces left by the first farmers and herders may be covered by a thick layer of silt or may have already been destroyed in the prehistoric period.

3.2.2. The Western Desert as a source of Lower Egyptian pottery

From the very beginning of Neolithic research, it has been a common practice to link the Neolithic in Lower Egypt to the Levant on the basis of the presence of domesticated plants and animals, as well as other elements of the Neolithic package, including pottery. However, already among the first researchers, there were those suggesting hypotheses of a local (African) origin of Egyptian Neolithic communities on the basis of flint assemblages. Indeed, Caton-Thompson and Gardner (1934) were of the opinion that the communities who occupied the lakes of Lake Qarun were autochthonous. Even Childe admitted that, next to new Asiatic elements (domesticated plants and animals, pottery), local "African-Aterian traditions" were still present in flint industries (Childe, 1935: 45-46, 48-49).

The local character of flint assemblages also drew the attention of some post-war researchers. Indeed, Baumgartel associated the sites in the Fayum and Merimde with "the first settlers in Egypt" who came from the south, a view based, first of all, on the bifacial flint industry (Baumgartel, 1955: 37-38, 49). Furthermore, she saw a close connection between the Fayumian and the Early Khartoum cultures. The Lower Egyptian Neolithic was also claimed to have had African origins by J. Mellaart (1965: 161). In commenting on a paper by A.J. Arkell and P.J. Ucko (1965), he stressed the lack of links between the Fayum/Merimde and their eastern neighbours. In his opinion, ceramics may have been invented by Egyptians and there was no reason to suggest that Egyptian pottery must have necessarily originated from the Near East. The bifacial arrowhead industry, along with the hollow-based arrowheads of the Lower Egyptian Neolithic, were also associated with the Aterian culture by J.L. Forde-Johnston (1959). Similar views were presented by K. Butzer in 1976 in his *Early Hydraulic Civilisation in Egypt* (Butzer, 1976: 10-11). Moreover, M.A. Hoffman considered the Fayumian culture as comprising endogenous communities that changed after the Neolithic revolution (Hoffman, 1979: 188). Nevertheless, most researchers are of the opinion that ceramics, as an element of the Neolithic culture, came to Lower Egypt from south-east Asia, while flint assemblages could be of local origin.

An important event in the research on the origins of Neolithic cultures in North Africa was the intensification of explorations of the eastern Sahara. The discoveries made by archaeologists in the Western Desert caused a profound change in the way of thinking about food production, animal domestication and early pottery production in this region. Numerous traces of the use of wild cereals (storage pits, grinding stones), the remains of domesticated animals and fragments of pottery vessels were recorded at Early and Middle Holocene desert sites. They all showed that the Near Eastern model of the Neolithic is not the only model possible and that the elements of the so-called Neolithic package may have emerged independently of south west Asian influences.

The last decades of research conducted in the Western and Eastern Desert have made a tremendous contribution to our knowledge about Early and Middle Holocene communities inhabiting these regions. Attention has been drawn to the non-isolation of communities living in the desert and in oases (and probably also in the Nile Valley) and to their long-distance contacts owing to annual rounds through the desert (Kindermann, 2002; Riemer & Kindermann, 2008; Riemer *et al.*, 2013). Researchers have also identified correlations between the timing of certain events, namely: the beginning of the desiccation of the Egyptian Sahara; the large-scale exodus from the desert; the emergence of the farming community in the Fayum in the 6th millennium BC; and the rise of human occupation along the Nile around 5,000 BC (Kindermann, 2003; Kuper & Kröplin, 2006: 805-806; Riemer & Kinderman, 2008; Riemer *et al.*, 2013). As climatic changes in the Sahara forced people to move to more favourable areas during the final part of the Holocene humid phase, societies from the Western Desert probably headed towards the Nile Valley, the Nile Delta and the Fayum, using previously known routes (Riemer, 2013: 170; Tassie, 2014: 193). According to H. Riemer *et al.*, certain similarities in the assemblages of the bifacial tradition of the desert and the early Neolithic tradition in Lower and Upper Egypt could be identified as evidence of the cultural links between these regions (Riemer *et al.*, 2013: 172).

The discoveries in the eastern Sahara have influenced Lower Egyptian prehistory. Most hypotheses proposed in the 1980s placed the Neolithic communities from Lower Egypt (including in particular the Fayumian culture) at the junction of influences from the Western Desert and the Levant. Some have even suggested the movement of people (Hassan, 1984b: 222-223; Wenke *et al.*, 1988; Smith, 1989; Wenke & Casini, 1989; Midant-Reynes, 1992; 2000; 2003: 76-77; Tassie, 2014: 184-185). Saharan influences on the Neolithic cultures in Lower Egypt were additionally confirmed by research conducted by a Polish expedition at the Qasr el-Sagha sites (Kozłowski & Ginter, 1989: 176-179). In the light of the discoveries from the 1980s, one particularly remarkable hypothesis is that proposed by F. Wendorf and R. Schild that took into account their own exploration of the area

of Nabta Playa-Bir Kiseiba and the Fayum (Wendorf & Schild, 1984: 428). Both researchers linked the origins of the Fayumian culture directly to the migration of cattle-keepers from the Sahara. They also associated the pottery of the Fayumian culture with that known from the Great Sand Sea area, suggesting that the sites at Lake Qarun are in fact remains left by Saharan groups that "moved to the Fayum basin seasonally in order to fish" (Wendorf & Schild, 1984: 428).

Over the last 30 years, only a few opinions clearly linking the pottery traditions of the Sahara and Fayum have been proposed. The affinities between the pottery of the Fayumian culture and that of the Western Desert were commented on by R. Kuper in 1996. In his view, there is a large degree of similarity between the pottery from the site of Lobo near Abu Minqar and the pottery of the Fayumian culture (Kuper, 1996: 89; 2002: 9). The affinity of Bashendi B ceramic forms from the Dakhleh Oasis and those from the Fayum and Merimde II was also noticed by C. Hope (2002: 57) who stated that "the Egyptian Sahara could be a possible source of various features of Nile Valley ceramics". The similarities identified by him included some vessel shapes (deep bowls) and smoothed brown ware. The question of connections between the Dakhleh Oasis and the Lower Egyptian Neolithic was also addressed by A. Warfe (2003). However, after a thorough analysis that also included ceramics, he concluded that only a few links between the Lower Egyptian Neolithic and the desert groups could be identified. These were supposed to include thin-walled and fine-tempered pottery (Warfe, 2003: 193).

The question of the African origins of Neolithic pottery is rather rarely discussed. Research is not made any easier by the dominance of the hypothesis assuming its Levantine origins, or by poor evidence. Despite a number of exploration projects in the Western Desert, in recent years there have been no discoveries that could strongly support the hypothesis linking the Sahara to Lower Egypt. In this context, the only study of note is the analysis of pottery of the Farfara Oasis from a site known as Sheykh el-Obeiyid 99/1. On this basis, I. Muntoni and M.C. Gatto suggest the pottery's similarity to materials from the Fayum (Muntoni & Gatto, 2014: 457). As no traces of pottery production to the north of the Farfara Oasis have been discovered so far, the roots of pottery production of the Lower Egyptian Neolithic are commonly seen in the east and linked to the newcomers from the Levant.

3.3. Summary

Research on the origins of Lower Egyptian pottery has been dominated by hypotheses linking it to southwest Asia. Newcomers from the Near East were supposed to have introduced new subsistence strategies to Lower Egypt, together with other elements of the Neolithic package, including clay vessels. The origins of Neolithic Lower Egyptian pottery are very closely linked to the origins of the Neolithic way of life and the process of its spread from the core area in the Near

East. Although researchers have never really agreed on the size of groups that reached Lower Egypt, or on their cultural identity, chronology and reasons that forced them to leave their homelands, the hypothesis based on the Levantine origin of Neolithic pottery is quite deeply rooted in the prehistory of Egypt.

Research on the prehistoric occupation of the Western Desert has a much shorter tradition than that on the oldest history of Lower Egypt. However, its intensity and modern research methods have yielded some discoveries that have forced researchers to reconsider their views on the roots of Egyptian civilisation. Today, the area in question is nearly devoid of any permanent human presence (except for oases) due to high temperatures and limited access to water. However, during the Holocene humid phase, it was inhabited by mobile groups of hunter-gatherers and herders. The 'Green Sahara' offered water, wild plants, animals, and pasture, which gave rise to the development of various strategies of human adaptation. In the light of research on the eastern Sahara, the Near Eastern model has become merely one of the possible solutions.

At first glance, both hypotheses presented above differ significantly from each other. However, if we look more closely at the arguments used to support them, we will notice that they are, in fact, similar. Neither of the two hypotheses is based on evidence that directly points to the source from which clay vessels were adapted. In the Levantine hypothesis, pottery is an element of the Neolithic package introduced to the northern part of Egypt together with new subsistence strategies by newcomers from the Near East. In the Saharan hypothesis, ceramic vessels are part of the African heritage introduced into Lower Egypt by migrants from the desert. Moreover, both hypotheses are based on the technological or typological similarity of the vessels (surface treatment, forms, decoration). If one realises that the popularity of the hypothesis proclaiming the Levantine origin of Lower Egyptian pottery largely results from its long history of research, the arguments presented in both hypotheses will seem similar and equally valid.