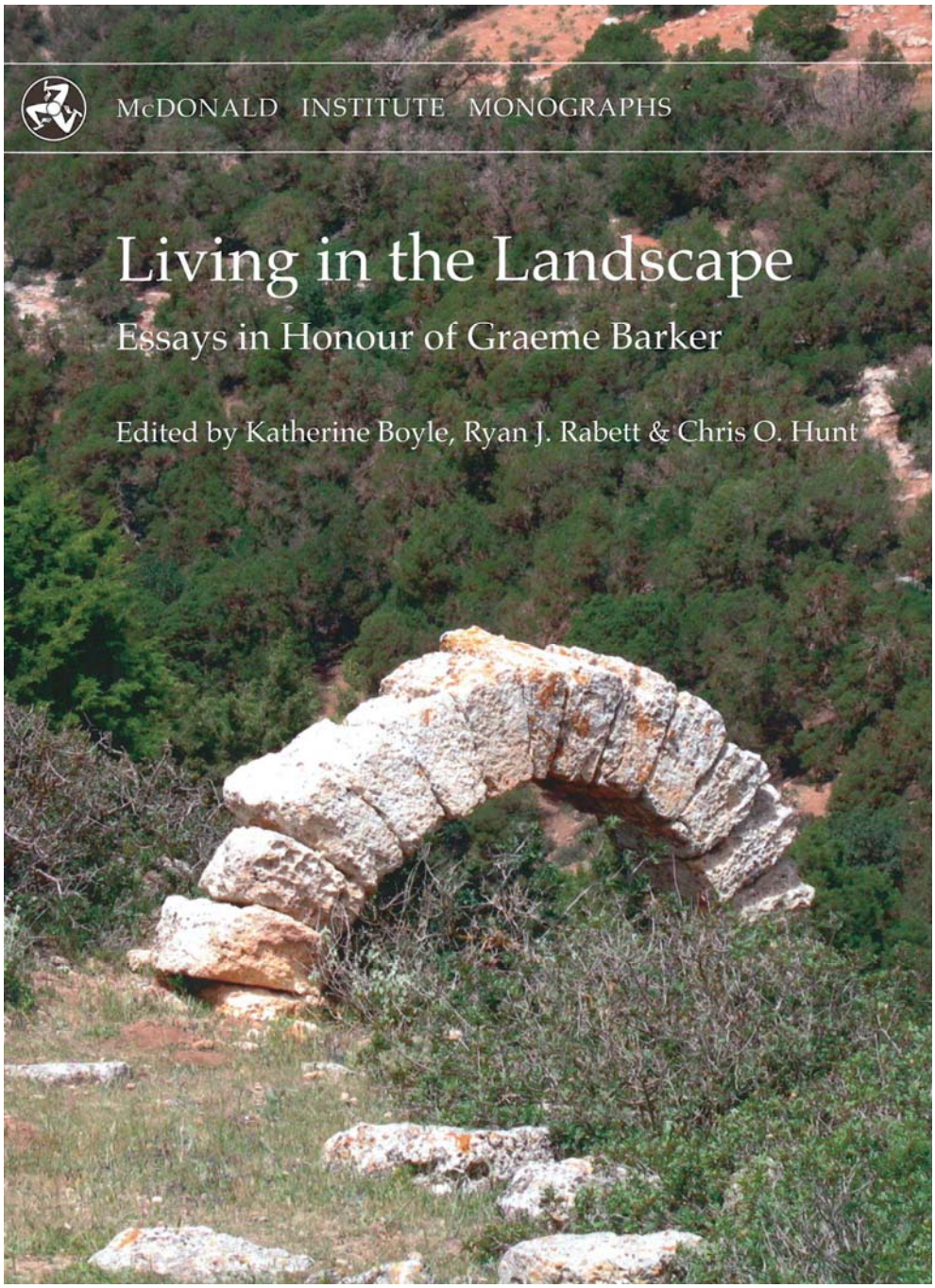

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Chapter 11

Farming comes to Arcadia: Notes on the Neolithic Settlement of Central Europe

Peter Bogucki

Introduction

The establishment of farming communities across the vast area reaching from Ukraine in the east to the Paris Basin in the west, from Lake Balaton in the south almost to the Baltic coast in the north during the second half of the sixth millennium BC remains one of the most compelling archaeological research topics (Fig. 11.1). It involves a striking combination of well-preserved archaeological remains, a process sufficiently equivocal to cause prolonged debate and new frontiers in scientific analyses, and it has fascinated archaeologists for a century or more (Childe 1929; Barker 2006). In an effort to advance a coherent narrative, however, archaeologists have simplified the earliest farmers of central Europe into a series of panoramic snapshots: lines on a continent-scale map showing the dispersal of Linear Pottery, a 'typical' longhouse, wheat-barley-sheep-goat-cattle-pigs. Five centuries of human activity are compressed into a moment in the archaeological record.

Such compression of perception, in my view, led to the polarization of archaeological thought about the earliest farmers in central Europe to focus on whether they were immigrants from southeastern Europe bringing their agricultural lifestyle with them (but then, where did the longhouses come from?) or indigenous foragers who quickly picked up the agricultural life with minimal influence from outside farmers (but again, where did the longhouses come from?) It all became a question of ancestry, and the arguments went around and around. Attempts to harmonize these positions, the so-called 'integrationist' case, simply validated the focus on ancestry but made the narrative more complicated.

The main point of this essay is that we probably have been looking at the spread of agriculture in central Europe, as in many other areas, at too coarse a resolution. From the hindsight of 7000 years the spread of farming in central Europe may appear rapid, almost instantaneous. We telescope what happened during the second half of the sixth millennium BC into a single coordinated event. On a human scale, however, the establishment of farming communities from Ukraine to France took place over many, many generations. The handoff from one generation to the next introduced discontinuity, however small, in the reproduction of the social order. Such intergenerational handoffs took place continuously in many thousands of developing farming households and established forager bands across central Europe. What appears through the peephole of archaeology to be a sudden transformation was really a cumulative development over many generations. Each turnover in household composition brought incremental changes in outlook, values, ideas, skills and memories.

Rather than pursuing unproductive ancestry arguments about whether the Neolithic settlement of central Europe was the product of demic diffusion or indigenous adoption, we should look at the last half of the sixth millennium in central Europe through a different lens. The argument will be advanced here that people across this area created a dynamic economic, social and ideological environment in which the use of a relatively conservative, standardized subsistence and settlement system led to novel opportunities. People of both farming and foraging ancestry could move about widely, refine and redefine their identities, engage in elaborate ceremonies and rituals, create lasting memories, fight and die violently, develop new technologies, and dramatically transform both the physical and social landscape. Although similar outbursts of creative and innovative behaviour took place throughout prehistory, central Europe during the last sixth millennium BC provides a case study in how many elements converged.

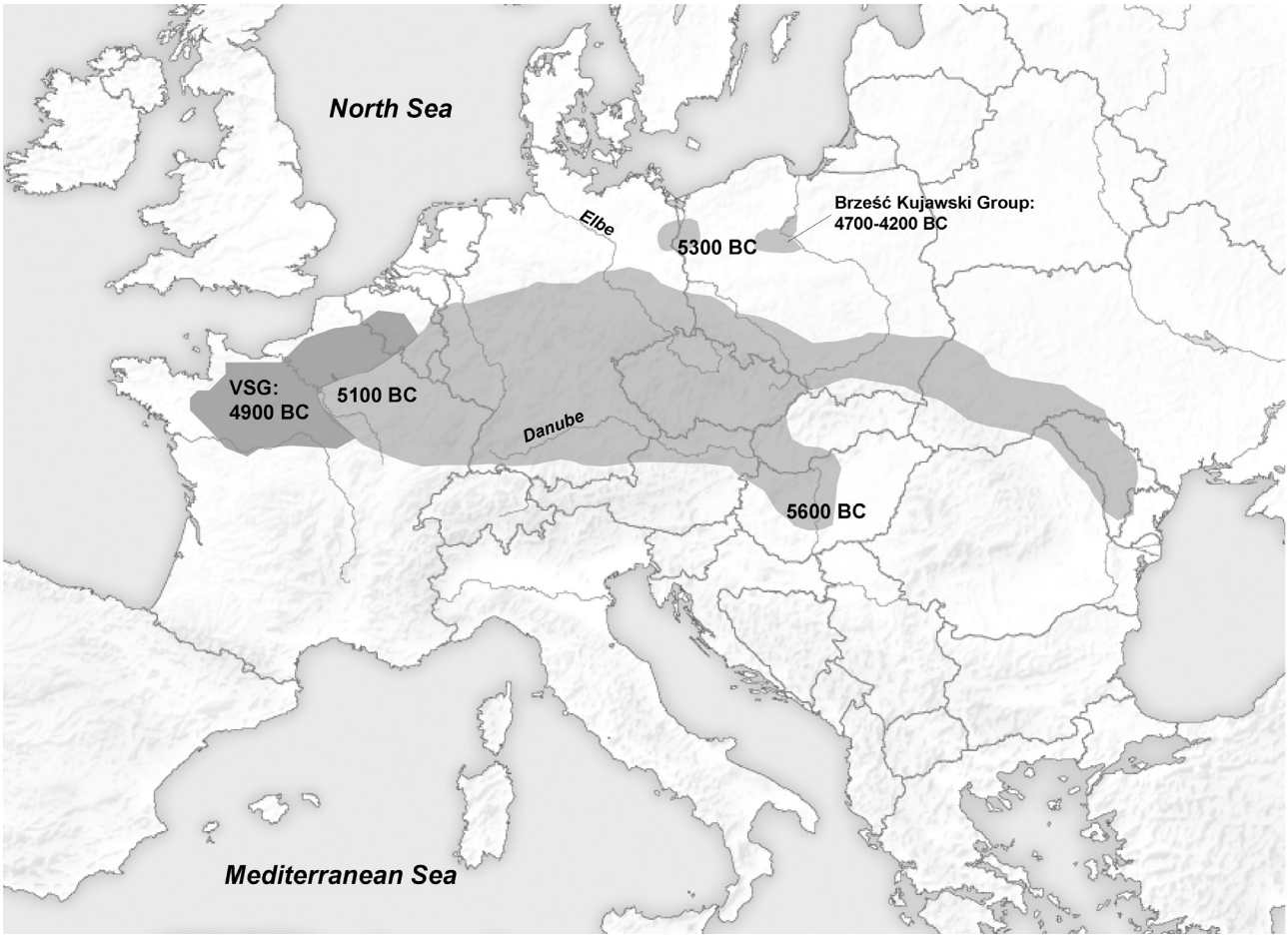

Figure 11.1. *Riverine interior central Europe, the 'Arcadia' of this essay, settled by farmers in the late sixth millennium and fifth millennium* BC. *'VSG' refers to the Villeneuve-St-Germain Group of the early fifth millennium* BC. *Note the exclaves of early farmers along the lower Oder and Vistula on the North European Plain.*

First principles: people, motivation, identity, commitment

The conceptual dichotomy between colonizing farmers and indigenous foragers is grounded in the assumption that each subscribed to a 'groupthink' mentality that determined their affiliations, priorities, motivations and identities. This fundamental assumption is that people defined their identities exclusively on the basis of whether they were hunters or farmers, and that these identities were fixed and unchangeable over the lives of individuals and from one generation to the next. John Robb (2013, footnote 3) calls this the 'cowboys and Indians' approach. Robb points out how we have been shackled by such dichotomies and stresses the heterogeneity of the Neolithic experience in time, space and process. He argues that the Neolithic consists of 'many small elements – human moments of choice and action' as well as emergent properties that cannot be reduced to such moments. Foragers were also confronted with moments of choice and action.

In order to break through the conceptual log-jam of the last decades, we need to go back to first principles and think about the landscape of central Europe during the sixth and fifth millennia BC, as inhabited by thousands of individuals. People: men, women and children. It is difficult to say how many. If the area of central Europe is taken to be about 750,000 square kilometres, even a density of little more than one person per square kilometre yields a population of a million souls spread across the Danubian world at the end of the sixth millennium BC. Even if that is a high estimate, we can be reasonably confident that at least several hundred thousand people inhabited farming hamlets and foraging camps from Ukraine to France.

Each of these many thousands of people saw the world just slightly differently from the others. For example, each person had a unique set of memories.

Their landscape was composed of inhabited settlements, abandoned settlements, fields, paths, trails, grazing spots and natural features, each of which had a meaning and a history. Some were optimists, others were pessimists. Some were confrontational and assertive, others were conciliatory and reserved. Each had a somewhat different set of priorities and motivations from the next. As archaeologists looking back over seven millennia, it is easier for us to see them as parts of homogeneous collective entities, and yet they were far from being that. Read any ethnographic account of communities in lowland South America or highland New Guinea to see how individual personalities shape the character of each household and hamlet.

As a proxy for individuals, archaeologists often focus on households. Houses are visible in a way that people are not, and they provide some physical substantiation for the people who once lived in them. Since the 1980s, the Neolithic household has emerged as a fundamental unit of decision-making, but this construct is subject to some caveats. Households comprise individual members, and each member pursues an agenda which may or may not be aligned with those of the other residents. Divisions by gender were probably common, for example. Many different factors enter into household decisions. They are often not made on a rational or utilitarian basis and may well not reflect a consensus.

At the same time, this is not to deny that the subsistence practices of any individual farming household or foraging band were not important in framing the identities of its members. Farming principles and practice were a major preoccupation of almost everyone in Neolithic society. The growing season split the solar year into two parts, and the gestational periods of cattle, sheep, goats and pigs provided another yardstick for measuring time. Sedentary life conditioned intense social relations among kin, requiring conflict resolution and cooperation. Foragers would also have been bound to a seasonal round. The vernal florescence of the forest floor and the subsequent profusion of nuts and berries would have been critical. In some cases the foraging bands may have corresponded to kin groups, while others may have been composed of both related and unrelated individuals.

Elsewhere (Bogucki 1995), I have made the case that the earliest farmers of central Europe exhibited a certain degree of conservatism in their locations, house forms and ceramic decoration. This collective trait masks the fact that, within the general discipline imposed by these standard forms, there was considerable latitude for individual variation. Each Neolithic house in central Europe is different in its ground plan and arrangement of posts, for example. While certain settlement locations were preferred in the loess basins, we also find Early Neolithic sites in the lowlands of northern Poland and in the foothills of central European mountains. People clearly thought outside the box when it was in their interest to do so.

It was also a violent world. The discovery of the mass grave at Talheim in the 1980s revealed that farmers had to fear other farmers, for the impact holes on skulls corresponded to the ovate cross-section of Danubian ground stone axes (Wahl & Trautman 2012). Several centuries later, at Osłonki in Poland, circular holes in skulls of individuals who died violently corresponded to the round cross-sections of antler 'T-axes' that are often found in male burials (Lorkiewicz 2012). Farmer-on-farmer violence is not entirely surprising. Mobile foragers can respond to conflicts by moving, while relocation is more of an effort among sedentary people and they are more likely to stand their ground. Nonetheless, conflict resolution by relocation can also be cited as a contributing factor in the dispersal of farmers across central Europe.

The young Neolithic household

When thinking about cultural transmission, time and social memory during the late sixth millennium BC in central Europe, we need to take into account the relatively brief duration of each generation. Rather than 20 or 25 years, Kilmurray (2009) has persuasively argued that a more accurate length of Neolithic generations would be of the order of 15 years, with relatively few people surviving beyond 30 or 35. Based on the skeletal sample from Osłonki and Brześć Kujawski (Lorkiewicz 2012, 55), I would suggest that 40 is a more reasonable threshold for becoming a scarce elderly person in the Neolithic, for the average age at death of males at these sites was 35.8 and females 33.2, but this does not change the main point.

Short Neolithic generations have two important implications for the current discussion. First, it means that the most significant social actors, the adults in charge of households who made key decisions within the Neolithic hamlet, would have been young by our standards, many in their late teens or twenties. Second, it means that grandchildren did not know their grandparents for very long, if at all. Active young adults of each generation bore the burden of doing the memory work for the next, rather than a large group of elders, and most would not live to see their grandchildren reach adulthood.

Young people lack experience and the wisdom that comes with age. The young people in charge of Neolithic households would have made many bad choices during their relatively short tenures. This is

another way of saying that they would have done many stupid things that they would probably not live long enough to regret. Indeed, it is almost miraculous that some succeeded as well as they did. Young males everywhere are especially impetuous, and the extent to which brutality is manifested in the archaeological record perhaps resonates with that trait. Individuals who passed as wise old elders were probably so physically debilitated by that point in their lives that they could hardly stand in the way of young men making bad choices.

At the same time, 20-year-olds, especially in groups, accept risks that their more averse elders would not. Think of the 20-year-olds who flew bombers against the Third Reich with a high probability that they would not complete their tour of duty. Admittedly, they were under orders, but they also were motivated because many of their fellow 20-year-olds also accepted the odds. From this perspective, imagining groups of 20-something farmers setting up settlements in the forests of central Europe 7000 years ago does not seem so unrealistic.

Empty space and borderlands

The first farming communities of central Europe with longhouses are typically grouped into clusters, known as 'settlement cells' or *Siedlungskammer*, mainly along brooks. Although these settlement clusters were not as thickly settled as the palimpsests of longhouse outlines suggest, social interaction among individuals and households within them must have been intense nonetheless. Rivalries, alliances, factions, conflicts and simply the interaction of daily living were probably both invigorating and enervating. The borderlands and interstices outside these settlement clusters would have provided relief from this intense sociality, so in addition to hunter-gatherers seeking to avoid farming communities, they would also have attracted birthright and convinced farmers seeking to get away. The story of Ötzi two millennia later might suggest that a desire to escape – something – was present among some early farmers in central Europe.

Tantalizing evidence of the presence of early farmers in the interstices among the settlement clusters has rarely been considered comprehensively. Examples such as a Danubian core found at the foot of the Tatra peaks (Tunia 1977) and traces of an early farming presence on the limestone plateau of the Swabian Alps (Knipper *et al.* 2005) all speak to the fact that early farmers moved through and made use of these interstitial regions. These calling cards were left by individuals. They left no large settlements with longhouses, but people were there.

Of even greater significance would have been activity in the borderlands between farmers and foragers. The North European Plain was a borderland between the farming communities of riverine interior central Europe and the foragers of the Baltic and North Sea coastal zones. It is fundamentally a geographical concept that recognizes that the spatial patterning of forager activity and farming settlement defines the nature of their relationship. The intervening zone was not particularly attractive to the early farmers, nor did it attract the foragers to settle for long periods. But people did move through it, and eventually the worlds of the farmers and the foragers connected.

Who goes Neolithic?

A decision that individuals living in central Europe during the sixth millennium BC had to make was the extent of their *commitment* either to foraging or to farming. Welch (1996, 24) defines agricultural commitment as the 'organizational dedication to successful food production' and I believe that a similar concept of organizational dedication can be extended to foraging. Although they do not use the term 'commitment', a point made persuasively by Rowley-Conwy (2011) and Robb (2013) is that, once decided upon, the dedication to farming is virtually impossible to reverse. The popular idea that farming is something that can be pursued in a desultory fashion, practised in some years and not in others, does not hold up.

There are a variety of ways for people to attain the commitment to farming, to sustain a commitment to foraging and to form an identity based on their subsistence practices. I propose to enumerate them here, less of an attempt to group people into categories but to illustrate the options available, especially to indigenous foragers. A graphic depiction of their relationships can be found in Figure 11.2.

Although my emphasis in this essay is on human choice and action, most Neolithic people in central Europe during the late sixth millennium BC became farmers the old-fashioned way: their parents and ancestors were farmers. These individuals might be termed *birthright farmers*, which means simply that one's ancestors were farmers and their household practices farming because it is descended from a line (or lines) of committed farmers. Ultimately, this is the condition of all Neolithic households within a couple of generations, but during the dynamic period under consideration here, being a birthright farmer is but one of several options. Given the pressures to continue as farmers that are almost insurmountable, there is almost universally no reversion from bring a birthright farmer to being a committed forager.

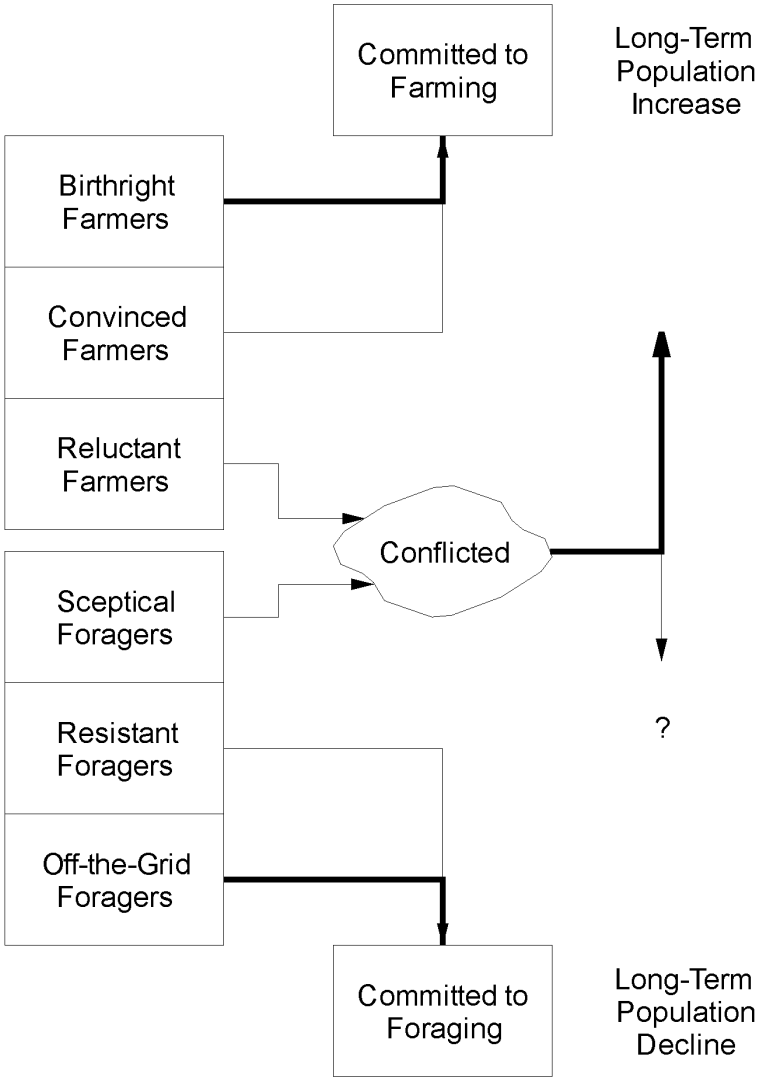

Figure 11.2. *Schematic representation of the categories of farmers and foragers in varying degrees of commitment to either approach for obtaining their nutrition.*

For decades, archaeologists have thought that an inherent superiority of farming over hunting and gathering easily persuaded foragers to lay down their leister prongs and take up ground stone tools. In some cases, it is likely that this actually happened. The reasons may not have been based in agricultural practice itself. Rather, we can imagine the attraction of the exotic and the novel to foragers bored with hazelnuts and terrified of wild cattle. Alternatively, Neolithic men seeking mates among available forager women may have caused the demographic collapse of small foraging bands. We can imagine foraging bands, especially those living not far from farming settlements, eventually becoming convinced that emulation of the farmers was a good thing.

Convinced farmers, then, would be a somewhat transient category of individuals during the transition from foraging to farming (observant readers will note that this and the previous category are drawn from terms used by the Society of Friends, or Quakers, which also reflects the fact that there is as much ideology as technique in the definition of Neolithic life). Convinced farmers began life as non-farmers, but either through marriage,[1] adoption or simple conversion found themselves during their adult decision-making lives practising agriculture. Their children will then become birthright farmers, although there could be some wavering in their commitment to farming early on. Some may not have been convinced easily and were forcibly incorporated into Neolithic society.

A middle category is comprised of what I call *reluctant farmers* and *sceptical foragers*. Both these groups are conflicted and are far from committed to farming. Reluctant farmers may have been pushed

into farming practice by being married to individuals from birthright or convinced households, or they may be pulled along by peer pressure as their fellow foragers became convinced and made the commitment. Sceptical foragers (meaning that they are 'sceptical about farming') are even further from a commitment to agriculture. They continue to practise foraging, but they are aware of farming techniques and sedentary life. Although open to being convinced, they hold back. Eventually, the descendants of both categories find their way toward a commitment to farming, with a small number going the other way.

This brings us to two final categories, comprised of hunter-gatherers living in the interstices among farming populations or on their margins. *Resistant foragers* reject the idea of agriculture and persist in their hunting and gathering. They have seen what it looks like and have decided that it is not for them. While they may have some sort of relationship with birthright and convinced farmers, they feel no motivation to convert themselves to a Neolithic way of life. *Off-the-grid foragers* go further in their rejection of agriculture as a way of life. They have physically relocated to refugia where their lives do not intersect at all with the grid of connections among farmers. Nothing will draw them back, and they insist on their ability to practise the foraging life to which their ancestors made a commitment many generations before. Most of their descendants will continue in the foraging life, although their numbers will become smaller and smaller as some begin to move through the spectrum towards agriculture.

The foregoing delineation of different categories of farmers and foragers during the transition to agriculture may strike the reader as over-fanciful. The point, however, is that the commitment to agriculture either is made at birth or through various stages of the persuasion of foragers to take up farming. In interior central Europe, the transition to farming seems to have begun with a large demographic disparity in favour of birthright farmers, which through a process of increasing returns led to their diaspora across central Europe. In the Baltic and North Sea farming frontier zones, however, populations were composed of a more heterogeneous mix of foragers in various stages of conversion, with birthright farmers just a small group at the beginning but growing over time.

Neolithic preoccupations

The landscape and economy of the first farmers of central Europe is seen through the prism of its settlements and the plant and animal remains that they contain. Thus, reconstructions generally depict several longhouses surrounded by fields and pastures, with the forest beyond. A small river flows nearby. The inhabitants build houses, till fields and tend the cattle, sheep, and goats. What else could they be doing?

We now know that their animals, particularly the cattle, were used for more than just meat. Thirty years ago, I made an archaeological argument for dairying based on two lines of evidence: the presence of perforated ceramic fragments interpreted as having been used as strainers in cheese-making; and the large numbers of cattle bones, along with the economic illogic of keeping so many cattle simply for meat (Bogucki 1984). This argument floated around in the literature for several decades, usually qualified by the user to indicate that there was no real proof, as an increasing number of Neolithic sites yielded sieve fragments. Sieves are especially common at lowland sites on the North European Plain along the lower Oder and Vistula. Recently, however, the analysis of residues in the sieve sherds has shown that a great many of them contain bovine milk lipids, which provides a smoking gun in the case for dairying (Salque *et al.* 2013). As a result, we must factor cattle use for dairy products into our models of Neolithic subsistence.

Dairying requires a significant population of lactating cows and calves that can be weaned at an early age. Half of those calves will be male, surplus to the dairy economy but still potential sources of meat. Yet we do not see large numbers of infantile or juvenile cattle bones in the faunal samples from early farming sites in central Europe, indicating that most males were allowed to grow at least to sub-adult or adult ages. What to do with them? I have recently suggested that we consider the possibility that they were simply released to range freely in the forested hinterlands of the settlements, a common cattle-management technique used by settlers introducing cattle to a forested environment (Bogucki 2013). The best examples of this practice come from the Spanish and English colonies of North America during the seventeenth century (Anderson 2004; Davis 2000). Dry cows might also have been so treated, with pregnant and lactating cattle brought into pastures closer to the settlements. When meat was desired, an animal could simply be culled from the herd populating the nearby forest. It would have been a lot of meat at once, so there needed to be some way of consuming it quickly, perhaps by having a feast or by preserving it through drying, salting or smoking.

Salt enters into the picture in another way, particularly when considered in the context of dairy production. Lactating cows have higher salt needs than other members of the cattle population, approximately half as much again as for growing cattle (Mehren 2010, cit-

ing National Research Council *Nutrient Requirements of Dairy Cattle* 2001). Although modern dairy farmers provide commercial dietary salt supplements, the salt intake of cattle during the Neolithic would have been determined by the saline content of their forage, with some plants providing more than others. Since cattle crave salt, animals grazed under open-range conditions would have gravitated towards forage with elevated salt content.

Archaeological studies of prehistoric salt use focus on salt production from seawater or brine springs by evaporation or by mining rock salt as part of a commercial process for exchange, which is characteristic of many parts of Europe later in prehistory. For Neolithic cattle, however, an important source of salt would have been inland saline habitats, where halophytic plants could be grazed. The remarkable thing is that many of these inland saline habitats map to areas of early farming settlement, such as the eastern corner of Kuyavia in the Polish Lowlands, or the Nida basin in the loess uplands north of Kraków (Piernik *et al.* 2006). Further west, the many Neolithic sites found along the Saale river in central Germany attest to an early fascination with saline habitats. There was no need to mine rock salt or evaporate brine to obtain salt for dairy cattle (meat preservation may have been another matter). Simply allowing them to graze on halophytic vegetation near salines gave them what they needed. Even better, they could probably find these locations themselves while ranging freely in the hinterlands of settlement areas.

Dairy production was probably not the only process technology practised by Neolithic farmers in central Europe. In contrast to the attention it has received in other parts of the world (e.g. Hayden *et al.* 2013), brewing of fermented beverages from grain has rarely received serious consideration in the European Neolithic (a notable exception being the paper of Dineley & Dineley 2000). Yet it is difficult to imagine all the barley and wheat grown by Neolithic farmers being turned only into bread that would just go mouldy and be eaten by rodents. Brewing beer is an obvious solution to the storage problem. Beeswax residue in Neolithic pots indicates that they could be made impermeable and suitable for holding liquids for extended periods (Salque *et al.* 2013).

A lot of water is necessary for brewing beer (see discussion in Hayden *et al.* 2013), and it needs to be heated. Bringing water in pots to the brewing operation from a stream or lake would be laborious. The discovery of wells on many sites of the sixth and fifth millennia in central Europe (Tegel 2012; Elburg 2013) indicates that it was not sufficient to draw water from the stream that is always near every early farming settlement. Inhabitants of these sites wanted water closer at hand, and the best explanation for this is that they were engaged in an activity like brewing that required them to have water nearby. Dairying also would have required frequent rinsing of pots to maintain some element of sanitation, and the water in the streams near settlements may have been too polluted with animal and human waste. In addition to providing abundant inspiration for speculation, the Neolithic wells have wood linings that reflect sophisticated carpentry skills. These talents certainly would have been employed in other wooden construction not preserved, thus adding another dimension to our understanding of how the first farmers of central Europe experienced their world.

Neolithic creole societies

In the centuries following the establishment of farming communities in central Europe, Neolithic societies experienced a process that I would call 'creolization' (Bogucki 2014). The term 'creole' has two constructions: one linguistic, another sociological. Creole languages are those in which a pidgin tongue develops into a stable language, while creole societies are formed from children of immigrants with the admixture of indigenous participants. In this instance, I am using the more sociological meaning of creole, which highlights the role of individuals and generations.

Creole societies exhibit cultural creativity in process while retaining ancestral forms derived from their source cultures (see essays in Baron & Cara 2011 for recent perspectives on creolization). The energy behind this creativity comes from their composition of *descendants* of communities established through a diaspora *plus* the incorporation of local populations and indigenous practices. Thus they are not the original people of the diaspora but rather their descendants, reinterpreting their ancestral values and styles again and again from one generation to the next, plus the inflow of external elements as indigenous people continually become engaged. This fluid and ambiguous character means that they defy fixed analytical categories, and their cultural expression is sometimes flamboyant when compared with their more conservative ancestors.

Two particularly vivid examples of what I consider to be creole societies in Neolithic Europe are the Brześć Kujawski Group (4700–4100 BC) in the Polish Lowlands and the Villeneuve-St-Germain Group (4900–4600 BC) in northern France (and its congener, the Blicquy Group of Belgium). In both cases, we see the re-interpretation of classic Danubian forms such as longhouses and pottery with distinctive features. Earlier burial rites are recast as 'microcemeteries' within

settlements, which indicate deliberate construction of memories in a domestic context. At the same time, we see novel elements of body ornamentation in burials, such as the copper ornaments in the Brześć Kujawski Group and schist bracelets in Villeneuve-St-Germain. Antler T-axes and massive bone cleavers in the Brześć Kujawski Group suggest contacts with contemporaneous foragers in the Baltic zone, for in my view these are not Danubian forms (Bogucki 2008).

Creolization is very much a product of individual choices about how much to imitate and reproduce the parent culture and how much to promote distinctiveness and even flamboyance in cultural expression. Many of these choices are best seen in the variability in household-level craft production and mortuary practices. In addition, creole societies at the margins of interior central Europe may have provided an example of a type of farming community that was of interest to the successful foragers of northern and western Europe, sufficiently different from the Danubian way of life that clearly did not interest them for the previous millennium.

Reasons for optimism

As we approach the midpoint of the second decade of the twenty-first century, there are reasons for optimism in the study of the earliest farmers of central Europe. We are finally beginning to see beyond faceless populations composed entirely either of colonists or natives. Instead, focusing on individual and household autonomy and choice instead of collective action has the potential to result in a richer understanding of what happened in the final centuries of the sixth millennium BC and the first centuries of the fifth.

Enhancing this understanding are the contributions of science applied to the archaeological record. The genetic diversity of central Europe during this period is coming into sharper resolution (e.g. Itan *et al.* 2009; Brandt *et al.* 2013), including fascinating recent studies of the interdigitation among haplogroups characteristic of foragers and farmers (e.g. Bollongino *et al.* 2013). Strontium isotope studies have permitted the tracking of the mobility of specific individuals over their lifespans (e.g. Bentley *et al.* 2012), while carbon and nitrogen isotope studies have revealed new insights about individual diet and land use (e.g. Fraser 2013). Residue analysis that points toward the presence of bovine milk lipids on potsherds as well as the potential use of beeswax for waterproofing pottery (e.g. Salque *et al.* 2013) has enabled us to imagine specific activities in which the farmers engaged rather than generalized cultivation and animal use.

Moving beyond arguing over colonists and natives permits us to explore human motivations such as identity construction, memory, conflict and avoidance, joy and fear and many varieties of ritual expression. It can also stimulate new ways of collecting and organizing archaeological data and looking more closely at borderlands and interstitial zones. Far from being 'settled science', the study of the transition from foraging to farming in central Europe will provide future generations of archaeologists with a rich lode of data and ideas to explore.

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Note

1 We do not know whether the acquisition of forager mates by Neolithic youths was always consensual. The taking of captives by Native American tribes and their forcible incorporation into the captors' communities is well known, and it seems possible that this practice occurred in Neolithic Europe as well.

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