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I thank the two anonymous rapporteurs who, through their criticisms and comments, have led me to amend some paragraphs and clarify my ideas.

1. Introduction

- ¹ The material culture and the archaeological sites attributed to the Bell Beaker¹ in France are heterogeneous. This is a known fact. Describing this heterogeneity and drawing up an inventory of the paradoxes it produces and the difficulties it generates

would undoubtedly be commendable, although tedious. However, it is clear that overcoming this inventory would solve nothing. What we would like to stress in this short article, by addressing a limited number of questions, is that the problems we are facing are certainly determined by the available data, but with the Bell Beaker we encounter coalescence and superimposition of:

- a geographical or spatial problem;
- an accumulation of methodological problems;

and more deeply,

- of a theoretical problem.

- 2 For a long time, we wrote with others that the “Bell Beaker Phenomenon” had a particular intrinsic characteristic, an originality that had never been seen before. This extraordinary “nature” explained the radically different interpretations that have taken place since the end of the 19th century. It also justified the fact that the Bell Beaker became a testing ground, a benchmark for all methodological and theoretical developments in European archaeology (Bailly 2002). We would like to argue here that such a conception of the Bell Beaker, that of a different “nature”, is a myth, not to say a mystification². Other European archaeological phenomena (not to mention the archaeology of other continents) were very similar during the Neolithic period. On the other hand, by making a reflexive effort, however limited, we can see that what the Bell Beaker mainly produces is to throw - in a very spectacular way - a harsh light on the aporia and shadowy areas of archaeological practice in France. The contrast with the study of the Bell Beaker in Germany is, moreover, quite striking. This French Neolithic “school”, although it multiplied large-scale field operations³, often with a facade of multidisciplinary, and by multiplying analytical methodologies, believed it could free itself from an explicit theoretical framework and a minimum of reflexivity⁴ by hiding a certain disciplinary confusion behind the complexity of the field operations.
- 3 Focusing on data from the French territory, let’s first look at geographical observations.

2. The French territory and the Bell Beaker: spatial logics and modes of dissemination

2.1. Spatial logics

- 4 While, on the one hand, the distribution of the items attributed to the Bell Beaker today concerns a large part of the European continent (Norway and Greece included), its presence in Morocco has recently been highlighted and, on the other hand, the question of the “origin” of the Bell Beaker paralyzes and scleroses many discussions, the study of the Bell Beaker in France appears to be decisive, as the country’s territory has a central position in the European isthmus. It should be remembered that this part of the European territory is the only one to be bathed by the Mediterranean Sea, the Atlantic Ocean and the North Sea.
- 5 Although the cartography of the Bell Beaker itself is deficient, three salient facts can be identified quite easily:
 - In general, the presence of the Bell Beaker in France (material items, tombs, and in a more ambiguous way the dwellings, etc.)⁵ is low compared to regions such as Bohemia, Moravia,

Bavaria, Wiltshire, the Tagus estuary, etc. No region in France offers such densities of Bell Beaker sites.

- Some regions are completely devoid of data. There are therefore areas where it can be argued that there was no Bell Beaker presence⁶, without it being possible to affirm that these areas were uninhabited at the end of the 3rd millennium BC. It must therefore be agreed that a non-Bell Beaker settlement probably existed at the end of the 3rd millennium, but the idea of areas not yet permanently inhabited cannot be totally excluded.
 - From a quantitative and qualitative point of view, Bell Beaker sites in France are poor and do not compare well with other regions such as Bohemia, Moravia, the Central Meseta or the Tagus estuary. In these areas, the richness and diversity of the archaeological remains are striking for any archaeologist working on French territory.
- 6 It must therefore be agreed that the distribution of the Bell Beaker on French territory is structured by various processes that we have not yet distinguished.

2.2. Heterogeneity of data on the Bell Beaker

- 7 Although the Bell Beaker is first identified by complex funerary practices that break with existing traditions in Central and Western Europe during the first half of the 3rd millennium BC, the heterogeneity of the data is also reflected in qualitative terms.
- The sites containing material culture considered to be Bell Beaker on French territory are mainly settlements (Bailly & Salanova 1999). Observations relating to the architecture and organisation of the dwellings are uneven and disparate. There is no⁷ Bell Beaker architecture. This aspect needed to be pinpointed. Architecture is the most stable and rooted material element of a culture. The archaeological consequences of this fact known to geographers and anthropologists (Deffontaines 1972, Oliver 1990) have been widely explored by the work of A. Coudart (1999 among others references) and P. Pétrequin (Pétrequin 2005, Pétrequin *et al.* 1999). It is therefore particularly striking, even significant, that the beakers cultures of the 3rd millennium have standardized funerary traditions, an identifiable material culture but no specific architecture. This is clearly demonstrated by the recent book on Bell Beaker habitats in Europe (Gibson 2019).
 - Despite the notable and consistent exception of the Alsace region, all the burials attributed to the Bell Beaker in France shows a significant diversity (Salanova & Tchérémissinoff 2011). Funeral practices are far from the usual standards of Central European necropolises. Some observations are quite unique (Blaizot & Vernet 2004). They also show only a few points of comparison matching with the archaeological data from the Iberian Peninsula.
 - The spatial distribution of the Bell Beaker and the central role of funerary practices underline the close relationships with the Corded Ware Culture (Benz *et al.* 1998, Strahm 2004, Vander Linden 2004 and Besse 2003a). In Central Europe the opposition between Corded Ware Culture and the Bell Beaker is considered 'dialectical' (Benz *et al.* 1998 or more recently Großmann 2016) although many differences appear: ornament, frequency of metal, lithic industry, etc. (Benz *et al.* 1998, Strahm 2004, Vander Linden 2004 or Besse 2003a).

2.3. Bell Beaker "Poles"?

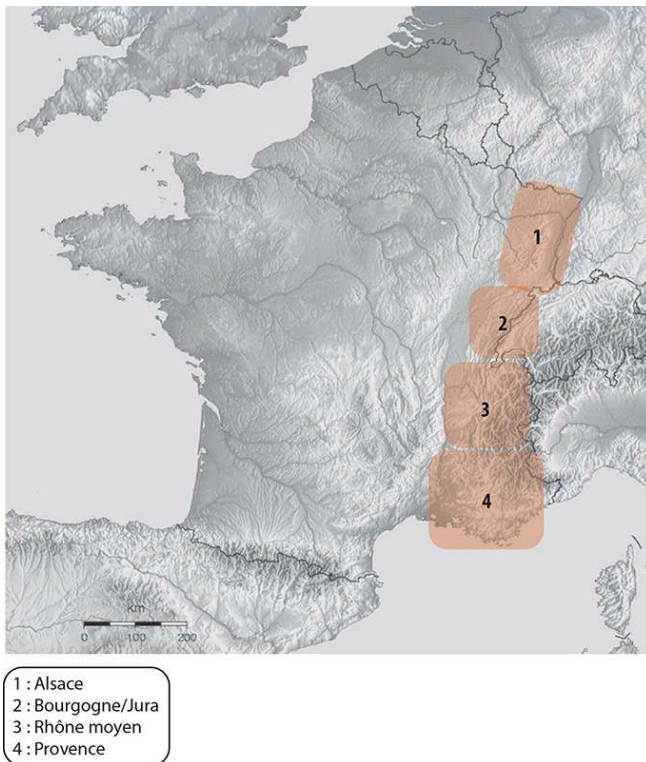
- 8 Due to its position within the European isthmus, the French territory is perceived as a key region to grasp the complex dynamics of the Bell Beaker and the possible comings and goings of individuals or segments of populations (Desideri 2007, Desideri & Besse 2012). On the other hand, although it is not very clear what the authors meant exactly

by “origin”, since the beginning of the 20th century (del Castillo Yurrita 1928) debate has focused on the “origin” of the Bell Beaker, whether Iberian or Dutch (Guilaine 2004, 2009, 2019), obscuring complex or different approaches⁸. If there is no question of denying the wealth of archaeological corpuses discovered in the Iberian Peninsula or in the sites from the Rhine-Meuse Delta, two facts can simply be highlighted.

- First of all, several regions have a possible transition from the Pre-Bell Beaker Neolithic to the Bell Beaker and have not been selected as potential centres of origin (Jutland, Saxony, Bohemia, Moravia, Poland, Hungary, etc.)⁹. Is it the examination of the archaeological data which is at the origin of this lack of interest or is it the linguistic difficulty which grips all Bell Beaker specialists? To what extent does the mastery of the languages of Central and Eastern Europe influence our understanding and interpretation of this archaeological “phenomenon”?
 - An examination of the non-ceramic productions of the Bell Beaker Phenomenon reveals that the spatial dynamics are structured across the European isthmus not between two poles (Iberian Peninsula and Central Europe) but at least across three, the third being the Armorican Peninsula (Nicolas 2016). The arrowhead models in particular are neither part of an Iberian nor a Dutch tradition (Bailly 2014). In fact, many elements of Bell Beaker culture show processes of diffusion and imitation on the scale of Central and Western Europe (Fitzpatrick *et al.* 2016).
- ⁹ Let us therefore agree that there are components that are very largely underestimated and methods of dissemination that we are not able to grasp. Let us try to identify the scenarios in a few regions of the French territory which constitute interfaces between Central and Western Europe.

3. From Alsace to Provence, several scenarios? (fig. 1)

1. Location of the different regions addressed



- 10 For a long time, the Rhône-Rhine axis has been closely examined by scholars interested in the Bell Beaker for obvious reasons; it is a link, an umbilicus between two worlds (North Sea and Mediterranean), it is also the interface between Central and Western Europe. Analogies between the Bell Beaker productions of Germany and the South of France have long been considered¹⁰. A brief, even superficial comparison of the regions crossed by this axis will show the complexity of the scenarios and the possible separation/independence of the regions involved. Moreover, the Rhine-Rhine connection between Bell Beaker in Germany and Bell Beaker in the north-western Mediterranean has recently been re-evaluated (Bailly & Besse 2004, Jeunesse 2014a, 2014b; Favrel, this volume). Links between Northern Italy and non-Mediterranean France have been highlighted.

3.1. Alsace

- 11 In Alsace, while the presence of the Bell Beaker is known for a long time, while remaining rather discreet, development-led archaeological fieldwork has largely renewed the data. On the one hand, the settlements belonging to the Bell Beaker remain few in number but are now indisputable (Denaire & Croutsch 2010). On the other hand, there are now many more tombs. The excavated burial deposits are very similar to those found in Bavaria, Moravia or Hungary. Moreover, the burials are grouped together: they are small necropolises in accordance with what is known in southern Germany for instance. Recent data in Alsace confirm that this region belongs to the Central Europe realm of the Bell Beaker (Vergnaud 2014). This aspect is reinforced by the similarities with recent discoveries of dwellings and tombs attributable to the Corded Ware Culture (Denaire *et al.* 2014).

32. From Burgundy to the Swiss Jura

- 12 Further south, in Burgundy, Franche-Comté and the Swiss Jura, the available data are much more diverse (Bailly 2002, 2003b, Salanova *et al.* 2005). The use of collective burials in caves or a few poorly documented individual tombs is attested. The reuse of megalithic monuments is identified. Metal is very rare in this region and there is no metallurgy attributable to the Bell Beaker (Cattin 2008). The settlements are mainly known in the valleys: wide valleys as along the banks of the Saône river, smaller hydrographic modules in the north-western Jura, or even in dry and steep valleys as in the southern French Jura, as illustrated by the archaeological site of Derrière-le-Château in Géovreissiat/Montréal-la-Cluse (Ain), a case which can be compared to the settlement of Crédéry, located in Satigny's territory in the canton of Geneva (Besse *et al.* 2009). Further north, the Bevaix plateau (Canton of Neuchâtel, Switzerland) is a rare, poorly preserved but very interesting case, as it confirms the hypothesis of a relocation of the settlements synchronous with the transition between Auvernier-Cordé and Bell Beaker. In fact, while the first half of the 3rd millennium was densely populated on the lake shores of the Three Lakes region or the Combe d'Ain, the dendrochronological sequences of the lakes elapsed from the 26th century onwards and then came to an abrupt end in the second half of the 25th century (Arnold 2009: 220-221). In these last occupations, only the Cord Ware Culture is present. There is no Bell Beaker lake dwelling.

3.3. The middle Rhône Valley and the Northern Alps

- 13 Along the middle and lower reaches of the Rhone valley, a fairly similar pattern can be described: collective burial sites, the presence of a few individual graves; most of the identified settlements are located on alluvial plains. The question of post-depositional processes and the over-representation of sites from highly excavated areas are decisive in the constitution of the available corpus. However, a probable relocation of the habitat can also be considered here.
- 14 Bell Beaker settlements are generally located in places that were not occupied in the first half of the third millennium¹¹. The lakeside habitat of Charavines, at least one occupation of which is dated by dendrochronology from the beginning of the 26th century BCE, and the lakeside dwellings of the lakes of Savoy provide very recent dendrochronological dating (e.g. Conjux, Station 3, dating from the 25th century), but the associated archaeological remains do not have any Bell Beaker components (Marguet & Rey 2007, Rey & Marguet 2016: 89-90).

3.4. Provence

- 15 At the southernmost of our meridian transect, the south-east of France offers a rich but particularly complicated panorama (Lemerrier 2004). Indeed, ancient excavations, stratigraphic problems, intense erosion, inadequate study methodologies and misinterpretation of data constitute a mixture that is today inextricable and singularly difficult to deal with. A panorama of the problems has recently been drawn up (Caraglio 2015), to which we refer the reader.

- 16 Let us limit ourselves here to a few facts. In this vast ensemble, we recognize individual burials, isolated in a non-Bell Beaker context or in small groups of tombs (with an ill-defined chronology¹²); the reuse or use of collective burials, and among the largest and most monumental of them, as at Fontvieille (Bouches-du-Rhône). The settlements are varied and scattered. Without going into details (Caraglio 2015, 2016), we cannot speak of a settlement pattern shift and it must be noted that a large number of the Bell Beaker sites have already been occupied previously. This is a particularly complex question, because the usual interpretation of the diffusion of the Bell Beaker in Provence and in the south-eastern quarter of France is based on the existence of a “historical” process articulated in three stages: the presence of rare “ancient” Bell Beaker objects (?) in the pre-Bell Beaker Neolithic dwellings, a reduced and progressive occupation of these sites by “the Bell Beakers”, and then the creation of new settlements where the totality of the material culture appears to be “Bell Beaker”. This approach is underpinned by the existence of a pattern of diffusion of populations from the Iberian Peninsula¹³, even invoking the archaeology of the Early Iron Age in the South of France as a justifying analogy (Lemerrier 2012, Lemerrier *et al.* 2014)¹⁴. Careful examination does not support such a pseudo-historical scenario, even though it is supported by a prolific bibliography.
- 17 Let’s briefly establish a preliminary list of obstacles that come to mind even before an in-depth examination of the contexts and data.
- With the exception of “common ceramics”, we do not have a precise ceramic typology that would allow us to establish a robust typological structure. Nor do we currently have an inventory of single material culture assemblages (« ensembles clos »), an essential element for any chrono-typological construction¹⁵. Consequently, we do not have a matrix of association of types, and consequently a seriation. However, these facts in no way prevent specialists of the Mediterranean Bell Beaker from establishing chrono-typologies¹⁶, or even historical-cultural phases and scenarios!
 - This scheme imposed for southern France is in fact the result of the application of the “Dutch model”, so called since the 1980s to refer to the work of I. Lanting and J. van der Waals (1976), on data from Mediterranean France. This transfer becomes clear when we look today at the publications following the international colloquia dedicated to the Bell Beaker: Oberried 1974 (1976), Nice 1976 (1984), Riva del Garda 1998 (2001). No demonstration is ever offered. The opinion of the authors seems to be a sufficient guarantee of veracity.
 - The Iberian origin, preferred interpretation since the beginning of the 20th century, is considered the only one possible and is described as a process of allochthonous settlement, a migration, which is not supported by data. A more recent formulation considers the displacement of small groups of people or isolated individuals from the Iberian Peninsula (Lemerrier *et al.* 2014: 197-198). There is a set of contradictions and even misinterpretations in this scenario that has been published several times: the Iberian origin is not sustainable and if people have moved from the Iberian Peninsula to Central Europe, it is certainly not the process that ‘brings the Bell Beaker’ to South-Eastern France.
- 18 From this barely sketched out panorama, two observations emerge. Firstly, more than the development of archaeometry, the data of development-led archaeology have - here again - completely renewed the questions of the transition from the Final Neolithic to the Early Bronze Age. Secondly, the traditional framework of “protohistorical” interpretation, coined by the search for an elusive origin and a historical-like reading of non-established chrono-typologies, has been emptied of its

meaning. The only possible consensus does not go very far. The situations are highly contrasted and heterogeneous from one region to another (fig. 2).

2. Sketch for regional comparison

		Alsace	Bourgogne-Jura	Rhône moyen	Provence
Funerary contexts	Isolated Individual tombs	yes		yes	yes
	grouped Individual tombs (graveyard)	yes			yes?
	Funerary cists or hypogea (reuse)		yes	yes	yes
	collective burial in a cave		yes	yes	yes
Dwelling contexts	Settlement shift/new locations	yes	yes	yes	
	Settlement continuity				yes

4. Forms and manners: the techniques of the Bell Beaker

4.1. Variability as an obstacle and as a principle

- 19 We know little about the Bell Beaker, however we can take a few things for granted. First of all, it is an elaborate ceramic production whose initial use could be the consumption of probably alcoholic beverages, of which we can presume a ritualised use (Guerra Doce 2015, Sherratt 1987) and the sharing of “public representations” (Sperber 1996) which motivate its distribution over a large part of Europe, a path which began in the Anatolian Plateau. This aspect is mainly established for Central Europe in funerary context. However, it should be pointed out that these vessels do not circulate over long distances (Convertini 1996 and later works, Salanova *et al.* 2016). We have also known for some forty years now that this original distribution of artefacts in Europe is also related to other archaeological items than decorated ceramics, mainly ornaments and weapons, the *Beaker package* (Burgess & Shennan 1976). The Bell Beaker is about the subjects: bodies and persons.
- 20 Numerous typological studies have proposed the construction of chrono-typologies in order to propose scenarios of diffusion and to support historical interpretations since the beginning of the 20th century. There are many such scenarios, none of which is free of difficulties or even contradictions. Among these difficulties, the variability of material productions attributed to the Bell Beaker appears to be the most formidable. It forces some researchers to get around it by establishing historical-cultural scenarios without first establishing a chrono-typology (see above). Others try to cover the whole space which seems to be less of an infinite extension than an irreducible principle (Boast 1998) or try to thwart the aporias of classification (which always prioritizes the descriptors) by drawing out networks of formal similarities in order to derive a historical reading (Gallay 1997, 2001).
- 21 But the real problem is theoretical. Variability indirectly raises the question of reification and identification: what is truly Bell Beaker? Does this question even make sense?

4.2. “Communities of practice”: hybridity, replication, drifts

- 22 Faced with these problems, the technological approach has been in use as early as the 1970s in order to better grasp the meanings of variability (Van der Leeuw 1976). It should be pointed out that it has been little followed in the areas that interest us here. Behind this typological diversity, i.e. the different ways chosen (selected?¹⁷ to *do things*, two levels of intention must therefore be taken into account: use (or downstream part of the chaîne opératoire) and manufacture *for* (upstream part of the chaîne opératoire). That is to say, to conceive, downstream, a performative aspect, the use of these vessels, which is a matter of belonging to a standard or a set of rules and values¹⁸, or in other words, public representations and, upstream, a technical and economic, individual, sensori-motor aspect which is a matter of learning and intergenerational transmission of potting techniques skills in this case.
- 23 In this context, archaeometric approaches appear confusing for those who seek simple relationships between the chaîne opératoire and the materiality of the results of this process (Salanova *et al.* 2016: 729-730). Moreover, the technological characterization of the settings makes it possible to group together productions behind the idea of a standard (Salanova 2000 and numerous subsequent publications), a sort of “ideal-type” for archaeologists, in order to reduce the diversity of observations. In the end, this ideal-type is more a matter of teleology, a frequent bias in archaeology, than of social analysis. This notion of the Standard, although useful at first glance, ultimately obscures what we are trying to identify: the meaning of the differences, the meaning of the deviation from the norm. For it is in the difference between the standard and the observed material achievement (the performance) that the role of the actors, their intentions and their background are revealed. The chaînes opératoires are rarely rigid, especially when they travel. The notion of a community of practice (Wenger 2005) is then much more useful in enabling us to understand the difference between sharing values and respecting a technical standard. What counts is the performance and reiteration of the sharing of values materialized here by a ceramic tradition, and which are underpinned/justified by devices that undoubtedly have no material anchorage.
- 24 What is significant is the gap in skills and know-how, which is the opposite of the Standard: what we find in the extreme heterogeneity of ceramic productions. What appears, therefore, is that subjects have shared a set of public (collective) representations, which are at odds with their values, practices and skills (practical knowledge is mental representations applied). They attempted to produce objects which, in most cases, had an original appeal, a strong cognitive salience (Landragin 2004) that it would be interesting to explain. Why such a craze, such a surge in the renewal of forms and practices? We must therefore conclude that the observable variability of Bell Beaker ceramic productions, especially in Western Europe, is the result of the practices of potters who want to include their production in an original repertoire of forms¹⁹. This repertoire is at odds with the local context in which they evolve, without mastering its technical springs and know-how²⁰. To imitate without owning the tools necessary to process the chaîne opératoire, to copy without understanding the technique or having the driving know-how. It should be noted that the large Bell Beaker vases of the AOO/AOC type are the result of a great technical mastery, combining complex ideomotor know-how with technical tips that potters in Western Europe are unaware of (for example, the spectacular Zlota vases from the

Polish necropolises). In contrast to Central European production, many of the Bell Beaker vases from Western Europe are characterized by thick walls and often poorly controlled decoration. This process of imitation is far from being unique and archaeology provides many examples of this (Cassen 2003, Stockhammer 2013, 2017), but its scope is considerable²¹.

4.3. Grog temper and cord

- 25 In the same vein, it would be possible to observe the spatial distribution of certain typological elements of the Bell Beaker and their more or less modified replicas: archer wristguard, bow-shaped pendants, V-buttons, etc. But with few technological arguments available. On the other hand, within the space we are considering, a certain number of typo-technological elements can be taken into account, although the data is partial.
- 26 Among the important elements of ceramic technology²² that should be systematically tracked in a Bell Beaker context is first and foremost grog temper (*chamotte*). This practice consists in reducing old vessels or shards to powder in order to add it to clay and strengthen the ceramic paste. The use of grog temper, present in Central Europe as early as the Early Neolithic is not attested in the Mediterranean region before the Bell Beaker (Convertini & Querré 1998), or was only identified at the beginning of the Early Neolithic sequence in the south of France. The presence of this type of temper is very frequent in Bell Beaker ceramic production in France and systematic in the Bourgogne-Jura region (Convertini 1996, Rodot & Martineau 2007). Prior to the Bell Beaker, this technical trait seems to be systematically present in the Corded Ware Culture (since the earliest phase of the Auvernier Cordé Culture of the Swiss Plateau in the 27th century BC). It is also identified in the Chalain group (Giligny 1993, Rodot & Martineau 2007). In Switzerland, the Netherlands and Scandinavia, this technical trait is also associated with the Corded Ware Culture (Beckerman 2015, Holmqvist *et al.* 2018). Grog temper can be interpreted as a technical choice of cultural value that is established not in the “*derniers degrés du fait*”, i.e. in the stylistic repertoires, but far upstream in the potting *chaîne opératoire* (Lemonnier 2012), with the processing of ceramic paste. This is a major argument for establishing a continuity between Corded Ware Culture and the Bell Beaker, that is, between Central and Western Europe, as documented by the north-south transect we are studying here.
- 27 Corded Ware Culture and Bell Beaker also share a common technical feature: the use of cords or textiles to create ceramic decorations. Indeed, both sets are characterized by decorations created by printing cords and textiles on the still wet surface of the pottery during the pot making process. It is likely that this practice is involved in the very coiling of some beakers (Van der Leeuw 1976) with the use of very fine fibres (Grömer & Kern 2010) as found in the culture of Złota in Poland in the second quarter of the third millennium BC. It should be noted, however, that in the Corded Ware Culture, the impressions of cords on fresh paste are not only found on beakers, since they are also found on amphorae, and that these impressions, which are not always displayed horizontally, as with beakers, may have a unique aesthetic appearance and be applied in a reduced manner on the wall of vases or on handling elements. Again, it should be pointed out that this type of practice does not originate from the Corded Ware Culture. The use of cord decoration goes back much further in time, to the 5th millennium, in

Eastern Europe (Burdo *et al.* 2010), to the farthest reaches of the steppes of Central Asia. It is a long-lasting technical tradition totally foreign to the Mediterranean in general and the Iberian Peninsula in particular.

4.4. Follow the arrows

- 28 Much has been written about arrowheads in Bell Beaker context and we quickly mention here points detailed elsewhere (Bailly 2002, 2014, Furestier 2007, Nicolas 2016). Two major morphological traditions oppose each other in Europe during the Bell Beaker: triangular arrowheads with a concave basis and bifacial façonnage, inherited from large models in Central Europe; pedunculated triangular arrowheads with bifacial façonnage in the West, including the British Isles. However, three regions have different ranges of arrowheads: In the Iberian Peninsula they are absent and replaced by copper tips; in Denmark and northern Germany, there are numerous small, narrow, concave-based arrowheads (present as early as the Einzelgrabkultur or EGK). In the area of interest here, the spatial distribution of the two main traditions is superimposed, with a North/South gradient. The concave-based arrowheads do not extend into the southern half.

5. Conclusion

- 29 Structured by the heterogeneity of the available data and the irregularity of its geographical distribution in the Europe of the 3rd millennium B.C., the “Bell Beaker Phenomenon” or “the Bell Beaker” can no longer be considered today as an archaeological process of a different or unprecedented “nature”. It is a process of diffusion and change, as can be identified in Neolithic Europe and in the archaeology of other continents. However, its extension and diversity require an approach that takes into account the different spatial scales involved (as shown by studies of ceramic petrography, for example), gaps and discontinuities. Moreover, beyond the typological aspects (and therefore analogies), it is the technological differences that can inform us about the processes at work. The relationship between the variability/homogeneity of the repertoires of shapes on the one hand and the variability/heterogeneity of the production *chaînes opératoires* on the other hand offers us an interesting avenue of investigation, provided that we clarify the scenarios which determine the dissemination, replication (and deformation) of these new forms, most of which come from the East.

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NOTES

1. Here we mean what is generally accepted by the archaeological community to qualify as Bell Beaker. No specific definition is given here.
2. We deliberately limit the bibliographical references here. We wish to keep a constructive critical and reflexive aspect to this text and not to transform it into an *ad hominem* criticism, which would bring nothing.
3. Development-led archaeology in France, through the scale and ambition of the work carried out, has radically transformed our knowledge of the archaeology of the national territory. The scientific advances are remarkable.
4. It has been written that the positioning of French archaeologists was a matter of "continental insularity". If the observation is less salient today than it was at the end of the 1970s, it is nonetheless real and constitutes an incongruity, especially when it comes to dealing with a question such as the Bell Beaker.
5. Here again, we follow the published literature and do not question in these lines what it means to be (or not to be) Bell Beaker.
6. This does not mean that we conceive of the Bell Beaker as an ethnic entity or a people.
7. This idea put forward elsewhere (Bailly 2002, 2014) is further illustrated in a recent article (Lemercier & Strahm 2018). The unclear character of a good number of building plans and the

interweaving of different architectural traditions (see figure 3 of the article) is a source of curiosity. Until recently, such a panorama was impossible. It should be noted that in some cases the architecture attributed to the Bell Beaker breaks with earlier traditions, but this is not the case everywhere. However, we are still very puzzled about the meaning of the expression “coucous campaniformes” (*ibid.*: 471), etc.

8. Innovative approaches include the work of A. Gally since the late 1970s or the prematurely interrupted work of D. L. Clarke (1976, 1968).

9. See Guilaine 2004 and 2009. The recent article by J. Guilaine (2019) takes up this genealogy of ideas from a Mediterranean perspective in a very clear manner.

10. It is absolutely necessary to refer to the articles by A. Gally (1968 and 1988) and Pétrequin & Pétrequin 1978 in order to grasp the arguments of the debate.

11. In the Rhône valley, between Crest and Montélimar, the site of Le Serre 1 (Roynac, Drôme) offers a sequence of Bell Beaker and Early Bronze Age occupations (Vital 2008, Vital *et al.* 1999), while further north the site of Savasse has a long final Neolithic sequence and an Early Bronze Age occupation. The site is not occupied during the Bell Beaker period (Moreau *et al.* 2014).

12. What arguments allow us to attribute the necropolis of the Juilleras (Mondragon, Vaucluse) to the Bell Beaker?

13. The Bell Beaker would therefore be a people or an ethnic group. While waiting for an improbable demonstration, we shall stress how unfortunate this resurrection of the archaeology of peoples is and that this ethnic conception of material culture is contradicted by the totality of the Social Sciences... With such conceptions published and re-published, it will be difficult for prehistoric archaeology to claim any disciplinary credibility.

14. A very dubious analogy, moreover, when one consults the recent literature on the Early Iron Age in the North-Western Mediterranean. Among a very abundant bibliography, far from our subject, we will mention Pralon 1992, Herring 2008, and especially the fascinating articles by S. Verger (Verger 2003, 2013) as well as, more generally, the works of M. Dietler or M. Bats.

15. However, this fact has been established since the end of the 19th century and it remains the backbone of all European Pre-Protohistory since the work of J. J. A. Worsaae or P. Reinecke.

16. In 2001, a collective review article on the Bell Beaker of the South of France even proposed to define a late phase of the sequence on the discovery in surface prospecting of two decorated shards!

17. We do not use memetics. Among several criticisms that can be levelled at this *a priori* interesting approach, we can cite the « biologisation » of the representations that memetics induces. By definition, this approach excludes access to the social. It should also be noted that Darwinian or evolutionary archaeology has not retained the Bell Beaker as a subject of analysis (O'Brien & Shennan 2010, Shennan 2002).

18. This is no more and no less than the definition of a tradition by some cognitive psychologists (Boyer 1990).

19. Ethnoarchaeological or ethnographic surveys of techniques in West Africa describe similar phenomena about ceramics.

20. “Replication, or *strictly speaking* reproduction of a performance, if it never happens, is an exception. Under these conditions, the epidemiology of representations is first and foremost a study of their transformations” (Sperber 1996: 82). Our own translation.

21. By its characteristics and magnitude, the Chasséen at the end of the 5th millennium in Western Europe is a good comparison.

22. As early as the Early Neolithic period, opposition or even “repulsion” structured the production of ceramics with carbonate temper and grog-tempered ceramics (Binder *et al.* 2010: 118-119).

ABSTRACTS

The Bell Beaker is characterized by a very unbalanced spatial distribution and a very strong heterogeneity of data. Hiatuses and discontinuities are therefore an important part of the observations. This heterogeneity is reinforced by the technological variability of the productions, ceramic ware in particular. By examining a North/South transect over the eastern part of the French territory, from Lorraine to Provence, one can distinguish in these regions different scenarios of insertion of the Bell Beaker during the end of the 3rd millennium. The examination of these scenarios, by integrating the spatial distribution of the sites and the diffusion of some material culture items, allows us to raise certain precise questions. The deconstruction of the “Bell Beaker Phenomenon” is more necessary than ever and several paths are proposed.

Le Campaniforme est caractérisé par une répartition spatiale très déséquilibrée et une très forte hétérogénéité des données. Hiatus et discontinuités sont donc une part importante des observations. Cette hétérogénéité est renforcée par la variabilité technologique des productions, céramique en particulier. En examinant un transect Nord/Sud sur la partie orientale du territoire français, de la Lorraine à la Provence, on peut distinguer dans ces régions différents scénarios d'insertion du Campaniforme au cours de la fin du III^e millénaire. L'examen de ces scénarios, en intégrant la répartition spatiale des sites et la diffusion de certains éléments de la culture matérielle, nous permet de soulever certaines interrogations précises. La déconstruction du « Phénomène campaniforme » est plus que jamais nécessaire et plusieurs pistes sont proposées.

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Mots-clés: Campaniforme, périodisation, échelles spatiales, déconstruction

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