

Besprechungsartikel

A comparative linguistic approach to the history of iron-working among Savannah Bantu speech communities: a critical appraisal of Klein-Arendt (2004)

by Koen Bostoën

Klein-Arendt, Reinhard: Die traditionellen Eisenhandwerke der Savannen-Bantu. Eine sprachhistorische Rekonstruktion auf lexikalischer Grundlage. (Schriften zur Afrikanistik – Research in African Studies, 8) Peter Lang Verlag, Frankfurt am Main, et alia 2004. 735 pp. Price 89,10 €. ISBN 978-3-631-52172-4.

Reflecting on the historical implications of his Comparative Bantu studies, Guthrie (1970: 29) concluded that “the speakers of the proto-language probably knew how to forge iron before the Bantu dispersion began”. This conclusion was of major historical importance, since it seemed to provide lexical evidence for the then widely held belief among historians, archaeologists and ethnologists that the diffusion of iron metallurgy was linked to that of the Bantu languages. The history of iron-working in the Bantu domain has aroused linguistic interest ever since. More recent publications, such as de Maret & Nsuka (1977), Ehret (2001), and Vansina (2006) offered more data, threw a new light on the diffusion of metallurgical know-how, and radically changed our understanding of the role this technology played in the Bantu language dispersal. No study, however, has dealt with this question as extensively as Reinhard Klein-Arendt’s “Traditional iron-working in Savannah Bantu: a lexically based historical linguistic reconstruction” [my translations], which is the published version of the Habilitationsschrift he defended at the University of Cologne, Germany. R. Klein-Arendt pursued with this study a double goal, i.e. “both the creation of a broad empirical base and the development of new historical methods for the representation and analysis of linguistic data” (p. 299).

This first goal is achieved in an exemplary way thanks to the particularly voluminous appendix (“Kartenteil”), counting more than

430 pages, in which the author offers the raw data on which the first 300 pages of the book are based. Although this should be an indispensable part of every study relying on the so-called ‘words-and-things-method’ in order to allow the reader to check the soundness of the historical-linguistic analyses, the presentation of such basic evidence is the exception rather than the rule. For that alone, this book will be a lasting reference tool for future discussion and research with respect to African iron metallurgy.

The appendix presents more than 100 linguistic distribution maps with a full listing of the comparative series represented on these maps. The exact source (author, year of publication, page) is not mentioned for every single reflex, which would have facilitated the retrievability of the basic data, but the works from which most of them were drawn are provided for each language in the bibliography that precedes the appendix (pp. 278–298), while the languages for which he collected field-work data himself are enumerated in chapter 3 (pp. 51–52). Apart from a listing of the Bantu languages studied together with the country in which they are spoken and their Guthrie code (pp. 306–315), the appendix is subdivided in two categories of linguistic maps. The first set of maps is organized onomasiologically, i.e. each map represents the cross-linguistic distribution of different Bantu terms for a given metallurgy-linked concept such as ‘iron’, ‘hammer’, ‘blacksmith’, ... (pp. 315–466). Conversely, the second category is structured semasiologically, i.e. each map renders the different meanings of a given metallurgy-linked form (pp. 467–735). Unfortunately, a table of contents is only available for the first part (pp. 315–316). References to individual maps of the second set are only found in the body of the text, which seriously reduces the practicability of this last part of the appendix. One reason for this omission is without doubt the fact that the author does not propose lexical (pseudo-)reconstructions for his comparative series. This makes it difficult to present them under unified forms such as **-túdi* ‘blacksmith’ or **-tádè* ‘stone; iron-ore; iron; wire’. This is not only a practical, but also a methodological drawback to which I shall return later. Another serious shortcoming is the fact that the author systematically drops the tonal notation of the reflexes in his dataset, even when the original source provides them. He actually ignores tone throughout the study. Given that, in Bantu, as in other African language families, tonal differences are a key element for the reconstruction of etymologies, this neglecting of tone sometimes has considerable implications for his historical analysis of certain linguistic facts, cf. below.

To the other main objective of this work, i.e. the development of new historical methods for the representation and analysis of linguistic data, the author dedicates three full chapters. It is very important for linguists to concern themselves with this kind of methodological questions, since the historical exploitation of cultural vocabularies has long been a favourite playground of non-linguists. Indeed, in the realm of Bantu studies, historians were the first to systematically rely on the words-and-things-method. A school of 'linguistic historians' has applied its principles to reconstruct the early history of different Bantu-speaking regions (see e.g. Ehret 1998; Klieman 2003; Schoenbrun 1998; Vansina 1990, 2004). In contrast to 'historical linguists', who primarily analyze and compare languages to reconstruct the history of languages, 'linguistic historians' use language essentially "to reconstruct the *human* past" and "they see the classification of languages not as an end in itself, but rather as the first step towards the reconstruction of broader and encompassing human histories" (Klieman 2001: 48, 51). Consequently, the historian's analysis of linguistic data tends to be more superficial and does not always follow what linguists consider to be their code of practice (Bostoen 2005, 2007; Klein-Arendt 2005). As long as the methodology of these linguistically-based historical studies is problematic, their conclusions risk being flawed and lacking in soundness. What is more, such injudicious use of language data may jeopardize the general credibility of linguistics as a tool for historical reconstruction – a credibility which, it should be said, is quite feeble in certain academic circles. In spite of this, historical-comparative linguistics still has a prominent role to play in unravelling early African history. Therefore, it is important that African linguists take more interest in the extra-linguistic conclusions that can be inferred from their comparative studies. They need to collaborate with colleagues of related sciences in multidisciplinary approaches towards concrete historical questions and devote themselves to the amelioration of linguistic methods for the use of African history. The present study contributes significantly to this task. All the same, the author's methodology is not entirely satisfactory. It exhibits certain flaws that need further discussion.

Chapter 1 sets out the main purposes of the study and defines the scope of the research, i.e. Savannah Bantu, which the author considers as a purely geographic demarcation and not as a genetic Bantu subdivision. It further consists of a critical retrospect of the leading historical models of Bantu expansion emerging from about five

decades of multidisciplinary debate on pre-colonial Bantu history, mainly between historical linguists and archaeologists, very often with historians as their middlemen. The author contests the widely held assumption – ‘dogma’ as he calls it – of a monogenetic origin of the Bantu languages, whereby the introduction of iron metallurgy and the Bantu languages in the savannah area would be the result of one huge migration wave. He rejects such models of Bantu language dispersal in favour of Wilhelm Möhlig’s stratification theory (1977, 1981). This model is based on in essence three different methods, i.e. the traditional comparative method, dialect and language geography and the analysis of widely distributed sound changes on the basis of their phonological and phonetic features. Through the combined application of these methods, Möhlig came to the conclusion that the unilinear development model whereby all Bantu languages can be led back to one common proto-language is simply unworkable and that the Bantu language area as it exists today is the outcome of the repeated and homogenizing overlapping of different historical strata. Möhlig’s stratification theory never really found acceptance among Bantuists, most probably due to its lack of explanatory elegance and straightforwardness. Although it has the merit of having recognized, as one of the first, the importance of convergence processes in Bantu language history, it goes too far in downplaying the role of divergence. It is in my view also too radical in categorically rejecting the idea of one common Proto-Bantu ancestor that was spoken in one homeland at one time before the dispersal of the Bantu languages over central and southern Africa. It constitutes however the basis on which Klein-Arendt further elaborates his methodology for the historical study of cultural vocabularies.

Chapter 2 is a short but critical overview of the traditional methods used to study cultural vocabularies for historical purposes. Interesting is the author’s discussion of ‘lexical fields’ (“Wortfelder”) or ‘semantic fields’ (“semantische Felder”) as problematic concepts for the purpose of diachronic lexical studies. First of all, it is important to note that Klein-Arendt – in line with common practice – uses both concepts interchangeably. In my opinion, however, they should be distinguished. Following Lyons (1977, 1995), a ‘semantic field’ can be defined as a conceptual domain reflecting the way the speakers of a particular language conceptualize the world, while a ‘lexical field’ is then the set of lexemes imposed over that conceptual domain in order to be able to communicate about the concepts (Kronenfeld &

Rundblad 2003). The two types of field do not always fully overlap. One lexical field may, to a certain extent, cover different semantic fields, while distinct lexical fields may cover one and the same semantic field. As I have demonstrated with respect to pot-making vocabulary in Bantu (Bostoen 2005), a semantic field may be an amalgam in the sense that it is covered by distinct subsets of lexical items related to different aspects of this craft, i.e. the artisan, the raw materials, the instruments, the technical operations, etc., at the same time, it shares certain of these lexical subfields with other conceptual domains, for example food production and preparation. Accordingly, in order to understand the diachronic evolution of a semantic field, one has to examine not only how it was lexicalized over time, but also which semantic changes each of the individual lexical items underwent. Klein-Arendt actually describes the same interaction between conceptual fields and recognizes that separate lexical subfields covering a conceptual domain may undergo independent historical changes. It is, however, the error of not distinguishing between the notions of lexical and semantic field that leads him to the overstated conclusion that these concepts have no use in historical cultural vocabulary studies. Apart from this, I acknowledge with him that the definition of such semantic fields usually happens intuitively for want of empirically based criteria, and thus runs the risk of being Eurocentric.

In the rest of this chapter, Klein-Arendt deals extensively with the problems involved in making the distinction between inherited and borrowed vocabulary, especially when it concerns words that do not have an external origin, but have been diffused between Bantu languages. Admittedly, it is true that the identification of intra-Bantu loanwords and the reconstruction of their origin and diffusion routes can be problematic – even if this is not always the case. It is generally recognized that certain parts of the Bantu area are more appropriately characterized as dialect continua than as discrete genealogical subgroups (Schadeberg 2003). In spite of this, Klein-Arendt understates once more the role of early divergence processes in the shaping of the Bantu area as we know it today when he claims that convergence has made Bantu languages become uniform to such an extent that any attempt at tracing present-day vocabulary back to a hypothetical proto-language has become totally meaningless. Lexical reconstruction through the study of regular sound correspondences is still a valid method, also for Bantu. What is more, it is only through a strict application of the comparative method that one can identify historical

situations which are more complex than the reconstruction of a single form can account for (Botne 1991). It is precisely the necessity to reconstruct phonologically variable forms, a phenomenon known as “osculance” (Bostoen 2001; Guthrie 1967–71) that is indicative of early contact phenomena that blurred regular correspondences. The fact that Klein-Arendt focuses his study on a specific group of Bantu languages, which are particularly notorious for forming a huge convergence area, may to some extent explain his radical stance. This exclusive focus on Savannah Bantu is precisely one of the major methodological weaknesses of his study. This choice prevents the author from assessing the real time depth of certain phenomena and may give rise to a certain kind of ‘historical myopia’, especially since certain Savannah subgroups such as the south-western Bantu languages are known to be historically more closely related to certain so-called ‘Forest Bantu’ subgroups (Nurse & Philippson 2003). If, in widely scattered Bantu languages, and sometimes even beyond Narrow Bantu, a particular word occurs in a phonologically regular form it is very difficult to consider the distribution of such a word as purely the result of linguistic contact and convergence. Certain cases in Chapter 5 suffer from a wrong historical interpretation precisely because of neglecting data from the entire Bantu area.

In Chapter 3, Klein-Arendt defines his research plan with respect to the area of study and the semantic/lexical field considered in more detail and also discusses the problems related to data collection (both fieldwork and literature) and interpretation. He explains his decision to concentrate on vocabulary associated with what he calls “Leitbegriffe”, i.e. leading concepts that are exclusively linked to the craft of metallurgy. It concerns those concepts which are linked to the core processes of forging and smelting. As opposed to very general concepts related to iron working, such as ‘fire’, ‘firewood’, ‘charcoal’, but also less general non-technical concepts such as ‘iron’ or ‘rust’, these technical concepts are not shared with other conceptual fields. It can therefore be safely assumed that such terms are specialized vocabulary whose historical evolution will most likely tell us more about the history of the craft itself. However, as one can conclude from the several case studies in Chapter 5, this expectation is only partly met. Vocabulary referring to leading concepts is often obtained through the semantic specialisation of vocabulary that originally had a more general meaning. As regards metallurgy, this is especially the case for the common Bantu verb **-túd-* referring to the process of forging,

which is derived from a more general meaning ‘to beat’ or ‘to hammer’. The specialized meaning ‘to forge’ can be independently derived in different Bantu languages at different times through convergent semantic shift. Moreover, the basic meanings are generally not lost, a fact which implies that the semantic core of this verb must be vague, even to such an extent that it does not necessarily reflect changes in the extra-linguistic world. If the geographic distribution of the verb **-túd*, meaning ‘to forge’, tells us something about the relative time depth of the craft itself, it does not teach us anything about the technical evolutions which this craft underwent, because the verb is semantically vague enough not to be affected by such cultural changes. In other words, the lexemes, which are most stable and transmitted in space and time, be it through inheritance or contact, are not necessarily the most revealing ones culturally. On the other hand, the culturally most salient elements of the conceptual domain of metallurgy, e.g. ‘slag’, ‘slag sprout’, ‘whetstone’... , often turn out to be the most peripheral lexically in the sense that their vocabulary is very fragmented throughout Bantu languages. As I have previously observed with respect to Bantu pottery terminology (Bostoen 2005), the operations and instruments belonging to the most characteristic production phases of a craft often happen to be the ones that are most prone to lexical innovation. This lack of recurrent technical vocabulary makes it very difficult to reconstruct the historical evolution of a craft’s more technical aspects from lexical evidence alone. Klein-Arendt does not always come to the same conclusion in this regard.

The author develops his own methodology for the historical interpretation of the lexical data in Chapter 4. It concerns a method for the identification of areas sharing a distinctive technical vocabulary and a method to determine the direction of diffusion of lexical items. The identification of languages forming a historically related area is done through the superposing of isoglosses of individual lexical items that go well together. Nuclear areas emerge where all forms involved overlap. These are surrounded by peripheral areas where only certain isoglosses overlap. Such patterns can be used to identify the development of regionally independent vocabularies. It is clear that such an approach heavily depends on the lexical material available and that qualitative and quantitative inequalities between languages can seriously distort its results. As a consequence, Klein-Arendt mainly concentrates on large-scale diffusion patterns. For the historical interpre-

tation of such patterns, he gives great prominence to semantic shifts, which is without doubt the most innovative aspect of his approach. He takes the semantic evolution of each comparative series as a basis for reconstructing the diffusion routes of lexical items. He does not only rely on phonological irregularities to identify loanwords and their diffusion routes, the usual method, but on one that is difficult to apply because of lack of required data. His semantic method is built on the fundamental premise that the technical terms for Bantu blacksmithing and iron smelting are always semantically derived from a term belonging to the basic vocabulary. The most straightforward illustration of this principle is the above mentioned verb 'to forge' which is derived from the more general meanings 'to beat' and 'to hammer'. Similarly, most terms for 'iron' in Bantu would have their semantic origin in a verb meaning 'to be hard' or 'to be strong'. This linearity does not necessarily imply that we always need to expect a unilinear development from basic to specialized to even more specialized. Metonymically founded derivations like 'iron' > 'knife blade' with 'to be strong' as basic meaning are equally possible. A second premise is that basic words and their specialized derivations must show regular sound correspondences as in the example *-luŋga/-duŋ'u* 'kindle fire/red' > *eluŋgu* 'heat, fire' > *eluŋgu* 'fireplace' > *eluŋgu* 'smelting furnace'. Klein-Arendt does not name here the languages from which these examples are taken, so that it is impossible to check phonological irregularities. Building on these two fundamental premises, the author continues to claim that the high percentage of technical words which cannot be derived from Bantu basic vocabulary are most likely loanwords from languages outside Bantu. Moreover, comparative series manifesting phonological irregularities are also indicative of borrowing. If so, semantic developments can be interpreted according to geographical patterns in order to reconstruct the direction of the borrowing process. If in region X, for instance, *-simba* means 'to be strong', while the derived noun *simbi* refers to 'iron' in region Y and to an 'iron (for ironing clothes)' in region Z, the direction of the borrowing process must have gone from X over Y to Z, and not the other way around. In this way, combining semantic shift with phonological shift, it should be possible to assign historical validity to single word distributions. Nevertheless, Klein-Arendt himself admits that not all technical terms related to iron working can be analyzed in this way. Moreover, this is the ideal case, which only works if one does not take into account language areas in which the semantic

source of the specialized word was in use during an earlier period of time, but deleted afterwards. – Apart from this, certain of Klein-Arendt's semantic points of departure should, in my view, be put in perspective.

Firstly, the principle that technical words which cannot be derived from Bantu basic vocabulary must be non-Bantu loanwords is overstated. It is true – not only for iron-working vocabulary but for semantic fields related to other crafts as well – that the most central concepts are derived from words for non-technical concepts. But claiming that all technical vocabulary should be derived from certain basic concepts and, if not, that it must be borrowed, is a step too far and leads to skewed conclusions. A case in point is his historical analysis of the word *ɸuma* designating 'iron' in several Savannah Bantu languages (pp. 218–9; see also Klein-Arendt 2000: 174–6). According to his semantic methodological framework, the technical meaning 'iron' must be derived from a basic concept such as 'to be hard', 'to be durable' or 'hardness'. Several Savannah Bantu languages indeed have a verb meaning 'to be hard' that resembles *ɸuma* phonologically. It occurs in different forms like *-uma*, *-oma* or *-guma*, and may also mean 'to be dry'. Given this basic meaning and this phonological similarity, Klein-Arendt takes the historical relationship with *ɸuma* 'iron' for granted. He furthermore presupposes that the word spread through language contact and the group of possible source languages can be narrowed down by excluding those where the basic verb does not mean 'to be hard' and has a phonological shape other than **-uma*. Through some further criteria, he comes to the conclusion that Swahili was the source of the word *ɸuma* 'iron'. However, how then explain words like *ekihomalekyoma* 'iron' in Nande (D42) or *kyuma* in Hunde (D51) which cannot be directly derived from Swahili? Because of his emphasis on the necessity of verbs meaning 'to be hard' as the source for Bantu words meaning 'iron', Klein-Arendt excludes right from the beginning every other possible internal Bantu origin, such as the noun **-jómà*, from which the Nande and Hunde forms could be regularly derived. This noun stem has been reconstructed with an initial high tone contrary to the verb 'to be hard' reconstructed as **-gòm-* (< **-gòmù* 'hard') (Bastin & Schadeberg 2003). Since the author systematically ignores tone, he cannot draw the logical historical conclusions from this tonal difference. With respect to **-jómà*, the author entirely ignores the hypothesis of Grégoire (1975: 139–40) who convincingly demonstrated that, according

to the class to which it belongs, this noun stem means ‘thing’ (cl. 7/8), ‘place’ (cl. 16, 17, 18) and ‘person’ (cl. 1/2) respectively in western Bantu and, like the noun stem **-ntò*, is semantically indeterminate. In eastern Bantu, on the contrary, the cl. 7/8 form was subject to semantic specialization and adopted meanings like ‘precious thing’, ‘goods, wealth’, ‘pearl’ and ‘iron’. This contradicts Guthrie (1967–71), who proposed the inverse process, namely the generalization of the original meaning ‘object of value’ to ‘thing’ tout court. Klein-Arendt only briefly mentions Ehret’s (2001) hypothesis, which is indebted to Grégoire (1975), but does not consider this possibility any further.

Secondly, the unilinearity of semantic changes and their interpretation according to geographical distribution in order to reconstruct the direction of a borrowing process can be questioned. Although some lexical changes have been shown to be unidirectional (Bastin 1985; Wilkins 1996), it has not been proven that semantic change on the whole is unidirectional. Moreover, studies in diachronic prototype semantics have shown that semantic categories tend to manifest increasing flexibility through time in the sense that the core meaning area remains stable, while the peripheral meanings get more and more varied, because the allowed variation grows broader and broader. The number of peripheral instantiations grows and their degree of deviation from the prototype increases (Geeraerts 1997: 39–41). Besides, these more peripheral readings of the central instantiations do not subsist over time, but rather occasionally crop up and disappear again, a phenomenon known as “semantic polygenesis” (ibid.: 62). Given this vagarious nature of semantic change, prudence is recommended in the historical interpretation of geographic distribution patterns, certainly with respect to derived meanings. Taking into account the naturalness of certain semantic changes, convergent derivations can never be excluded.

These critical reflections may not invalidate Klein-Arendt’s methodology, but they still indicate how difficult it is to draw historical conclusions from single word distributions. Consequently, it is not surprising that it is even harder to identify ‘bundles’ of overlapping isoglosses suggesting the joint dispersion of a package of iron-related vocabulary together with the associated technology from one region to another. As Klein-Arendt acknowledges himself, it is difficult, for a number of reasons, to find isoglosses that coincide more or less neatly, and it is even more problematical to prove that the dispersal of single members of a bundle happened in one period. Perfect con-

gruence of individual distributions is non-existent and even if single word distributions may largely coincide, it should be proven that they are synchronic. Klein-Arendt tries to achieve this by examining intersections of distribution patterns. However, while it is relatively easy to find such intersections between single word distributions, it is impossible to find the same intersections for all words belonging to two different bundles. It cannot be denied that every word still has its own history. Even if this approach is theoretically reliable, it is difficult to apply in practice. Given that distributions of single words are rarely totally congruent, the composition is somewhat arbitrary and different researchers may make up different bundles with the same data.

Chapter 5 is the longest one (pp. 102–253) and consists of the actual application of Klein-Arendt's methodology to the conceptual field of iron-working, subdivided into two main subfields, i.e. blacksmithing and smelting. For each of these subfields, he first deals with the vocabulary for the respective "Leitbegriffe" 'to forge'/'blacksmith' and 'to smelt'/'smelter' and then with the vocabulary for related concepts like 'hammer', 'anvil', 'bellows', 'to temper iron', etc. as regards blacksmithing and 'iron bloom', 'slag', 'miner', etc. with respect to smelting. He further treats the concepts 'iron' and 'rust'.

This historical-comparative approach results in the detection of nine large-scale diffusion movements ("großräumige Diffusionsbewegungen"): 1) from the north-western Bantu area into the savannah, 2) from the rainforest into the central savannah, 3) from the rainforest into the eastern and south-eastern savannah, 4) from the central savannah into the rainforest, 5) from the north-eastern savannah to the east of Lake Victoria into the southern savannah, 6) from the northern Great Lakes or Interlacustrine region ("Zwischenseengebiet") into the southern savannah, 7) from the southern savannah into the central Great Lakes region, 8) from the East-African coast into inner Africa, and 9) the role of Portuguese loanwords in the development of technical vocabulary. These diffusion bundles are subsequently seriated, on purely geographical grounds, into a relative chronology of successive layers with Möhlig's stratification model as point of reference. Hereby, the author fails to define the diffusions that happened between the Luba world and the central Lake Corridor region chronologically and those that happened from the north-western Bantu area into the savannah. Furthermore, the strata identified by Klein-Arendt only partly correspond to the ones Möhlig set

out. Finally, the author identifies seven areas with a typical and more or less exclusive metallurgy-related vocabulary, i.e. northern Great Lakes region, the Kinyarwanda-Kirundi area, the Swahili area, the central Great Lakes region, the Luba-Lunda area, the Shona area and the Venda area. Given that the composition of diffusion bundles is arbitrary to a certain extent, as explained above, the whole of the individual geographic distribution pattern should actually be reconsidered to see whether one comes to the same conclusions or whether alternative interpretations are possible, which would, of course, be beyond the scope of this review. Nevertheless, generally speaking, it can be stated that, by focusing on bundles of widespread isoglosses, Klein-Arendt tends to consider the diffusion of word packages as the main motor behind the evolution of metallurgy vocabulary in Bantu. Lexical change in a particular region is generally seen as the result of an introduction from another region, while the role of internal evolution is underrated. As a corollary, changes in metallurgy-related practices also tend to be seen as the outcome of external changes rather than the result of local developments, which leads to a biased vision on cultural change in general.

The final chapter briefly presents an overall (positive) evaluation of the historical results of Klein-Arendt's study, makes proposals for future research aimed at completing the linguistic data and discusses the steps which should be taken in order to arrive at a new model for a comprehensive diffusion history of Savannah Bantu from an interdisciplinary perspective.

In sum, despite the critical comments made above, Klein-Arendt's book definitely merits recommendation. It is the most complete comparative lexical approach to the history of iron-working in the Bantu area to date. It offers a large amount of data, presenting together, in a unique way, reflexes and geographic distribution maps. Moreover, it raises important and stimulating methodological issues concerning the use of the words-and-things-method for the reconstruction of early history in areas of the world for which no written documents are available. It should be read by all scholars interested in the cultural history of sub-Saharan Africa, and especially by Bantu linguists who wish to put their historical-comparative research in a wider interdisciplinary perspective.

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