SVEN SELLMER

# FORMULAIC DICTION AND VERSIFICATION IN THE *MAHĀBHĀRATA*

Wydawnictwo Naukowe UAM

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ADAM MICKIEWICZ UNIVERSITY IN POZNAŃ
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WYDAWNICTWO NAUKOWE

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The present study consists of a computer-based description and analysis of the formulaic language in the Sanskrit epic *Mahābhārata*. For this purpose several databases were constructed and explored with the help of specially designed software tools. In the first part, all repeated multi-word elements of the surface structure are analysed systematically, from the longest to the shortest ones; in the second part more abstract formulaic structures are identified and discussed. The approach followed is based on the presupposition that metrical patterns are not an additional, secondary feature of the language of the *Mahābhārata*, but should be regarded as an integral part of Epic Sanskrit.

KEY WORDS: Mahābhārata; Epic Sanskrit; oral poetry; metrics; versification

Sven Sellmer, Chair of Oriental Studies, Adam Mickiewicz University, ul. 28 Czerwca 1956 r. nr 198, 61-485 Poznań, Poland; e-mail: sven@amu.edu.pl

Recenzent: PD Dr. habil. Oliver Hellwig



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# CONTENTS

# 1
# INTRODUCTION

The present investigation aims at throwing new light on the diction of the *Mahābhārata* (= *Mbh*), especially on its formulaic aspects. This issue in turn is intimately related to a second question that will also be touched upon: the versification technique of the epic poets which enabled them to take advantage of the possibilities offered by the language they were working in.

The topics chosen do not belong to the most popular ones in studies on the Sanskrit epics but especially as far as the description of the epic formulaic language is concerned, there are quite a few important and valuable investigations available. Details of these studies will be discussed in the main section whenever necessary, but a general outline can best be given at this point.

Like in many other fields, the interest of Indologists in formulaic diction and versification must be seen as a (rather slow) reaction to developments in classical studies.[1] Whereas intensive work and discussions followed quickly upon Milman Parry's seminal publications on Homeric formulas in the late 1920s and early 1930s[2], the first studies on the Sanskrit epics that explicitly use the Parry-Lord approach appeared much later, namely SHARMA 1964[3] (specifically, the small chapter "Techniques

1 Looking at the amount and sophistication of the publications devoted to these topics, one must say that classical philology (especially as far as Homeric studies are concerned) is still considerably ahead of Indology. So it is obvious that at least the most important studies in this field should be taken into account, mainly in terms of methodological aspects because the Homeric hexameter is so different from the epic śloka that the technical details are mostly not very helpful for a Sanskritist. In addition I have also consulted scholarly literature that deals with questions of formulaic language from the more general standpoint of oral poetry theory and linguistics.

2 Many publications by the scholars discussed in this section were consulted but not all are mentioned explicitly and separately, so the reader is kindly requested to refer to the bibliography at the end of this book.

3 It may be noted that the combination NAME_IN_SMALL_CAPS + YEAR refers to a publication, whereas a name in standard typography refers to a person.

of oral poetry", pp. 167–174) and SEN 1966 (followed by the critical note BROCKINGTON 1969). But these were rather small-scale studies. The first scholar who took up the topic of the epic formulaic language, mainly of the *Rāmāyaṇa (= Rm)*, in a thorough manner, turned out to be John Brockington in a whole series of publications over three decades, starting in 1970. Brockington was, however, more interested in the description and categorisation of the formulaic material than in the mechanisms of versification or in theories of oral poetry.[4] All these aspects are present in the publications of Pavel' Grincer and Jaroslav Vasil'kov in the first half of the 1970s (see References).[5] Both Russian scholars make extensive use of Parry's and Lord's "oral theory" and are responsible for a whole range of important observations. Unfortunately, due to the language barrier their publications did not receive the attention they deserved though at least their main theses were known in the international research community thanks to a rather detailed review article by de Jong (1976). Another major work that made even less impact can be mentioned, Georg von Simson's habilitation thesis (1974). For some reason the author decided not to publish it but it is available as a typoscript or xerox in some libraries. It is a pity that this text never appeared in book form and so remained widely unknown[6] as it contains a lot of well-researched material and many valuable statistics; the article VON SIMSON 1982 partly builds on this previous study. John Smith is known for his work on the Rājasthāni oral folk epic *Pābūji* (1991) but he also dealt with the Sanskrit epics in a number of publications, drawing on his fieldwork experience and his thorough knowledge of the Parry-Lord approach. In addition, his 1999 paper is one of the first to make systematic use of the (then already available) electronic text of the *Mbh* for detecting and analysing formulaic elements. Another pioneer in applying computer analysis to the *Mbh* can be mentioned, Daniel H. H. Ingalls. If the project described in INGALLS 1991 would have received financial support, *Mbh* studies would undoubtedly be much more advanced in many respects now. But even with the limited material available to him he managed to make important contributions to the field. The first book-length study based on

4 Though certainly aware of their publications, he does not refer even once to Parry or Lord in his first major paper of 1970.

5 Here the ISO 9 transliteration system for Russian is used. In Western publications the aforementioned scholars often appear as "Grintser" and "Vassilkov".

6 It is not even cited in the quite extensive bibliography of BROCKINGTON 1998.

computer-aided analysis of the electronic Critical Edition (= *CE*) known to me was submitted as a Pune dissertation by Jahnavi Bidnur (2009). Its main contribution lies in the identification and discussion of examples of a formulaic structure called "grammatical substitution system" by her.

The main reason why the present study has been undertaken in spite of the already existent high-quality work of the aforementioned scholars is progress on the technical side: The possibility to use an electronic text in order to conduct various types of analyses for the first time; thus allowing a truly comprehensive approach to the formulaic language of the *Mbh*, and also offering completely new dimensions as far as statistical data analysis is concerned. All this does not mean, of course, that the older studies are automatically outdated, rather the picture is quite variegated: many results can be accepted and will be confirmed by a larger amount of evidence, other claims must merely be modified; some do not seem to agree with subsequent investigations. The most important task for the new methods is not, however, to reassess the results of older studies, but to provide information about additional features that, thanks to the computer, now become visible like hidden tissue structures under an X-ray machine.

In several instances the data obtained in the course of these analyses seemed to be of potential interest for questions not directly connected to the topic of this study. These cases were at least noted *en passant,* so that more knowledgeable persons might be able to pick up the thread. From a technical point of view this should be easy because all the databases that were created while working on the present project have been made publicly available via the internet at Sellmer 2015.

Projects like the present one are located in the borderlands between the provinces of linguistics and philology. This position, which is peculiar and sometimes difficult in itself, becomes a little awkward due to the fact that the present study heavily relies on computer analysis — an approach that is viewed very differently on both sides of the border. On the one hand, in many areas of linguistics the computer has long been a standard work tool, and with computational linguistics even a separate discipline has evolved. On the other hand, to put it a bit polemically, among many philologists every use of the computer beyond typing and doing simple searches is viewed with a certain suspicion. So the following remarks are primarily addressed at philologists of the traditional type. It is my impression that many of their reservations stem from the

misconception that computational methods try to answer the same questions as traditional philological methods (only, they feel, in an inadequate way). But in fact this is rarely the case. Rather computer programs should be regarded as tools, which like all tools come with opportunities and limitations, and the data obtained by their operations are no magical kind of data, but need to be carefully evaluated and interpreted, just like manually collected results. There is however one fundamental advantage of computationally extracted data: They represent completely objective features or structures of a text, which is a valuable thing in itself, quite independent from possible misconceptions of the scholar who collected them or from bad interpretations referring to them. Therefore it is of paramount importance to always keep the data and their interpretation apart — even if the latter turns out to be worthless, the former will still be a gain for scholarly progress.

Both the difficult nature of the material and the in part rather novel approaches make it indispensable that the analyses are preceded by some rather lengthy methodological considerations. These will be divided into a general part, where questions of a more fundamental kind are treated; and a technical part that aims at presenting and explaining the databases and the statistical methods employed.

## 1.1 General part

The general part of this introduction will be devoted to the status of Epic Sanskrit, i.e., the language of the *Mahābhārata* and the *Rāmāyaṇa*, and to the nature of the *Mbh*.

### 1.1.1 Epic Sanskrit

In his fundamental grammatical work *Epic Sanskrit*[7] Thomas Oberlies squarely states: "Epic Sanskrit is not just an inferior form of 'Classical' Sanskrit. It is a language in its own right" (2003, p. XLVIII). As its "most conspicuous features" he mentions "the strong influence of the nominal

7 Regarding works dealing specifically with Epic Sanskrit one must also mention VAN DAALEN 1980, MEENAKSHI 1983, and the numerous detailed studies by Brockington and Kulkarni for which references can be found in the bibliography of BROCKINGTON 1998a.

and of the verbal system exercised on each other on the one hand and its economy on the other" (ibid., pp. XLVIII–XLIX).

While I agree wholeheartedly with the first statement, the second appears to be much too narrow. It is important to understand that the separate status of Epic Sanskrit is not mainly based on the fact that it features certain non-Pāṇinian forms and formation patterns, irregular sandhis and all the other details Oberlies records in his comprehensive grammar. These phenomena could in principle be explained as being quasi-dialectal features[8] and/or forms especially modified in order to resolve specific metrical difficulties[9]. They may be the most easily observable differences from Classical Sanskrit but they are, in a certain sense, only a symptom or, to use another metaphor, the tip of the iceberg. Much more characteristic and fundamental are the rules and regularities that lie at the basis of the formulaic diction that is so ubiquitous in the Sanskrit epics.[10] In cases like that of Epic Sanskrit it is impossible to keep style and language apart; in an analogy to Homeric Greek, it should be regarded as a *"Kunstsprache"*, which originated under special circumstances and with a special purpose (though admittedly morphologically it is much closer to the standard language than Homeric Greek).[11]

As to the historical origins of Epic Sanskrit one can only speculate because we have no reliable data; but generally this idiom ultimately must have evolved out of the spoken language in a milieu of persons composing texts of an epic or proto-epic genre, i.e., in all probability, bards forming a tradition of oral poetry (see section 1.1.4). The details of this stage are even more uncertain but one can imagine a kind of parallel development of metrical features on the one hand and adapting lin-

8 Cf. Salomon 1989, Salomon 1995 and Oberlies 2003, pp. XLI–XLVIII.

9 Cf. Oberlies 2003, pp. XXXI–XLI.

10 The issue here is not formularity as such, which is a quite widespread feature in many normal languages (see below section 2.1.1.1), but its specific quality.

11 Therefore I would suggest to make a terminological distinction between the Sanskrit dialect characterised by certain features that deviate from standard Sanskrit that perhaps was used as an oral means of communication by less well-educated circles (cf. Salomon 1986, p. 49) and the artificial literary language used for composing epic and cognate texts, though morphologically the two may be quite close. The term "Epic Sanskrit" should be reserved for the latter one, while the first one (following Salomon) might be called "Vernacular Sanskrit".

guistic structures on the other, in analogy to Russo's speculation about the joint origins of the Homeric language and the hexameter:[12]

> It is probable that each of these factors, rhythm and natural word patterns, has had some effect in shaping the other; that each has sought out and reinforced tendencies it found congenial in the other, as they evolved between them the finished form and diction of the Homeric hexameter as we know it (Russo 1966, p. 225).

Be that as it may, through some process many formulaic features became, as it were, part of the DNA of Epic Sanskrit, a "grammar of poetry"[13] came into being and kept developing like in any living language — even after the formation of the metrical structures etc. had largely come to an end — as long as the bardic tradition was continued. The task in describing these aspects of Epic Sanskrit consists therefore in detecting such linguistic features that are not just part of Sanskrit in general but can be explained as specific developments in a metrical milieu, so to speak. How such developments might have taken place will be discussed in the context of theories of the formula (section 2.1.1).

To sum up, the nature of Epic Sanskrit lies in its being a language both formed by versification and used for versification. To borrow and modify some famous words used to characterise the language of the Homeric texts: Epic Sanskrit is not only "ein Gebilde des epischen Verses" (Witte 1913, col. 2214) but at the same time also "ein Bildner des epischen Verses". At any rate, it cannot be separated from its metrical milieu, so in order to describe it truly comprehensively, the prosodic features of its elements must also be consistently taken into account, as will be exemplified in section 1.2.2.

Here one important clarification is in order. Assuming an oral origin for the epic *language* does not imply the same for the epic *texts* we have. Once in existence, Epic Sanskrit can and has been used to compose written texts, of course. We will return to the question of orality and writing in section 1.1.4.

12 A similar model is also described in Nagy 1974 and Nagy 1976.

13 This expression is borrowed from the title of chapter 8 of Bakker 1997.

### 1.1.2 Epic traditions

The textual material for the following investigations is mainly taken from the *Mbh*, but it is important to keep in mind that this epic is to be seen in the context of a broader tradition. To be sure, we do not have direct access to the history of this tradition, but comparative studies of the *Mbh* and the *Rm* strongly suggest its existence. In particular, Brockington's paper on stock phrases that are shared and not shared by the *Mbh* and the *Rm* is quite conclusive.[14] According to this scholar three phases have to be distinguished: a phase comprising a common epic tradition, a second phase in which the subtraditions of the *Mbh* and the *Rm* developed independently, and a third phase that is characterised by a merging of these two strands. It is a separate question (not to be taken up here) how the first phase should be located in terms of chronology, particularly if it goes back to Vedic times. In this study material stemming from the *Rm* is used and compared in several instances, but not in a systematical way.

### 1.1.3 The *Mahābhārata*

The investigations undertaken in the main section are to a large extent descriptive and do not rely on any particular theory regarding the textual history of the *Mbh*. Nevertheless, tentative explanations for certain phenomena are sometimes given that are based on certain text-historical presuppositions. Therefore, at least a few remarks on this hotly contested field will be in order. For the present purpose it is enough to sketch a rough or, so to speak, minimal model which is formulated in such general terms that it will hopefully be acceptable to the majority of scholars. Its central element is a black box in which processes of redaction and composition take place. The inputs are different texts by different authors from inside and outside the epic tradition;[15] the direct output is the earliest version of the *Mbh* with eighteen *parvan*s and a num-

14 Cf. Brockington 1985 and Hara 1994.

15 Because (apart from the *Rāmāyaṇa*, on which see the preceding section) there are no other old texts of the epic genre, this part of the input is largely hypothetical. More is known about proverbs and gnomic literature in the epic texts (cf. Hopkins 1899, Kane 1939, Brockington 1979) and on the tales and illustrations incorporated into the *Mbh* (cf. Brockington 1998a, pp. 130–156, and Tokunaga 2009).

ber of verses similar to the CE. Some would probably agree that this oldest version is close to the written archetype the editions of the CE tried to reconstruct but one should always keep in mind Lüders' cautious remarks:[16]

> Das Ziel der kritischen Ausgabe muß es sein, die älteste Form des Textes herzustellen, die auf Grund des handschriftlichen Materials zu erreichen ist. Freilich ist das nicht etwa der ursprüngliche Text des Epos; ich bin überzeugt, daß es überhaupt niemals gelingen wird, das Urbhārata herzustellen (LÜDERS 1929, col. 1143).

Others go even further in their criticism and envisage the possibility that there are several redaction-cum-composition processes going on in a parallel fashion at different places, so that there would be multiple outputs and not just one "first" *Mahābhārata*.[17]

The output of the redaction-cum-composition process either exists from the very beginning in written form or is promptly committed to writing because after the black box stage a manifold manuscript tradition evolves, which can to a certain degree be reconstructed by established text critical methods.[18] At this stage further additions accrue to the texts transmitted in the different branches of the manuscript tradition, but no longer in an invisible, black-box manner because changes now leave their traces in the manuscripts. It is these additions that are excluded from the main text and delegated to appendices by the editors of the CE.

The following schema may serve as an illustration of the sketchy account just given:

16 Virtually the same reservations are shared by *CE* editors, like Sukthankar (1933, p. LXXXVI) and Edgerton (1944, p. XXXVI).

17 This is what Dunham seems to hold who, therefore, underscores the artificial character of the *CE* text: "The text of the Mahābhārata as it appears in the C.E. cannot be regarded as a version known in any part of India at any time in the past" (1991, p. 17); a similar critique is raised by Biardeau (1986). Both advocate what one might call irreducible regionalism.

18 The qualification "to a certain degree" has to be used because the textual history of the *Mbh* is extremely difficult, a "problem *sui generis*", according to Sukthankar (1933, p. LXXXVI). This is mainly due to the phenomenon of contaminated transmission, where a scribe uses several different manuscripts of a text to actually compile a new version; but also the continuous influence of memorised and orally performed versions should be taken into account (cf. DUNHAM 1991, pp. 14–15).

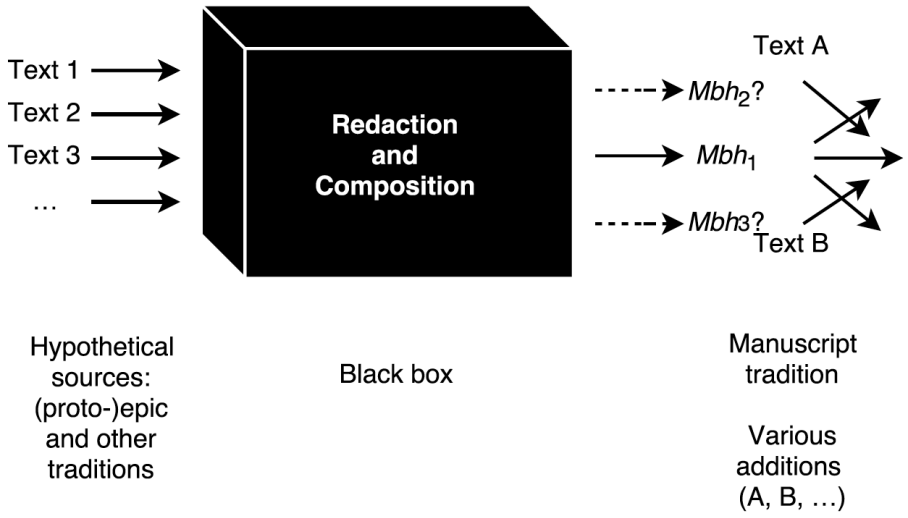


**Fig. 1.** Black box model of the formation of the *Mbh*

Of course, this primitive model leaves all kinds of important aspects undefined which here will only be listed together with some of the main theories that have been proposed in this context:

*Which texts formed the input, and which were freshly composed in the black box? How and to what extent were the input texts changed and reworked in the course of their inclusion? Did the redactors act with a general plan in mind?*

As noted above (fn. 15) these questions are to a large extent unanswerable with any certainty. Accepting the plausible hypothesis that at least some of the input texts were still parts of a living oral tradition, one must additionally tackle the problem of textualisation; i.e., of how and in what circumstances they were written down.[19] Here, such issues will be largely bypassed, as explained in section 1.1.4 below.

It is doubtful if the details of the redaction process will ever be reconstructed, but it seems that there is at least a general consensus to presuppose that some early version of the *Mbh* indeed was the product

19 Not more than generally plausible speculation seems to be possible in this respect. In addition to Brockington 2000b (especially pp. 209–210) the remarks by West (2011) on the partly parallel problem concerning the Homeric epics should be consulted.

of a careful plan and not just the result of a more or less chaotic growth process, as certain earlier Indologists assumed.[20] Still, there are very substantial differences among the modern scholars as to the extent and depth of the plan; also the question of how thoroughly the redactors reworked their material is far from clear.[21]

*Which persons with which purposes and under which circumstances were engaged in the redaction and composition process?*

As far as the agenda of the anonymous redactors is concerned, several propositions have been made, the most influential among them certainly being Sukthankar's theory of "Bhṛguisation"[22]; other scholar's have pointed to other redactorial groups with special purposes.[23] One must certainly envisage the possibility that in the course of a longer redactional process different groups may have tried to realise their aims in turn, which brings us to the next set of questions:

*How long did the process last, did it consist of different phases, and when did it take place?*

As a general time frame in which the redaction-cum-composition process may have taken place, the centuries between the 4th c. BCE and the 4th c. CE are rather uncontroversial. Here, the main dividing line is between theories according to which a growth-like process continued

20 Here one may quote Oldenberg: „Das Mahābhārata begann seine Existenz als einfache epische Erzählung. Es wuchs im Laufe der Jahrhunderte zum ungeheuerlichsten Chaos" (1922, p. 1).

21 For a possible outline of and many arguments for a protracted, not chaotic, but also not completely controlled process of "growth and development" see BROCKINGTON 1998a, pp. 130–158. As a kind of counter-position one may point to Hiltebeitel's vision of a much more stringent redaction developed in HILTEBEITEL 2002.

22 Cf. the seminal paper SUKTHANKAR 1936.

23 Various candidates have been mentioned, among others, Nārāyaṇa theologians (see OBERLIES 1998), "brāhmaṇa irenicists" (see HEIN 1986), and authors engaged in a "Kṛṣṇaisation" of the epic (see VIETHSEN 2008).

over several centuries and those that posit a much shorter and more focussed redaction.[24]

The sketched issues are without a doubt important and complex problems, but in the present context any discussion can be suspended, because the material of the *CE* main text is accepted "as is" (with the qualifications explained in section 1.2.1). It will be seen that some of the observations in the second part of this study may be used to shed some light on these and other questions, but such cases will only be noted in passing; potential paths of enquiry, rewarding as they may be, are not pursued because this would require a very broad and at the same time detailed approach with attention to narrative structure, textual history, vocabulary etc., which would not be in keeping with the mainly technical approach employed here. Generally, the focus of the present investigation is on small units, therefore questions concerning the macrostructure of the *Mbh* will not be addressed.

### 1.1.4 Orality and writing

One of the most problematic tasks in connection with the formation of the *Mbh* is to assess the role of oral and written composition in this process — a question that is relevant both for the input texts and for any composition of passages going on in the black box. Typical discussions in *Mbh* studies around this topic are not so much guided by linguistic interests but by the question of how carefully planned the structure of the whole epic may be assumed to be, along the general line: "more writing, more structure".[25] For the present purpose it is not necessary to enter into details; the only thing that will be assumed in the following is that (in accordance with what has been said in section 1.1.1) *there was a period*

24 The assumption of a time span of several centuries is still the main stream consensus, it seems, but other opinions do exist: Hiltebeitel claims that "a short period of one or two generations is sufficient to account for this composition or production" (2011, p. 11).

25 It should be mentioned, however, that Brockington grants quite a high degree of planning to the traditional bards who were, according to him, the authors of the text during the initial phase of its growth: "It is evident, though, that the oral poets did not merely string together episodes and formulæ, or perhaps did not so much do so as constructed a pattern or framework to the work that is far more intricate than just an outline plot" (Brockington 1998a, p. 115).

*in which texts of the epic genre were composed by traditional bards at live performances as oral poetry in the technical sense and that Epic Sanskrit developed as the language of this very tradition.*

It is hardly necessary to argue for the plausibility of this assumption, so it may suffice to be reminded of the fact that bards are frequently mentioned and play an important role in both Sanskrit epics (BROCKINGTON 1998a, pp. 18–20)[26] and that linguistic and structural parallels between the Sanskrit epics and the oral epics in other languages abound, as even a brief look in ch. VI of BOWRA 1961 makes clear (though Bowra left the Indian material out of the picture).

Due to its oral origins structural features characteristic of bardic poetry are, as it were, encoded in Epic Sanskrit and so must automatically be to a certain extent inherited by texts making use of this language, even if they are the product of other ways of composition. These "other ways" include not only pure writing but also all kinds of mixed techniques and even methods of text production that do not use writing but differ from live improvisation, like memory-based composition[27]. Poetry composed in such "other ways", but keeping many features of oral poetry I propose to call *"oral-style poetry"*.[28]

26 This is not meant to imply that bards are depicted as the authors of the *Mbh* — which is not the case, as Hiltebeitel correctly emphasises (2000, pp. 168–169) — but merely to show that bards and the literature produced by them was known to the authors of the *Mbh*.

27 If such methods were in fact used, it cannot be known for sure, but at least one can hardly question the plausibility of Bowra's judgement (which refers to Homer but is valid for any oral poet): "In principle it is not improbable that he described scenes for which his formulae were not fully adequate and invented new phrases for them. Even if he composed without writing, he may well have been able to think out certain passages in his head and to remember them without requiring formulae to help him with them" (1962, p. 32). See also WEST 1982, pp. 154–156.

28 This distinction is close to the "truer and less confusing antithesis" suggested by Kirk as an alternative to the simple one of oral vs. written, namely "between *natural composition in a formular tradition* (that is, 'oral poetry' in its primary sense) and *deliberate, self-conscious composition in a formular style*, whether with the aid of writing or not. The natural type of composition *depends on* a system of traditional verbal and rhythmical patterns, irrespective of whether it is significantly creative or almost completely reproductive. The self-conscious type is deliberately imitative; it *uses* but does not depend on formulas, just as it may use but does not necessarily depend on writing" (1966, p. 174; italics in the original). Another term proposed in this context is "post-oral" (FRIEDRICH 2007, p. 142). The author uses it however

The close links between oral and oral-style poetry make it very difficult to deduce from the objective linguistic[29] features of a text passage in Epic Sanskrit if it was composed as traditional oral poetry or in some other way. To be sure, there are a few criteria that have been used (with mixed results) in classical philology and in oral poetry research to distinguish between these two types of texts; Miller, e.g., lists as many as ten "generally accepted" characteristics of oral literature (1987, pp. 351–352). The special problem with regard to the *Mbh* derives from the fact that, if it contains written down versions of oral poetry at all, these (possible dispersed) passages will in all probability form only a part of the epic. In this situation the most promising approach appears to be an analysis of enjambements on the lines of analogous research by classicists. Once more Milman Parry was the pioneer of this approach,[30] introducing a basic distinction between "necessary enjambements", i.e., extensions of a sentence beyond line or verse boundaries consisting of essential elements (e.g., the main verb), and such continuations, so-called "unperiodic enjambements" that contain additional, free material, like attributes — according to Parry, the first type is rarer in oral than in written poetry, but in the second type the reverse is the case. Vasil'kov after checking the evidence in a sample of the *Mbh* claims that necessary enjambements are altogether absent or very rare in his text (1971, p. 97). It must be doubted if this result holds true for the whole epic; at least strong variations in different textual regions are to be expected.

Be that as it may, a thorough and comprehensive study of enjambements in the *Mbh* is still a *desideratum* and other reliable methods for identifying possible passages of direct oral origin in the text of the *Mbh* are presently not in sight though the progress of computer-based textu-

specifically for a transitional kind of style, just after the oral phase, which would be less consistent with regard to the *Mbh*, where some passages were probably composed long after the disappearance of a living oral epic tradition in Sanskrit.

29 Also narrative features, such as the usage of themes, often appear in discussions of orality and writing but these aspects do not fall into the scope of the present study.

30 Cf. the seminal paper Parry 1929, Lord 1948, where oral Southslavic material is compared, and Dunkel 1996 for an investigation of Latin texts. Kirk (1966a) refines the categorisation of enjambements and Barnes (1979) draws attention to some methodological problems involved in this kind of research. A review of research on enjambement in Greek literature can be found in Edwards 1986a, pp. 223–229.

al analysis promises to be of great help.[31] For the present task therefore it seems the best solution is to simply take the data indiscriminately from the entire *Mbh* (with the qualifications given in section 1.2.1) which can be regarded as largely consisting of passages composed either as written-down oral poetry or as oral-style poetry (where the existence of the first group is doubtful).[32] This decision must certainly lead to a focus on features common to both oral and oral-style poetry and to a mixing of specific features (provided the first kind of features are to be found in our texts at all) but for the time being I see no practical way to avoid this consequence.

## 1.2 Technical part

As already pointed out at the beginning of this introduction, the specific trait of the present study consists in the fact that it makes systematic use of a digital text of the *Mbh*. For the analysis of this material it was necessary to develop several statistical methods and dedicated computer tools, because the fundamental role of metrical data had to be taken into account, which is not done in standard tools for computational textual analysis.[33] The methods employed therefore require some explanation, which will be provided in this introductory section.

31 The difficulty of achieving reliable results in this field of research can be assessed by looking at comparisons of the Homeric epics (as examples of an oral style) with the *Argonautica* by Apollonius Rhodius, a work that is in many respects modelled on the Homeric epics but which is with certainty the product of written composition. In a careful study Cairns (1998) shows that the relationship between the Hellenistic work and its archaic models is a very complex mixture of distancing and imitation, including even a kind of hyper-oralisation — in a word, the use (and deformation) of oral features in written works can be so variegated that sometimes a traditional manual analysis may be preferable over a computer-based one that would be only focussed on measurable traits.

32 In addition we have a comparatively small group of short passages, characterised, e.g., by long compounds, that are clearly of a *kāvya* or proto-*kāvya* type. Due to their low frequency they leave only slight traces in the following statistics.

33 There are, however, some studies dealing with Greek and Latin material that served as a kind of inspiration, like: Pavese & Boschetti 2003, Eder & Pawłowski 2001, Eder 2008, Pawłowski et al. 2010.

### 1.2.1 Textual basis

The choice of the *CE* as the textual basis of this study was initially motivated by purely practical reasons, as at the beginning of this project it was the only available digital version of a full *Mbh* text. Later, in 2012, the text of the Bombay edition was also published digitally[34] but for the present purpose the *CE* still seems to be the better choice as it delegates material that is generally believed to be later to the appendices and to so-called "star passages"; quite apart from its other advantages and disadvantages, this aspect makes it particularly suitable for the present purpose.[35] When preparing the analyses of formulaic elements and the statistics presented below these probably late additions were ignored because checks on sample verses showed that they tend to show quite large differences from the main text. A systematic survey of these passages against the backdrop of the formulaic structures presented in this work might therefore prove to be worthwhile in the future.

In addition to the appendices and star passages two further parts of the *CE* were left out of consideration. Firstly, only *anuṣṭubh* verses form the basis of the following analyses because they make up the bulk of the text (93.8% of non-prose lines without appendices and star passages) and only they appear in numbers large enough to allow for a large-scale statistical approach; which means that both prose passages[36] and verses in other meters (mostly in *triṣṭubh*)[37] are excluded. Secondly, variant readings could be taken into account only very selectively for the simple

34 See http://sarit.indology.info/exist/apps/sarit/works/sarit_mahābhārata.

35 For a fundamental critique of the editorial strategy employed in preparing the *CE* see for example Lévi 1928, Lévi 1932, Biardeau 1968, Biardeau 2002 (pp. 18–20) and Dunham 1991. I would admit that, e.g., from the point of view of the history of religions the uncritical acceptance of the *CE* would be indeed problematic but as far as the study of formulaic diction is concerned it is definitely the most suitable text we have.

36 It may be noted in the margin that the prose passages of the *Mbh* formed the basis of one of the pioneering computer analyses of Sanskrit texts: van Nooten 1969.

37 In principle, several statistical methods used for ślokas in this study could *(mutatis mutandis)* also be applied to *triṣṭubh*s, but of course separately. In her analysis of the *triṣṭubh* verses (Smith MC 1992) Mary Carroll Smith does use the framework of oral poetry theory but is more interested in establishing a textual "core" of the *Mbh* than in the details of formulaic diction (for a summary and critique see Brockington 1998, pp. 120–127). For a more statistical approach to the *triṣṭubh* material cf. Fitzgerald 2005 and Fitzgerald 2009.

technical reason that they are not part of the digitised *CE* and so had to be looked up manually. This is a pity because the variants may contain interesting pieces of information, like associations of certain formulas or versions of formulas with regional traditions, etc; in addition, it is also quite probably that a number of readings could be improved using the results of the statistics provided in this study.

After removing the above-mentioned parts from the text 141,490 *anuṣṭubh* lines remained. For statistical purposes it is often necessary to calculate the frequency of some observation per text unit. Then, the problem is that the main divisions of the *Mbh,* which are encoded in the line numbers of the digitised version of the CE, i.e., 18 major *parvan*s and 1,941 *adhyāya*s, are in many cases respectively too large or too small to obtain meaningful statistics. Of course one can avoid this problem by dividing the text into completely technical units of a suitable length (e.g., 1000 lines) or (sometimes) by applying the "moving average" method; i.e., by calculating the relevant value for "windows" of a certain number of lines that "move" through the text (e.g., frequency of observation *O* per intervals: l. 1–1000, l. 2–1001, l. 3–1002 ... l. 140491–141490). But these two methods completely ignore traditional divisions, content and narrative structure, which may skew the results. In order to minimise this effect, for some statistics a middle way was employed: The text was manually divided into units that are on the one hand large enough to allow for meaningful statistics and on the other hand coincide with natural divisions based on content or narrative structure, the general aim being a length of about 1000 lines. Whenever possible the units were formed in accordance with traditional divisions (non-major *parvan*s and *upākhyāna*s). In this, a number of compromises proved to be necessary because the traditional or most natural divisions sometimes were either considerably longer or shorter than the target length; in these cases a decision had to be taken to either divide or merge these passages, or else to accept exceptionally long or short units. A list showing the passages selected in this way is in appendix A1. They feature a median length of 1052 lines, but as many as 9 units are shorter than 550 lines and the length of 13 of them exceeds 1550 lines. These length differences must of course be taken account of in statistical comparisons, e.g., by calculating weighted values. It should be emphasised that these manually selected text units (= MSTUs) have a solely practical purpose and do not imply any assumptions about authorship, textual history and the like.

A short note on the translations given for the quotations. Wherever possible, existing translations were used, sometimes in a slightly modified form. In the case of those taken from volumes of the "Clay Sanskrit Library" series (= *CSL*), which largely follow the text of the *BE*, the *CSL* verse numbers were added and the orthography of the names was changed according to the standard transliteration. As a rule, translations are only provided for full ślokas.

### 1.2.2 Metrical aspects

As noted above, the following investigations will be based entirely on verses in *anuṣṭubh* verses. This metre is well-known,[38] but a comprehensive empirical approach was practically impossible before the availability of digital texts. The first scholar to use a digitised version of the whole *CE* for large-scale metrical studies was Tokunaga.[39] His relevant publication must therefore be regarded as ground-breaking in itself, but failed to produce many interesting results, as the author notes with some disappointment (Tokunaga 1995, p. 6). The main reason for this limited success lies in the fact that Tokunaga for the calculation of relative frequencies only made use of the division into eighteen major *parvan*s, whereas a more fine-grained division would have been required to discover the kinds of differences in the distribution of metrical patterns that he was looking for. Astonishingly enough, neither he himself nor anyone else seems to have continued and refined his very promising approach, (though Tokunaga does envisage the use of smaller text units [1996, p. 6]). I am planning to do this in a separate publication. In the present context other aspects of the metrical data will be explored, but first it is necessary to present some basic empirical facts about the *anuṣṭubh* in the *Mbh*.

38 For a convenient overview of the possible variations in *anuṣṭubh*s see Steiner 1996 and Murthy 2003. Though this paper mainly deals with the classical *anuṣṭubh*, the rules presented are mostly valid for the epics also; for specific studies of the śloka in the *Mbh* see Jacobi 1896 and the relevant passages in ch. 4 of Hopkins 1901. Further details may be found in the literature given in Steiner 1996, to which (as far as Buddhist texts are concerned) Balk 2011 should be added.

39 But mention must be made of the forerunner studies, van Nooten 1968 and Ingalls 1991.

#### 1.2.2.1 Statistical survey

In the main text of the *CE* (as defined above) there are 141,652 lines featuring the regular number of 16 syllables; the 284 hypermetric and 4 catalectic lines will be ignored in the following statistics.[40]

##### 1.2.2.1.1 Metrical patterns

Let us start with a simplified schema of the standard epic *anuṣṭubh*:

*(a)* ⏑ ⏑ ⏑ ⏑ ⏑ – – ⏑ ⋮ *(b)* ⏑ ⏑ ⏑ ⏑ ⏑ – ⏑ ⏑ |
*(c)* ⏑ ⏑ ⏑ ⏑ ⏑ – ⏑ ⏑ ⋮ *(d)* ⏑ ⏑ ⏑ ⏑ ⏑ – ⏑ ⏑ ||

There are only two sets of metrical rules: for pādas[41] *a* and *c* on the one hand, and for pādas *b* and *d* on the other; no difference is made, either in theory or in practice, between the first and second half of a śloka. Therefore, as a rule, statistics will be prepared line by line, often separately for odd pādas (i.e., all first pādas in the lines of a given passage) and even pādas (i.e., all second pādas). In this way the occasional three-line verses that make up 6.2% of stanzas can also be included. Syllables are counted starting from the beginning of a line, so range between 1–16; when the position of a word in a line is specified, it is indicated by an upper index at its beginning, which may be illustrated by the following line, the first one of the *CE:*

**Q1** 01,001.000ab [1]*nārāyaṇaṃ* [5]*namaskṛtya* [9]*naraṃ* [11]*caiva* [13]*narottamam*

In each pāda, in turn, the first four syllables (= the opening) and the last four syllables (= the cadence) are treated separately, so that four basic frequency tables need to be presented: openings of odd pādas (T1) and even pādas (T2), cadences of odd pādas (T3) and even pādas (T4).

40 With regard to these irregularities see HOPKINS 1901 pp. 251–261 (on hypermetric lines) and TOKUNAGA 1995 pp. 16–22 (on both types).

41 Due to their high frequency the terms "pāda" and "śloka" will be regarded as quasi-loanwords in this study and will therefore be typed in roman, not in italics.

**T1.** Frequencies of opening sequences, odd pādas

| Opening | Freq. | Perc. | Opening | Freq. | Perc. |
|---|---|---|---|---|---|
| – ⏑ – – | 21,371 | 15.1% | – – ⏑ ⏑ | 8,797 | 6.2% |
| – – – – | 17,235 | 12.2% | ⏑ – – ⏑ | 8,344 | 5.9% |
| ⏑ – – – | 14,057 | 9,9% | ⏑ – ⏑ ⏑ | 7,321 | 5.2% |
| ⏑ – ⏑ – | 13,352 | 9.4% | ⏑ ⏑ – ⏑ | 5,642 | 4.0% |
| ⏑ ⏑ – – | 12,278 | 8.7% | – ⏑ ⏑ – | 9 | < 0.1% |
| – – ⏑ – | 12,227 | 8.6% | – ⏑ ⏑ ⏑ | 6 | < 0.1% |
| – ⏑ – ⏑ | 11,674 | 8.2% | ⏑ ⏑ ⏑ – | 5 | < 0.1% |
| – – – ⏑ | 9,332 | 6.6% | ⏑ ⏑ ⏑ ⏑ | 2 | < 0.1% |

Here attention is drawn to only two things:[42]

1) Compared with otherwise identical sequences, versions with a long fourth syllable are clearly preferred.
2) In accordance with the well-known rule, the sequence $^{2}$⏑ ⏑ is strongly avoided; nevertheless it is found in a few exceptional lines.

**T2.** Frequencies of opening sequences, even pādas

| Opening | Freq. | Perc. | Opening | Freq. | Perc. |
|---|---|---|---|---|---|
| – ⏑ – – | 23,958 | 16.9% | ⏑ – ⏑ ⏑ | 8,048 | 5.7% |
| – – – – | 20,108 | 14.2% | ⏑ ⏑ – ⏑ | 7,311 | 5.2% |
| ⏑ – – – | 15,685 | 11.1% | ⏑ – ⏑ – | 101 | 0.1% |
| – ⏑ – ⏑ | 14,691 | 10.4% | – – ⏑ – | 15 | < 0.1% |
| – – – ⏑ | 14,464 | 10.2% | – ⏑ ⏑ ⏑ | 5 | < 0.1% |
| ⏑ ⏑ – – | 13,951 | 9.9% | ⏑ ⏑ ⏑ – | 2 | < 0.1% |
| – – ⏑ ⏑ | 11,947 | 8.4% | – ⏑ ⏑ – | 1 | < 0.1% |
| ⏑ – – ⏑ | 11,364 | 8.0% | ⏑ ⏑ ⏑ ⏑ | 1 | < 0.1% |

Three observations may be noted concerning openings in even pādas:

42 For a more detailed discussion of metrical regularities and irregularities in the *Mbh* see generally ch. 4 of HOPKINS 1901 and TOKUNAGA 1995.

1) The above remark concerning the sequence $^{2}\smile\smile$ is also true here.
2) Not so the first point regarding the fourth syllable.
3) The sequence $^{2}-\smile-$ is mostly avoided.[43]

**T3.** Frequencies of cadences (syllables 5–7), odd pādas[44]

| Cadence | Freq. | Perc. | Name |
|---|---|---|---|
| ⏑ – – | 122,239 | 86.3% | *pathyā* |
| ⏑ ⏑ ⏑ | 7,351 | 5.2% | 1st *vipulā* |
| – – – | 5,513 | 3.9% | 3rd *vipulā* |
| – ⏑ ⏑ | 4,479 | 3.2% | 2nd *vipulā* |
| – ⏑ – | 1,893 | 1.3% | 4th *vipulā* |
| ⏑ – ⏑ | 110 | 0.1% | — |
| ⏑ ⏑ – | 56 | < 0.1% | — |
| – – ⏑ | 11 | < 0.1% | — |

The most frequent, standard version of the odd-pāda cadence is known as *pathyā*, four other less common types as *vipulā*s. Not all *vipulā*s may follow every opening; these details will supplied where they are relevant (see below p. 163).

**T4.** Frequencies of cadences (syllables 5–7), even pādas

| Cadence | Freq. | Perc. |
|---|---|---|
| ⏑ – ⏑ | 141,550 | 99.9% |
| – – ⏑ | 101 | 0.1% |
| ⏑ ⏑ ⏑ | 1 | < 0.1% |

As can be seen, the standard cadence in even pādas dominates not only according to the rules, but also practically; in addition, the seemingly

43 When it does occur, it is mostly in order to achieve a poetic effect; this is especially obvious between 12,309.032–69, where no less than 50 lines of the following highly iambic type occur: ⏑ – ⏑ – ⏑ – ⏑ – ⋮ ⏑ – ⏑ – ⏑ – ⏑ ⏑.

44 Because the last syllable is unregulated, it can be left out of consideration here.

irregular sequence [13]– – ⏑ probably in most instances is an artefact because its first syllable should exceptionally be counted as *laghu*.[45]

#### 1.2.2.1.2 Word break patterns

In order to understand the framework of a poetic diction it is necessary to learn, in addition to the possible metrical patterns, the rules regulating the positions of caesuras. In the *anuṣṭubh* there are only a few strict requirements of this kind. Most importantly, the main caesura between the first and second pāda of a line is obligatory (though compounds may straddle both pādas provided a boundary between its components is located after the first pāda); then there are some prescribed caesuras in connection with *vipulā*s (see below T56, p. 163). But even without the existence of rigid rules it is certainly possible to empirically distinguish between more and less popular caesura patterns, and information of this kind is highly useful for the analysis of formulaic diction. Unfortunately the preparation of such statistics is not as trivial as it might seem. Analysing the plain text of the digital *CE*, a computer can of course easily identify the positions of blank spaces, but these are not coextensive with caesuras, because not every word break is a caesura, but only those at particular semantic positions, which is difficult to determine for a non-human reader.[46] Another, issue, less serious because it is less frequent, is the fact that, as just noted, the boundaries between the elements of a compound and between two words linked by vowel sandhi are invisible to the computer. As these two problems cannot be solved at the moment, the best strategy is to prepare purely technical statistics of word breaks in the sense of blank spaces, and to keep in mind the aforementioned two insufficiencies when interpreting them. A full list of the occurring word break patterns — containing 126 different patterns for odd and 122 for even pādas — can be found in appendices A2 and A3. In order to get a better overview, some bits of information must be extracted from these lengthy listings. The following table shows the total number of word breaks after the single syllables of odd and even pādas:[47]

45 Cf. Hopkins 1901, pp. 242–244 and Tokunaga 1995, pp. 22–25.

46 Ingalls calls "the problem of word breaks ... the most difficult problem in Sanskrit metrics" (1991, p. 23). A subtle discussion of this problem with regard to lyric poetry can be found in Pollock 1977.

47 More fine-grained data are available at Sellmer 2015.

**T5.** Frequencies of word break positions

| Word break after syllable no. | Odd pādas | Even pādas |
|---|---|---|
| 1 | 18,018 | 11,131 |
| 2 | 49,345 | 45,808 |
| 3 | 52,869 | 54,138 |
| 4 | 51,981 | 55,036 |
| 5 | 38,160 | 31,555 |
| 6 | 56,131 | 35,896 |
| 7 | 15,506 | 8,311 |
| no word break | 4,897 | 8,010 |

Trying to gain some hints about actual caesura frequencies from the word break data, one may make the plausible assumption that word breaks after the first syllable (i.e., normally after a pronoun) and after the seventh syllable (i.e., mostly before an enclitic particle or pronoun) of a pāda should often not count as caesuras; those after the second syllable also tend to be doubtful. Then the most popular "caesura-like" pāda word break patterns (in the sense of combinations of word breaks in a pāda which are likely to be at the same time caesuras) can be made visible by simply removing the word breaks that probably do not fulfil the syntactic and semantic criteria for caesuras and preparing a frequency table for each type of pāda. For the preparation of the following listings word breaks after syllables 1, 2 and 7 were removed; afterwards, the figures for pādas with a word break only after the second syllable were added, as these may often be regarded as caesuras; the results being shown in T6.[48] Also in this case a detailed discussion is beyond the scope of this study. It can only be remarked that in a series of word breaks that immediately follow after each other (like, e.g., 4_5_6) only the last of them will normally be a caesura (hence in the example the caesura has to be assumed after syllable no. 6).

48 Every number *x* stands for "word break after syllable no. *x*"; combinations like "4_5_6" are to be understood as "word breaks after syllables nos. 4, 5, and 6".

**T6.** "Caesura-like" pāda word break patterns

| Odd pādas | | Even pādas | |
|---|---|---|---|
| Word breaks | Frequency | Word breaks | Frequency |
| 4 | 21,581 | 4 | 32,675 |
| 3_6 | 18,956 | 3 | 22,793 |
| 5 | 15,478 | 5 | 13,041 |
| 3 | 15,157 | 3_6 | 12,722 |
| 6 | 14,774 | 6 | 10,687 |
| 4_6 | 13,701 | 3_5 | 9,359 |
| 3_5 | 9,374 | 4_6 | 7,903 |
| 4_5 | 7,164 | 2 | 6,702 |
| 2 | 5,421 | 3_4 | 6,105 |
| 3_4 | 4,030 | 4_5 | 5,538 |
| 3_4_6 | 3,165 | 3_4_6 | 1,536 |
| 5_6 | 2,410 | 5_6 | 1,430 |
| 4_5_6 | 1,559 | 3_5_6 | 916 |
| 3_5_6 | 1,406 | 4_5_6 | 591 |
| 3_4_5 | 617 | 3_4_5 | 579 |
| 3_4_5_6 | 142 | 3_4_5_6 | 87 |

#### 1.2.2.2 Heterotopes and Polarisation

In analysing[49] metrical texts, it is crucial to always take account of the verse position of each word or phrase under discussion. I have therefore found it helpful to create a new item of linguistic analysis that inherently contains this information, and have since described it in two papers (Sellmer 2013a, Sellmer 2013b) and at several conferences: the heterotope. Strictly technically speaking, a heterotope is a class of character strings occurring at a certain metrical position of a hemistich. Its positi-

49 Based on the introductions in Sellmer 2013a and Sellmer 2013b.

on is marked by an upper index at the beginning that indicates the starting syllable, just like in Q1 (p. 28).[50]

In the case of texts using the standard transliteration, a heterotope normally is either a sandhi variant of a particular word form, or of the combination of more than one word form connected by vowel sandhi. It is important to note that it is *not* identical with a case form, let alone with a lexeme. The differences can perhaps best be exemplified by using a table:

**T7.** Heterotopes and other entities of linguistic analysis

| Entity | Examples |
|---|---|
| Lexeme | *deva* |
| | *manas* |
| Word form | *deva* (voc. sg.) |
| (before sandhi) | *devaḥ* (nom. sg.) |
| | *manaḥ* (nom. sg.) |
| | *manaḥ* (acc. sg.) |
| Character string | *deva* (< voc. sg. or nom. sg. or loc. sg.) |
| (result of sandhi) | *mano* (< nom. sg. or acc. sg.) |
| | *mana* (< nom. sg. or acc. sg.) |
| | *caiva* (belonging to two lexemes simultaneously: *ca* and *eva*) |
| Heterotope | $^{3}$*deva* (string starting at the 3$^{rd}$ syllable of a line) |
| | $^{5}$*mano* (string starting at the 5$^{th}$ syllable of a line) |
| | $^{5}$*mana* (string starting at the 5$^{th}$ syllable of a line) |

The reason for defining heterotopes as classes of strings and not of word forms, which might seem more natural, is the fact that in some cases (like $^{5}$*mano* and $^{5}$*mana)* two strings — even if they are only sandhi variants of the same form (here, say, *manaḥ*, acc. sg.) — have a different metrical structure (here, ⏑ – versus ⏑ ⏑), and this is a crucial piece of information in contexts like the present one. To be sure, sometimes it is

50 The name was chosen firstly because heterotopes are bound to different places (ἕτεροι τόποι) of a line, secondly in order to evoke associations with chemical isotopes, which have a similar relationship to their element as heterotopes to their base string.

useful to treat all heterotopes related to a certain word form as one group, but such groups can only be formed in an *ad hoc* manner.

Heterotopes are more than simply a generally handy device to refer to certain textual items; they are especially useful to describe a highly important phenomenon in languages with formulaic elements that will be discussed in the rest of this subsection. Most people with some experience in reading the Sanskrit epics will have noticed that many words have a tendency to appear at some metrical positions much more frequently than at others, and the same is true for Homeric Greek, so that the following words by Foley quite accurately describe the situation in Epic Sanskrit also:

> Homer's traditional words are metrically defined. That is, rather than being merely lexical, phonological, morphemic, and syntactic entities, they are metrical or prosodic entities as well, and that prosodic character emanates not from lexical features but from verse structure (Foley 1990, p. 66).

The first Indologist to have given a name to this phenomenon is probably Daniel Ingalls in his ground-breaking paper "The Mahābhārata. Stylistic study, computer analysis, and concordance" (Ingalls 1991). Using the terminology of natural sciences he calls it "polarisation", and in my publications I have adopted this usage of the word (with the qualification that it refers to strings).

For the sake of completeness one must, however, add that Ingalls was (to my knowledge) the first scholar who discussed this phenomenon in the context of the *Indian* epics — but in the field of Homeric studies a related, though not identical topic, has been known and thoroughly researched for quite some time under the title of "localisation". This term, introduced by O'Neill (1942), originally does not, however, refer to the distribution of particular words over verse positions, but to *word types* with a given prosodic structure.[51] Applying the same method to the *Mbh*, for words (better: strings) with the prosodic structure – ⏑ ⏑, to give just one example, the localisation table looks as follows:

51 Cf. also Perkins 1952; for applications in formulaic theory see Russo 1963 and Russo 1966; discrepancies between the localisation patterns of certain words and the respective word types are discussed in Bakker 1988, pp. 64–186.

**T8.** "Localisation" of strings with the prosodic structure – ⏑ ⏑

| Starting syll. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokens | — | 190 | 961 | 100 | 13 | 18 | — | — | 2 | 226 | 1,678 | — | — | 16,416 | — | — |
| Percentage | — | 1.0 | 4.9 | 0.5 | 0.1 | 0.1 | — | — | < 0.1 | 1.2 | 8.6 | — | — | 83.7 | — | — |

Localisation in this sense will not be used in the present study. But as the relevant data have never been prepared for any Sanskrit text so far, a complete set will be given at Sellmer 2015.

What exactly is meant by polarisation can easily be explained with the help of heterotope terminology by giving a few examples. The barplots in Fig. 2 show the frequencies of the different heterotopes related to the strings *rājan*, *rājñā* and *ca*, respectively. It can be seen at first glance that all of these strings are not evenly distributed, but have clear preferences for certain verse positions. This is actually the case for *all* strings found in the *Mbh* — in this sense polarisation must be considered the epic norm. But clear differences in degree can be observed: Whereas *rājan* occurs almost exclusively as the heterotope $^{7}$*rājan* (Ingalls calls such cases "frozen" [1991, p. 25]), the distribution is less unequal for $^{7}$*rājñā*, and *ca* is markedly more evenly distributed than the other two strings.

Ingalls did not envisage the possibility of quantifying the degree of polarisation, i.e., the inequality of distribution among the different metrical positions, but when starting my analyses, I realised that this certainly would be a very useful thing to do, so I developed a method that proved to be helpful. There are several ways to measure inequality, but having tried some of the most popular methods developed in different sciences it seems to me that the best results for the problem of polarisation measurement can be obtained by using the so-called Gini coefficient that is normally used to measure the inequality among the levels of income in a society.

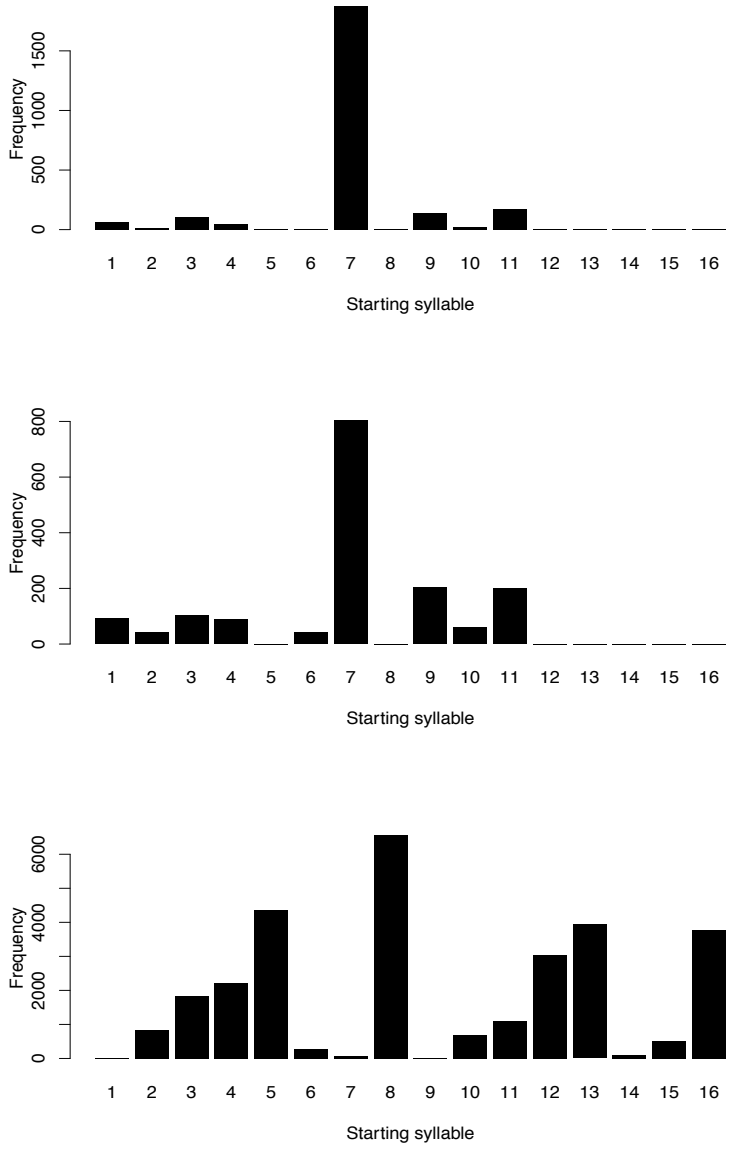


**Fig. 2.** Frequencies of heterotopes of *rājan* (top), *rājñā* (middle), and *ca* (bottom)

The general idea is to construct two Lorenz curves[52] (see Fig. 3): one representing a completely even distribution of income *(a),* the other showing the actual state in a given society *(b).* Speaking graphically, the Gini coefficient then is obtained by dividing area *A* between the line of equality and the Lorenz curve representing the actual state by the whole area of the triangle formed by the axes and the line of equality.

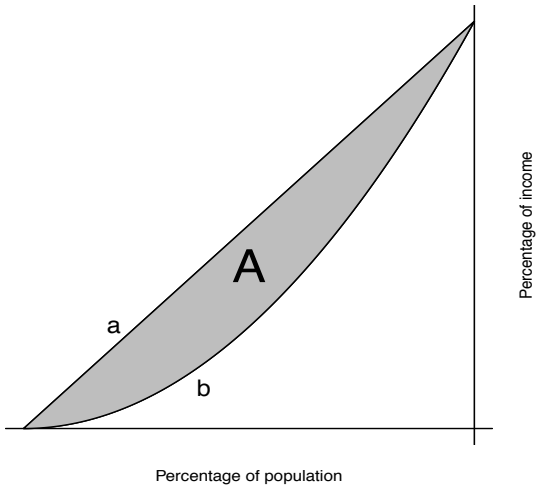


**Fig. 3.** Graphic explanation of Gini coefficient

It is not necessary to give the general method of calculation here because in our special case we always have some important pieces of information, namely the number of syllables among which the occurrences of a word are distributed and the frequencies for every syllable. This makes it possible to use a simplified and rescaled formula that was proposed by the development economist Angus Deaton (1997, p. 139):

**Form. 1.** Gini index according to Deaton

$$\gamma = \frac{N+1}{N-1} - \frac{2}{N(N-1)\mu} \sum_{i=1}^{N} \rho_i x_i \quad ,$$

52 A Lorenz curve represents the relationship of a certain percentage of the population of a society (*x*-axis) to its share in the total income of this society (*y*-axis).

where *N* is the number of people, *μ* the mean income, and *ρ* the income rank of the person with income *x*, the persons being ranked in decreasing order.

By inserting the known values in connection with a calculation of polarisation, we get:

**Form. 2.** Calculation of polarisation

$$P = \frac{17}{15} - \frac{2}{15f} \sum_{i=1}^{16} Pos_i x_i \quad ,$$

with *f* symbolising the overall frequency, $Pos_i$ the rank of metrical position *i* (in decreasing order according to the frequencies of the heterotopes starting there) and $x_i$ the frequency of a given heterotope.

As all of the values must lie between 0 (= no polarisation, i.e., appearing at all 16 metrical positions with the same frequency) and 1 (= complete polarisation, i.e., appearing only at one metrical position), this formula can be used to calculate the measure of polarisation. I propose, only half-jokingly, to name this new unit after the mythical author of the *Mbh*, Vyāsa (symbol: Vy). When we apply Form. 2 to our three examples the following polarisation values are obtained:

- *rājan* 0.919 Vy
- *rājā* 0.731 Vy
- *ca* 0.594 Vy

The phenomenon of polarisation is crucial to the understanding of the epic language, and the possibility of treating it in a precise, quantifiable manner is especially useful for studies of formulaic diction. Here, only a few remarks will be added to avoid common misunderstandings.

Most importantly, it must be underscored that what is being discussed here is an *absolute* notion of polarisation, i.e., only the actual number of metrical positions where a given word appears and the total number of syllables in a line (= 16) are taken into account. In other words, it is irrelevant how many metrical positions a string could theoretically occur in. E.g., a string of 16 syllables can of course only start at the first syllable, but this does not change the fact that its polarisation value equals 1, just as in the case of a monosyllabic string (with 16 possible

positions) or an octosyllabic string (with < 9 possible positions) which happens to occur at only one position. It is also possible to calculate a relative polarisation value which takes into account the localisation (in O'Neill's sense; see above p. 35 f.) of all those strings with the same prosodic pattern as the string in question. It will not be used in the present study, but the values are included in the databases at SELLMER 2015.

Secondly, is should be noted that polarisation is a purely *descriptive* concept that does not tell anything about the reasons for a given polarisation value. In practice there tend to be multiple factors, of which the following ones are often most important:

- *Prosodic structure:* longer words in particular can only stand in a limited number of verse positions without violating metrical rules.
- *Word order*: for some words the general rules of Sanskrit word order require or forbid certain positions in the sentence, which also has consequences in terms of polarisation. (E.g., *ca* and all other enclitics may not appear at the beginning of a pāda.)
- *Formulaic diction:* a heterotope that is part of a popular formulaic expression frequently and automatically occurs in the same verse position, which typically leads to a high polarisation value.

For further important measures that are based on polarisation, in particular what I call "exceptionality", see SELLMER 2013b.

At the end of this section a terminological note will be in order. When high precision is necessary, the term "hetorotope" will be consequently applied, but for stylistic reasons in contexts where no misunderstandings are to be feared often simply "word" will be employed in a non-terminological manner, e.g., when referring to the single elements of a verse.

### 1.2.3 Databases

In his 1991 paper already referred to several times Daniel Ingalls gives an account of his (and his son's, who happens to be a high-level computer specialist) visionary efforts in the mid-seventies of the last century to encode the text of the *Mbh* using a dedicated OCR program, as well as to prepare a metrical concordance and to analyse it with computer aid

in different respects. Though extremely promising, the project did not receive official support and so came to a halt (Ingalls 1991, p. 56).

Today, with the electronic text of the *CE* readily available and programming no longer being the exclusive domain of IT specialists, the realisation of such projects as a metrical concordance is essentially unproblematic. This study rests on a number of interconnected relational databases that were built using the programming language R (see R Core Team 2015),[53] which is quite popular among statisticians and natural scientists, but can also very well be applied to text-based studies. Together with dedicated tools developed to make efficient use of them these databases are freely available at Sellmer 2015. (In addition to the fundamental bits of information mentioned above, several other statistical features are also available in the databases, some of which will be used in the main part of this study.) The following databases will be briefly enumerated and characterised with respect to the basic types of information contained in them:

- Text transformed into metrical symbols
- List of character strings
- List of heterotopes
- Polarisation table
- N-gram list

The following line will be used to provide examples:

**Q2** 01,055.002cd *pravakṣyāmi mataṃ kṛtsnaṃ vyāsasyāmitatejasaḥ*

*Text transformed into metrical symbols.* The text was line by line transformed into symbols carrying information about the metrical value of each syllable. Information about pādas or other parts of a line is partly included and can in the remaining cases easily be extracted. Words breaks are recorded pāda-wise. The entries for Q2 look as follows:

53 Technically speaking, these are so-called "data frames", a data structure specific to R, but basically equivalent to a relational database.

**T9.** Sample entries in metrical database

| Variable | Entry |
|---|---|
| Line number | 01,055.002 |
| Pāda types | cd |
| Running line number | 3177 |
| Metrical structure, whole line | ⏑ – – ⏑ ⏑ – – – – – – – – ⏑ ⏑ – ⏑ ⏑ |
| Metrical structure, 1st pāda | ⏑ – – ⏑ ⏑ – – – |
| Metrical structure, 2nd pāda | – – – ⏑ ⏑ – ⏑ ⏑ |
| Word breaks, 1st pāda | 46 |
| Word breaks, 2nd pāda | 0 |

*List of character strings.* A list of all 811,527 whitespace-delimited strings contained in the text was prepared. Every string is linked to several types of information, as here:

**T10.** Sample entries in string list

| Strings | Starting syllable | Number of syllables | Metrical structure | Line of provenance |
|---|---|---|---|---|
| *pravakṣyāmi* | 1 | 4 | ⏑ – – ⏑ | 3177 |
| *mataṃ* | 5 | 2 | ⏑ – | 3177 |
| *kṛtsnaṃ* | 7 | 2 | ⏑ – | 3177 |
| *vyāsasyāmitatejasaḥ* | 9 | 8 | – – – ⏑ ⏑ – ⏑ ⏑ | 3177 |

*List of heterotopes.* In order to obtain this list, first the strings of the previous list must be grouped into classes according to their starting syllables; the number of different heterotopes thus obtained is 226,750. Next, the size of the groups (i.e., the frequency of the heterotopes) is checked:

**T11.** Sample entries in heterotope list

| Heterotopes | Freq. | No. of syll. | Metrical structure |
|---|---|---|---|
| [1]*pravakṣyāmi* | 6 | 4 | ⏑ – – ⏑ |
| [5]*mataṃ* | 30 | 2 | ⏑ – |
| [7]*kṛtsnaṃ* | 50 | 2 | ⏑ – |
| [9]*vyāsasyāmitatejasaḥ* | 8 | 8 | – – – ⏑ ⏑ – ⏑ – |

*Polarisation table.* This is basically a frequency table of the string list. To this are added the number of heterotopes "belonging" to a base string and the polarisation value of the string calculated as explained in the previous section (and also information like metrical structure etc., which will not be listed below):

**T12.** Sample entries in polarisation table

| Character string | Freq. | Number of heterotopes | Polarisation value |
|---|---|---|---|
| *pravakṣyāmi* | 93 | 5 | 0.9427 Vy |
| *mataṃ* | 61 | 7 | 0.8667 Vy |
| *kṛtsnaṃ* | 93 | 7 | 0.8824 Vy |
| *vyāsasyāmitatejasaḥ* | 8 | 1 | 1.0000 Vy |

*N-gram list.* As in the analysis of formulaic diction *combinations* of strings are of special importance, it was helpful to prepare lists similar to the ones above for n-grams of strings. Because basically the same set of information was collected for n-grams of strings as for single strings, I will not add further example tables, but will only list the most frequent n-grams containing the strings of our example:

**T13.** Sample entries in n-gram list

| String n-gram | Freq. |
|---|---|
| [1]*ataḥ paraṃ pravakṣyāmi* | 9 |
| [13]*mataṃ mama* | 9 |
| [15]*jagat kṛtsnaṃ* | 8 |

The above examples were chosen in such a way that the limitations of the databases prepared for the present project become clearly noticeable also. First of all, it is important to remember that the fundamental items are strings, not words. This state of affairs is due to the fact that there is no version of the whole *Mbh* with the three features that would be needed to add the two levels of word forms and lexemes which are missing from the databases presented:

1) sandhi resolution
2) lemmatisation
3) semantic disambiguation.

Luckily, as regards the analysis of formulaic language, the semantic aspects of single words — for the study of which 2) and 3) would be indispensable — is less important. The lack of sandhi resolution is a more serious limitation, because on the one hand it unnecessarily increases the number of items by creating inessential differences (like between *⁷kṛtsnaṃ* and *⁷kṛtsnam*), and on the other hand is responsible for items such as *vyāsasyāmitatejasaḥ*, which are really combinations of more than one word fused by vowel sandhi (here: *vyāsasya* and *amitatejasaḥ*). The strategy adopted in this respect was to deal with sandhi manually wherever this proved to be necessary.

So, although the mentioned limitations did not cause any fundamental problems for the present study, I plan to prepare a much improved set of metrical databases as soon as Oliver Hellwig's amazing DCS version of the *Mbh* (HELLWIG 2012), which contains all of the missing features referred to earlier will be completed.

### 1.2.4 Statistics and visualisation

In the following analyses no advanced statistics are employed, but as a statistical approach is unusual in Indology it will be helpful to explain and exemplify some of the main methods and basic visualisations that are utilised here; others will be introduced on the occasion of their first use. But first a few general remarks are in order. Statistics as such tend to give the impression of being absolutely precise and objective; but this is not necessarily the case, so it is important to highlight potential sources of imprecision regarding the statistics used in this book. Apart from

outright mistakes in the construction of the computational tools, which hopefully have been avoided, it must be acknowledged that in many cases there is a certain margin of interpretation, e.g., how to classify a given verse. These small decisions are too numerous to be discussed in each single case, but this is not necessary either because in the following analyses the numbers of observations is normally so big that "soft" decisions in certain instances are of only secondary importance. Nevertheless, these decisions do have an influence on absolute numbers; therefore all absolute figures (apart from those referring to completely technical features, like the number of syllables) should be regarded as only approximate.

Two of the basic categories in the following analyses — distribution and density — will be illustrated using the string *pravakṣyāmi*[54] and its heterotopes. As can be seen from the following small polarisation table (T14), there are 5 heterotopes with, in total, 93 occurrences of *pravakṣyāmi* (or shorter, $5_{93}$ heterotopes — from now on this compact notation will be used where figures for both types and tokens are given).

**T14.** Heterotopes of *pravakṣyāmi*

| Starting syllable | Freq. |
|---|---|
| 1 | 6 |
| 2 | 2 |
| 5 | 73 |
| 9 | 8 |
| 10 | 4 |

Now, in addition to global information like frequency, it is often interesting to know in which parts of the *Mbh* some textual element occurs. In the following chapters this will often be visualised by marking occurrences with the pipe character (|) at the appropriate places along a horizontal axis divided into 141,940 sections each of which symbolises

54 If not explicitly stated otherwise, instances where string *A* is a substring of string *B* are not counted as instances of *A*. So, to give an example, the underlined substring in *saṃpravakṣyāmi* is not considered an instance of *pravakṣyāmi*.

one line of the *Mbh*.[55] In the following diagram Fig. 4 there are six parallel series of such vertical strokes: one for each of the five heterotopes, with the left axis showing the starting syllable (i.e., 1, 2, 5, 9, 10), and one summary series with the occurrences of all heterotopes at y = 0. Additionally, the frequencies are given on the right axis, and *parvan* boundaries are indicated by dotted lines.

It remains to explain the density curve. This curve is based on the positions of all occurrences of all heterotopes in the text, treated as numerical values between 1 and 141,940, according to the running number of the line where they appear. The underlying probability density function describes the relative likelihood of a random variable to take on a given value. The bandwidth is a parameter that controls the amount of smoothing.[56]

As the example given is merely meant as an illustration it may suffice to just point out some basic pieces of information that are readily extractable from the diagram and add only a short discussion by way of comment:

- The expression occurs with special frequency in Book XIV;
- it is generally much more frequent in didactic passages than in the Battle Books;
- there are short passages of high frequency at the beginning of Books I and VI.

The future form *pravakṣyāmi* mostly appears in the introductory remarks of a longer or shorter teaching, so it is easily understandable why it rarely features in battle descriptions. At the same time, it is much less clear why the word is distributed so unevenly in didactic parts of the *Mbh*. The answer to this question can only be given on the basis of a detailed analysis and comparison of all relevant passages, which will not be undertaken here. Such a situation is rather typical; one can generally observe that the strength of computer-based methods lies not only in helping to find answers to old problems but also in raising potentially fruitful new questions.

55 One has to remember that the *triṣṭubh* verses have been removed, so that the distances are in some cases smaller than in the full version of the *CE*.

56 Cf. R Core Team 2015, help file on the function `stats::density()`.

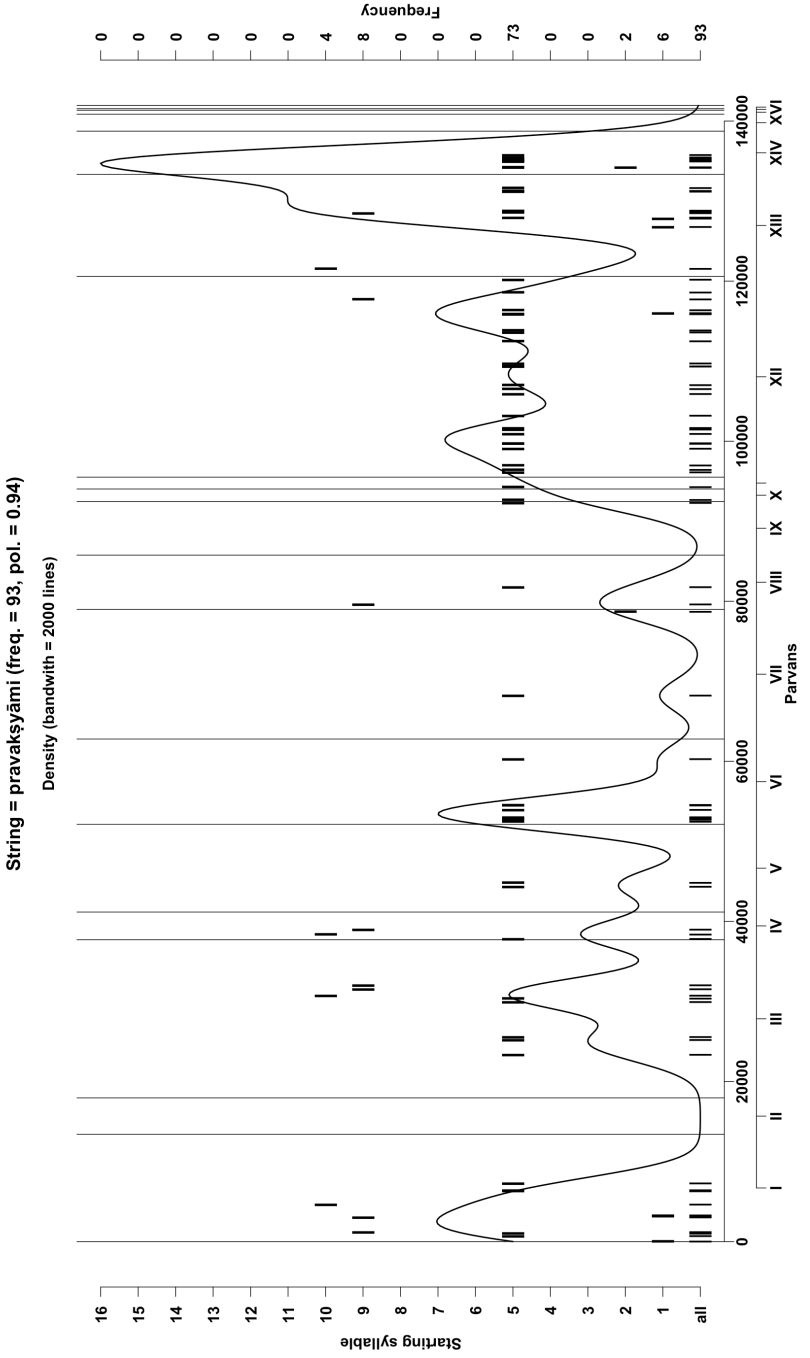


**Fig. 4.** Distribution plot of heterotopes of *pravakṣyāmi*

# 2
# REPETITIONS AND FORMULAIC ELEMENTS

## 2.1 Introduction

The main part of this study will be an attempt to trace, describe and order the elements of the language of the *Mbh* that can be characterised in quite a broad sense as "formulaic", "stereotyped" and the like. As in this field there is neither a fixed and universally accepted terminology nor a standard method these issues will have to be dealt with in an introductory section.

### 2.1.1 Terminology

The first task consists in clarifying the fundamental concepts of formulaic analysis.

#### 2.1.1.1 The formulaic question

At the birth of modern research on formulaic diction stands the simple and straightforward definition of its pioneer, Milman Parry, who conceived of the formula in the Homeric poems as "a group of words which is regularly employed under the same metrical conditions to express a given idea" (1930, p. 80). This understanding has become the basis of countless studies dealing with oral traditions all over the world; but scholars also arose who felt it was not able to adequately explain important phenomena that belong in the formulaic sphere and consequently proposed modifications or new definitions. The first expansion, which goes back to Parry himself, consists in not only considering fixed group of words as formulas but also allowing for formula systems in which fixed elements are combined with different variable elements (ibid., 85–89). With a further step towards abstraction one obtains the "structural formula" where, e.g., a noun with a particular prosodic structure and a verb with a particular prosodic structure are combined

at a certain verse position, thus leaving both elements as open variables.[57] Still more abstract is Nagler's model which he himself calls "generative". Here the place of the formula is taken by a completely ungraspable "preverbal Gestalt" or *sphoṭa* which is associated with rhythmic, phonetic and semantic features and which gradually evolves into a surface representation.[58] While Nagler's theory is so abstract as to not be easily applicable, there is another, much more concrete approach that also starts with an unverbalised initial idea but which offers a step-by-step construction schema of the verse whereby first essential, then more or less optional elements are combined.[59] A cognate conception has been proposed by Miller who uses concepts of text linguistics like "schema" and "script" to explain versification.[60] Bozzone's recent approach, which is based on construction grammar, belongs to a similar category.[61]

Each of the aforementioned major approaches has its weaknesses which have been duly criticised in the history of formulaic analysis;[62] but each also has its strengths. Therefore the policy in this study will not be to adopt or propose one master theory of formulaic diction and to lead the analysis in the appropriate direction, but to pragmatically look for all kinds of formulaic structures in the *Mbh*, using all the conceptions just presented whenever they promise to be helpful and fruitful.[63]

Of course, such a strategy presupposes at least some understanding of what can be regarded as "formulaic diction". As a working definition it may suffice to state: *Formulaic diction is the usage of prefabricated verbal or structural elements;* "prefabricated" just meaning that they are a ready-made part of a given language and so need not be generated from scratch each time.

57 Cf. Russo 1966.

58 Cf. Nagler 1974.

59 Cf. Visser 1987, Bakker & Fabbricotti 1991, Bakker 2005, ch. 2, and below section 3.7.

60 Cf. Miller 1987.

61 Cf. Bozzone 2010 and Bozzone 2014.

62 A survey can be found in Edwards 1986 and Edwards 1988, to which one should add Russo 1997.

63 In this approach I feel close to Russo's treatment of formulaic research in Homeric studies where he argues that instead of disagreeing about *the* right definition of the word "formula" one should be ready to accept "different *kinds* of formulaic realities in Homeric diction" (1997, pp. 259–260; italics in the original).

But here one qualification must be added. Empirical research has shown that formularity as such is no special trait of oral poetry — as used to be the opinion of oral poetry scholars — but is actually quite common in normal language, both spoken and written.[64] But the *Mbh* is composed in Epic Sanskrit, a language that evolved by producing, simultaneously, metrical patterns and the prefabricated elements fitting into these patterns (see above p. 15).[65] Therefore *only such elements will be discussed that are specific for Epic Sanskrit, not those that can be found in Sanskrit in general.* The former type is referred to in what follows by formulations like "element *X* belongs to the epic language", "is part of Epic Sanskrit", etc.

#### 2.1.1.2 Formulaic terminology in existing *Mbh* studies

As mentioned above, Sanskrit scholars are latecomers to formulaic analysis and therefore did not contribute significantly to its development. Nevertheless it is in order to summarise their terminological usages because they will appear repeatedly in the following analyses.

*Brockington* does not give any definition of relevant concepts, apparently taking it for granted that the situation is clear enough. Neither does he seem to be interested in fine distinctions between different categories of formulaic elements and so uses the terms "stereotyped expression", "stock phrase", "formula", and "formulaic expression" more or less indiscriminately. From the concrete examples he deals with it becomes clear that in his view only combinations of words can be considered elements of formulaic language, not single words.

*Grincer & Vasil'kov.* These two Russian scholars — who will be treated together because their work is closely related and complementary — use the following (not necessarily mutually exclusive) terms in their studies.

64 Cf. Bozzone 2010 and Wray & Perkins 2000. As one of the first attempts to explain formulaic phenomena with conceptions developed in the analysis of normal language Kiparsky 1976 has to be mentioned where formulas in Parry's sense are compared to "bound phrases".

65 So in a way both these are right: Hainsworth, that "the formula is the result of the singer's art and not its basis" (1989, p. 26); and Nagy who claims "meter is diachronically generated by formula rather than vice versa" (1976, p. 251).

As can be seen, they also regard certain single words as formulaic elements:

- *Supporting word (opornye slovo):* a word repeatedly occurring at the end of a pāda (see below 3.2).
- *Formula (formula):* undefined; understood more or less like in Parry's definition, but including one-word formulas.
- *Pure formula (čistaja formula):* a completely formulaic pāda (VASIĽKOV 1973, p. 12).
- *Formulaic expression (formuľnye vyraženie):* variations on traditional formulas (GRINCER 1974, pp. 64–67).
- *Developed formulas (razernutye formuly):* formulas of more than pāda length, forming two groups (one big, one small), depending on whether they appear in connection (a) with a common topic or (b) with a concrete hero (VASIĽKOV 1973, pp. 13–20, 20–23).
- *Cliché (formula-kliše):* developed formula with little or no variation (VASIĽKOV 1973, pp. 14, 20).

*Georg von Simson* offers quite an orthodox definition of the formula that emphasises its practical usefulness for an epic bard:

> Da es darum geht, das Handwerkszeug des epischen Dichters, also alles Wiederholbare, Erlernbare und daher Verfügbare in seiner ganzen Vielfalt zu erfassen, empfiehlt es sich, den Begriff Formel zunächst einmal so weit zu fassen, daß er jede Art innerhalb des metrischen Schemas lokalisierter sprachlicher Wiederholung umfaßt, die nicht primär ästhetischen Zielen dient, sondern durch die Situation des Verse improvisierenden Dichters bedingt ist (VON SIMSON 1982, p. 207).

He goes on to explain that single words meeting these criteria should "obviously" be regarded as formulas also (ibid., pp. 207–208).

*John Smith* discusses Parry's definition at some length adding many important observations from an Indological perspective (1987, pp. 273–279). He comes to the conclusion that formulas should to some extent be abstracted from the actual words and rather be viewed as a kind of "deep structure" or "*matrix* which may be realized by one or more groups of words. As such it would bear much the same relationship to the particu-

lar words which realize it as does a morpheme to its allomorphs" (ibid., p. 277). This idea has been put into practice by Bidnur (see below).

*Ingalls*. As to Ingalls' position, this scholar distinguishes between formulas and clichés. His explanation of the former is similar to the one given by Smith, but formulated more concretely; from the point of view of the performing oral poet:

> A formula is a framework for expressing any general incident or description that is likely to be needed by the oral performer. One or more words of the formula will remain the same in many occurrences and will always occupy the same metrical slot. In the remainder of the span covered by the formula the syntax will usually remain the same even if the words furnishing the syntax exhibit variation. One or more words of the formula must be varied whenever the reciter needs to express a particular rather than a general fact, and the formula is so built that it can easily be adapted to these particular cases without slowing up the performer in his recitation (INGALLS 1991, p. 27).

Clichés are understood by him — just like by Grincer — as formulas that show no variation (ibid., pp. 31–32).

*Bidnur* follows Smith's suggestion and conducts an analysis of a kind of formulaic structure she calls "grammatical substitution system" and defines it as follows: "A Gss. is a sum of syntactic units where part of the system remains as it is (comes repeatedly) and part of it is substituted by the metrically and most of the times syntactically equivalent units" (2009, p. 139).

It will be seen that in the following survey-cum-classification of formulaic elements all of the above types at one point prove useful and particular aspects will be discussed as appropriate. The terminology used in this work will be developed step by step. Here it will only be generally remarked that in connection with the *Mbh* caution should be exercised in applying arguments of oral poetry theory directly to formulaic elements in the received text. Whereas such arguments may be pertinent as far as the oral phase of epic text production is concerned, as soon as we enter the phase of *oral-style* poetry the role of formulas — even if they are outwardly the same formulas as before — is necessarily bound to change. As pointed out above (sections 1.1.3 and 1.1.4), we have no

certain knowledge about how different parts of the text of the *Mbh* are to be categorised in terms of oral vs. written composition; therefore it seems wise to keep separate the *description* of variation patterns and the like on the one hand and the *explanation* (in terms of oral poetry theory or otherwise) on the other.

#### 2.1.1.3 Repetitions

The main practical way to identify potentially formulaic elements in a text is to look for repetitions.[66] This term is less problematic than "formula" but still needs some introductory discussion.

##### 2.1.1.3.1 Number of elements

First of all it must be decided that only repetitions consisting of more than one word will be collected. To be sure, there are (as we have seen) scholars who have no problem with counting single words as formulas, but they fail to offer a solution for the inflation of formulaic elements that follows from such a decision. How could one-word formulas be distinguished from ordinary words? The only practical way is by using von Simson's criterion of being "localised in the metrical schema", in the sense that only frequent *and* highly polarised words should be regarded as formulas. This is at least a way to reduce their number a bit. Checking the databases, we find $565_{82330}$ strings with a polarisation value > 0.9 Vy and a frequency > 50, and $1092_{102641}$ strings with a polarisation value > 0.9 Vy and a frequency > 30, which still are formidable numbers. Let us have a brief look at the 26 most frequent highly polarised strings:

66 In BLOOMFIELD 1916 there exists an excellent, very large and well-ordered collection of repetitions in the *Ṛg-Veda*, but it cannot serve as a model for the present investigation, however, because of the smaller size and different character of this text. GONDA 1959 deals exclusively with stylistic repetitions in the Vedas. Klein has devoted several articles on repetition phenomena in the Rig Veda (see KLEIN 1999–), but does not deal with formulaic material. For the *Mbh* no reference works of a comparable kind are available, therefore Sharma — who in SHARMA 1964 himself collected a number of repeated poetic elements — proposes the compilation of an "Encyclopaedia of Poetic Formulae in the Great Epics and Purāṇas" (1988, p. 12).

**T15.** The 26 most frequent highly polarised (> 0.9 Vy) strings

| String | Freq. | Pol. | St. s.* | String | Freq. | Pol. | St. s.* |
|---|---|---|---|---|---|---|---|
| *tato* | 3,144 | 0.9182 | 1 | *viśāṃ* | 586 | 0.9984 | 13 |
| *rājan* | 2,433 | 0.9187 | 7 | *pate* | 579 | 0.9998 | 15 |
| *bhārata* | 1,931 | 0.9921 | 14 | *rājendra* | 560 | 0.9938 | 6 |
| *mahārāja* | 1,387 | 0.9970 | 5 | *tasmād* | 556 | 0.9101 | 1 |
| *evam* | 1,204 | 0.9446 | 1 | *mahat* | 515 | 0.9125 | 15 |
| *tatas* | 1,020 | 0.9152 | 1 | *mahātmanaḥ* | 473 | 0.9997 | 13 |
| *ha* | 862 | 0.9839 | 16 | *yudhiṣṭhiraḥ* | 467 | 0.9874 | 13 |
| *abravīt* | 827 | 0.9229 | 14 | *vacaḥ* | 452 | 0.9233 | 15 |
| *cana* | 788 | 0.9832 | 15 | *bhaviṣyati* | 441 | 0.9495 | 13 |
| *bharatarṣabha* | 767 | 0.9995 | 12 | *saṃyuge* | 436 | 0.9685 | 14 |
| *prati* | 706 | 0.9058 | 15 | *nṛpa* | 435 | 0.9862 | 15 |
| *śaraiḥ* | 649 | 0.9367 | 15 | *sarvaśaḥ* | 432 | 0.9938 | 14 |
| *bhavet* | 624 | 0.9316 | 15 | *arhasi* | 426 | 0.9546 | 14 |

*Starting syllable of the most frequently occurring heterotope.

In this list there are a few items that might be characterised as in a certain sense formulaic, especially the vocatives like *rājan, bhārata* etc. On the other hand it would be rather strange to regard the indeclinable *tataḥ* (here represented by the two sandhi forms *tatas* and *tato*) at the beginning of a line as a formula. So in order to distinguish between formulaic and non-formulaic words additional criteria would have to be introduced. It seems better, therefore, to stick to repetitions consisting of more than one word and to discuss words like the vocatives just cited, which indeed play an important role in formulaic diction, in a dedicated section (see 3.2).[67]

Speaking of "repetitions consisting of more than one word", the question of compounds must not be forgotten of course. Should they not be regarded as multi-word elements? In a purely technical sense they certainly belong to this category; but short and frequent compounds like *rājendra* or *mahārāja* — and this is the type in question here — function

67 See also de Jong's critique of the acceptance of one-word formulas by Grincer (DE JONG 1975, p. 38).

just like uncompounded words[68] and are probably also spontaneously perceived as such. There may be some cases where this is doubtful, but for the present purpose it nevertheless seems best to treat all compounds as single words.

#### 2.1.1.3.2 Types of repetitions

In view of the remarks in the introduction (1.2.2.2) about the fundamental importance of metrical positions, it should be clear that only such multiple occurrences of a group of words that are found at the same location in a line are counted as repetitions.

The very broad category of repetition is only a starting point; distinctions will be applied in the course of discussing the concrete material, using the following general categories of repetitions:[69]

- *Formulaic:* this (for our purposes) most important group of repetitions simply consists of groups of words that are regularly used by a large number of poets in a conventional way. For practical reasons these repetitions may also be defined in a negative way: as not belonging to either of the following categories.
- *Stylistic:* repetitions used for various stylistic purposes,[70] their common denominator being that they are an integral part of a consciously created literary structure.[71] Typically they do not ap-

68 E.g., they never straddle the main caesura, as longer compounds sometimes do.

69 The presented list is an attempt to practically apply Kiparsky's postulate: "It is necessary to distinguish theoretically between the *conventional* kind of repetition that marks the formula, and other, irrelevant kinds: accidental repetition, semantically and pragmatically motivated repetition (refrains, parallelism, allusion, and so on)" (1976, p. 83).

70 In his study on *Stylistic Repetitions in the Veda* (1959) Gonda works with more than a dozen categories.

71 Lord, commenting on the "differentiation between formula and repetition", claims that in oral poetry there are no stylistic and other repetitions, only such of the formulaic kind (1986, pp. 491–493, especially p. 493: "There is a different attitude toward repetition in an oral poetics, where repetition is tied to verse-making, not to semantic or contextual reference, or to 'aesthetics'"). This is rather surprising and highly implausible — why should "tied" automatically imply "exclusively tied"? Parry seems to be of a similar opinion but does not explicitly state that non-formulaic repetitions cannot appear in Homer (1930, pp. 81–84) .

pear too far from each other, which relates to their very nature because for the listener to appreciate a stylistic figure based on the correlation of more than one element he must have all the elements simultaneously in his memory.[72]

- *Short-range:* the short-range type is characterised by occurring only in one comparatively small passage of text, without properly belonging to the stylistic group. This phenomenon can most easily be explained by the natural tendency of an author to use a satisfying solution for a second time rather than creating a new one.[73]
- *Redactional:* One must take into account the possibility that a redactor (not an author) took some piece of text from one passage and inserted it in a copy-and-paste manner somewhere else. (But this is rather a theoretical distinction because in practice this type is difficult to distinguish from the formulaic one.)
- *Accidental:* Some low-frequency repetitions are most probably merely statistical effects caused by the accidental juxtaposition of very frequent elements.

It goes without saying that the differences between these categories are not always completely sharp when dealing with concrete examples, but they should be sufficiently clear to provide the following analysis of the material with a kind of blueprint.

#### 2.1.1.4 Formulaic structures

The cover term "formulaic structures" will be used to refer to all kinds of elements of formulaic diction that cannot adequately be described at the level of surface structure (though surface structure elements may well be involved). The different formulaic structures distinguished in

72 A reader has a greater tolerance in this respect because he can return to a passage already read. But even Hiltebeitel, the staunch advocate of a written origin for the *Mbh*, assumes that this text was "written for oral dissemination", so addressed to listeners in the first place (2000, p. 168).

73 This phenomenon has been well expressed by Hainsworth who observed several clusters of this kind in the *Iliad*: "[A]n expression, once having come to the surface of the mind and been used, tends to remain there for some time and be used again before it sinks into oblivion" (1976, p. 86).

this work will be discussed and exemplified in section 3. They are not the product of a theory-driven search program but of a pragmatic approach that aims at identifying as many structures as possible. Of course one can never be sure to have found all of them, so the set of formulaic structures must be considered an open one.

### 2.1.2 Strategy

The strategy realised in the following sections is aimed at allowing for an overview and a classification of the main types of formulaic elements. In order to achieve that goal as effectively and objectively as possible, the steps of the procedure are designed in such a way that first a selection of the material is done by the computer before manual analysis takes over; in this way, according to the methodological rule formulated above (p. 14), quantitative features and their interpretation are kept separate as far as possible. Repetitions are at first treated in a largely descriptive manner, looking at their length, frequency, mutual distance, and other quantitative features. On the basis of the material thus gathered a typology of formulaic elements is developed. In the next step formulaic structures below the surface of the text are looked for.

The general direction is from big to small, i.e., in the following analysis repetitions are taken up in groups of decreasing length (in terms of the number of words), starting with full ślokas, over hemistichs and pādas — the unit that is at the core of formulaic language in the *Mbh* — and ending with elements of sub-pāda length.

At each step the question arises as to which of the computationally selected elements should enter into the stage of manual analysis because as a rule the number of elements exceeds the quantity a scholar can handle in the traditional way. Practically, all elements below a certain frequency threshold have to be ignored, the threshold each time being a compromise between human resources and the wish to be comprehensive. Naturally many details will be lost in such a way, but it is hoped that the main categories and structures become more clearly visible than hitherto, thus paving the way for future, more detailed analyses.

It must be admitted that such a method heavily under-represents less frequent elements. This is unfortunate because in principle there is no lower limit under which an element can be said to be certainly non-formulaic. Because formularity ultimately is based not on texts but on

their language, it is always conceivable that an element that occurs only once in the text corpus at our disposal is nevertheless a formulaic element of the language and might have occurred in other, lost texts (see PARRY 1930, p. 122). But this line of thought should not be misused to declare *a priori*, as it were, that all of the text in question consists of formulaic elements. As Kiparsky (1976, p. 94) rightly remarks, in newly discovered additional Homeric epics, for example, there may be parallels for unique expression in our *Iliad* but there will also be new unique expressions and there is no reason to believe that this turning up of new phrases would at some point stop.

A little different is an argument devised by Smith (1999, p. 275): he declares several lines in the *Pābūjī* epic which occur only once in a text performed by a certain bard to be formulaic as they occur in the same form every time this (quite unusual) idea is expressed by the same bard. Now, let us suppose it is really the expression of one bard only and it is not used by others: in this case one cannot regard it as a formulaic element of the language as such, only as an element of a, so to speak, formulaic idiolect — though, of course, it may enter the language if other bards hear it and pick it up.

But these are rather theoretical questions in the context of *Mbh* studies. The sheer amount of material is so big that there is no way to comprehensively deal with unique expressions.

At this point a few remarks are in order concerning the question of "formulaic density". Since Parry's first attempt to assess the share of formulaic material in a passage of the *Iliad* (1930, pp. 117–134) many attempts of a similar kind have been made with regard to different texts, including the *Mbh* and the *Rm*.[74] The usefulness of such measurements is, however, rather small, especially in a comparative context, because both the lack of standardised criteria for formularity and differences between the texts concerned make it very difficult to interpret statements like "the work contains 74% of formulaic material". Therefore general statistics of this kind will not be given in the present study.

The strategy to proceed from longer to shorter elements involves a certain difficulty that shall be explained in general terms. Let us say we have a large element *AB* (e.g., a half-śloka) that can be seen as a combi-

74 See BROCKINGTON 1970, pp. 210–211, and GRINCER 1974, ch. 3.

nation of the shorter elements *A* and *B* (two pādas, in our example). Looking at the frequencies of these three elements, we may, in principle, encounter four scenarios which are exemplified in the first three rows of the following table (T16):

**T16.** Explanation of affinity

| Freq. / Aff. | Frequency | | | |
|---|---|---|---|---|
| | Case I | Case II | Case III | Case IV |
| Freq. *A* | 20 | 100 | 20 | 100 |
| Freq. *B* | 20 | 20 | 100 | 100 |
| Freq. *AB* | 20 | 20 | 20 | 20 |
| Aff. $A \rightarrow B$ | 1 | 0.2 | 1 | 0.2 |
| Aff. $B \rightarrow A$ | 1 | 1 | 0.2 | 0.2 |

Now the question arises of how to treat the shorter elements in each of the four cases. It should be intuitively clear that in case I there is no point in regarding *A* and *B* as elements of the epic formulaic language at all because they are only virtual entities, the real element being *AB*. But how to proceed in less clear cases and how to formalise such decisions? One possible solution consists in calculating what will be called the "affinity value" of one subelement of a larger element towards the other subelement.[75] Using our example, this is done in following way. In order to obtain the affinity value *a* of *A* to *B* ($a_{A \rightarrow B}$) the frequency of the large element *AB* ($z_{AB}$) is divided by the overall frequency of *A* ($z_A$) according to this formula:

**Form. 3.** Affinity value

$$a_{A \rightarrow B} = \frac{z_{AB}}{z_A}$$

The single values for the four cases in the present example can be seen in the bottom two rows of T16. Here it is quite clear that subele-

75 Statistically speaking, this is a question of conditional probability. In his analyses of Homeric formulas Hainsworth introduced the similar concept of "mutual expectancy" (1968, p. 36) but without giving it a quantitative interpretation.

ments should be discarded when they feature an affinity value of 1, and should be treated as individual elements when this value is 0.2. So far, so good; but in practice the situation is not always so clear. First, it must be admitted that such calculations are only useful in cases with a sufficient overall frequency — but then, infrequent elements are often ignored anyway. Secondly, and more importantly, there is no obvious affinity value under which an element should be treated as an independent item in the epic formulaic language; in addition, the absolute frequency of an element, its syllable length and the number of words involved must also be taken into account. Because even if it has a strong affinity to another element (which is a relative measure), a very high absolute number of occurrences outside of this combination (or a not so high number, but of a long element) warrants a certain independent status. Therefore we must decide on combined affinity-frequency thresholds for each group of element and so are in a similar situation as in the case of pure frequencies. The general policy can only be to analyse as many elements as practicable; details will be discussed in the appropriate places. It should also be mentioned that there is a cognate problem with long elements that will be discussed in section 2.3.1.

Though the main aim of this study is to find and discuss frequently recurring elements and patterns it is a useful by-product that in the course of such investigations often single items can often be identified that behave exceptionally within a background of certain regularities. Such cases will not as a rule be discussed, but are at least noted in order to allow their use in future studies.

## 2.2 Full ślokas

The longest kind of repetition we will deal with are full *anuṣṭubh* double verses ("ślokas"). $156_{368}$ ślokas appear more than once;[76] the distribution of frequencies is as follows:

76 One of these repetitions is actually two ślokas long; it occurs six times between 14,030.007–008 and 14,030.022–023. — Here and in the following statistics of this kind only exact identity is taken into account. Experiments have also been made with methods allowing for small differences between the strings (so-called "fuzzy matching"). Generally this led (of course) to larger data collections, which were, however, more difficult to work with because of their greater variety; anyhow, they did not yield very different pictures.

**T17.** Type and token frequencies of śloka repetitions

| Frequency | | Frequency | |
|---|---|---|---|
| Types | Tokens | Types | Tokens |
| 1 | 16 | 4 | 4 |
| 1 | 14 | 8 | 3 |
| 2 | 6 | 14 | 2 |

First let us have a look at how the single occurrences are distributed over the text. The most frequently repeated ślokas (i.e., those with a frequency ≥ 6) are all highly localised, i.e., are restricted to a small area of text. Reading the passages, one immediately notices that they have the function of refrains, so clearly belong to the category of stylistic repetitions. Consequently, they should not be regarded as elements of the epic formulaic language, but as parts of a concrete literary creation, namely the passage they belong to. Let us briefly consider the two main examples of this type:

**Q3** 16x between 12,029.021 and 12,029.136
*sa cen mamāra sṛñjaya caturbhadrataras tvayā /*
*putrāt puṇyataraś caiva mā putram anutapyathāḥ //*

"Sṛñjaya, if he died, he who was four times more blessed than you and more meritorious than your son, then you should not grieve for your son" (tr. Fitzgerald).

Kṛṣṇa tries to console Yudhiṣṭhira, who grieves about the heroes slain in the war, by relating Nārada's consolation offered to king Sṛñjaya on the occasion of the death of his son; it basically consists in enumerating great kings of old who nevertheless died and the verse quoted appears after each example given.

**Q4** 14x between 02,054.007 and 02,058.028
*etac chrutvā vyavasito nikṛtiṃ samupāśritaḥ /*
*jitam ity eva śakunir yudhiṣṭhiram abhāṣata //*

"At these words Śakuni decided, tricked, and cried 'Won!' at Yudhiṣṭhira" (tr. van Buitenen).

This refrain-like verse marks each round of the fatal dicing game. It is therefore part of a literary structure that lies at the very heart of the *Mbh* plot.

However, as can be seen in T17, whole verses rarely appear more often than twice; meaning most of the repeated ślokas belong to doublets, therefore these deserve a closer look. In order to obtain an overview for the distribution of doublets it is helpful to visualise them with the help of a diagram that is, as it were, a 2D-version of Fig. 4, where occurrences are marked parallel to the x-axis and, in addition, the y-axis is also marked by figures from 1–149,400 symbolising the lines of the *Mbh*. Thanks to this arrangement the two running line numbers marking the occurrences of a doublet may directly function as coordinates. Consequently, every small black dot in the following diagram Fig. 5 represents one doublet, whose two positions in the text can be checked on the two axes. Actually, the diagram is somewhat redundant because every doublet is represented by *two* dots being placed at the coordinates *(a, b)* and *(b, a)*. Using only the first set of coordinates, one could fit half of the dots in a triangle on one side of the diagonal line of symmetry running through the origin of the axes and this would be sufficient; but the addition of the second set of dots makes the graph more comfortable to read.

Three observations can literally be made at first glance:

- Most verse pairs are separated by only a comparatively small number of verses. This is even more visible on a barplot (Fig. 6), where every bar represents the distance between the members of a verse pair, represented by closeness to the line of symmetry. The mean of the distances is 25,149; the median 6,290.
- There are some clusters of doublets, especially in Books V and XII.
- In some cases the dots are located almost in a line, giving a streak-like arrangement.

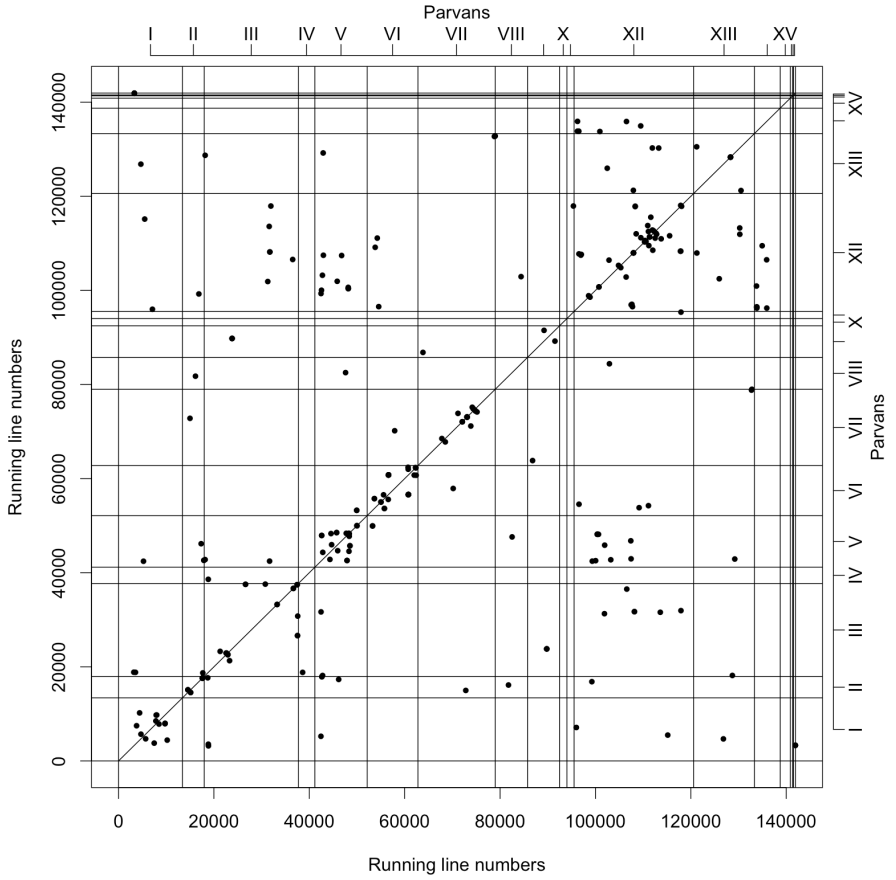


**Fig. 5.** Distribution of śloka doublets

Before we try to interpret these findings it will be helpful to add other, content-related information to the preceding graph. Among the doublets two main groups may be distinguished though the difference is not always clear: verses belonging to a particular passage of the *Mbh* in a primary way, and verses that have a more general character. As example of the first group may be adduced one part of a message sent by Duryodhana to Yudhiṣṭhira via the messenger Ulūka. (In the first occurrence it is uttered by Duryodhana, in the second one Ulūka repeats his master's words verbatim to Yudhiṣṭhira.) The references to the exile and to Draupadī link it closely to the *Mbh*; what is more, due to its quite specific meaning and intention it only fits in the actual situation where it occurs.

**Q5** 05,157.006 = 05,158.009
*amarṣaṃ rājyaharaṇaṃ vanavāsaṃ ca pāṇḍava /*
*draupadyāś ca parikleśaṃ saṃsmaran puruṣo bhava //*

"Be a man! Remember your rage, the rape of your kingdom, your exile in the forest, the molestation of Draupadī, Pāṇḍava!" (tr. van Buitenen).

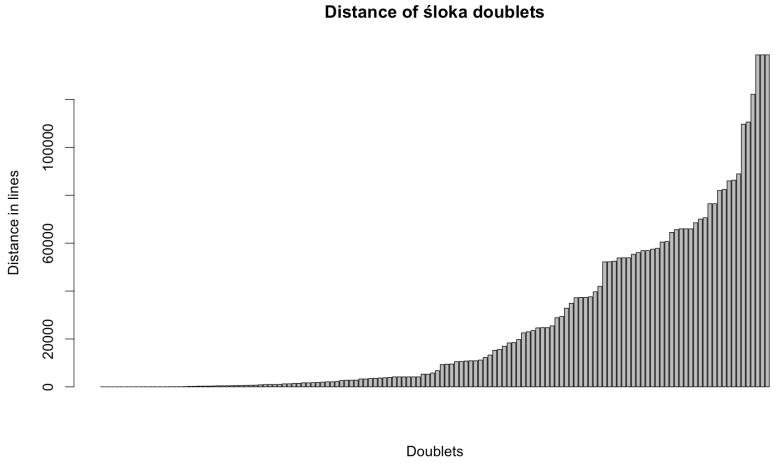


**Fig. 6.** Distances of śloka doublets

The verses of the second group consist of gnomic verses and *śāstric* material of a different kind; two examples may suffice to give an impression:

**Q6** 05,038.030 = 12,168.021
*na buddhir dhanalābhāya na jāḍyam asamṛddhaye /*
*lokaparyāyavṛttāntaṃ prājño jānāti netaraḥ //*

"Cleverness does not always lead to gain nor stupidity to poverty; the sage and no one else knows the turns that affairs take in the world" (tr. van Buitenen).

**Q7** 13,007.003 = 13,117.036
*yena yena śarīreṇa yad yat karma karoti yaḥ /*
*tena tena śarīreṇa tat tat phalam upāśnute //*

"With the same body that someone uses to do his deeds he will receive the fruit for every one of them."

In the following diagram (Fig. 7), the verses that were manually classified as *Mbh*-specific are represented as crosses, the general ones as dots. One can immediately see that most "Mahābhāratan" verse pairs are rather close to each other, whereas the general ones tend to be separated by larger stretches of text. As an overall picture, this surely is to be expected. The former type of doublets are similar to refrains insofar as they are probably coinages that fit a specific context, and it is easily understandable that the author of a longer passage should be tempted to "reuse" a well-created verse in a later part of his text (which means still being in comparatively close vicinity from the perspective of the whole epic). In contrast, gnomic and similar verses, which belong to a common pool of wisdom literature,[77] may be used by different authors, so they are likely to appear in different parts of the *Mbh*. At the same time, there is nothing strange about the fact that a certain number of non-specific verse pairs, especially in thematically cognate contexts of the *Śāntiparvan,* are also located close to each other.

There are two further interesting details that may be gathered from the data. Firstly, the existence of a kind of "gnomic hub" can be noticed: Vidura's advice to Dhṛtarāṣṭra during the latter's vigil. Here, in a span of 350 verses no less than 14 wisdom ślokas occur that can also be found in other parts of the epic, as shown in appendix A4.[78]

77 For a collection and discussion of these verses cf. HOPKINS 1899, KANE 1939, and BROCKINGTON 1979. It must be admitted that the hypothesis of a "common pool" is only a plausible assumption. Theoretically in each case the gnomic sentence may have been coined by the author of one particular passage and later copied by the authors of other texts.

78 Presenting the list of doublets in this way does not mean to imply that the Vidura passage necessarily is the intratextual source of the other passages. Brockington views "very late eclectic borrowing from throughout the *Mahābhārata*" in the whole *Prajāgaraparvan* (1998b, p. 145).

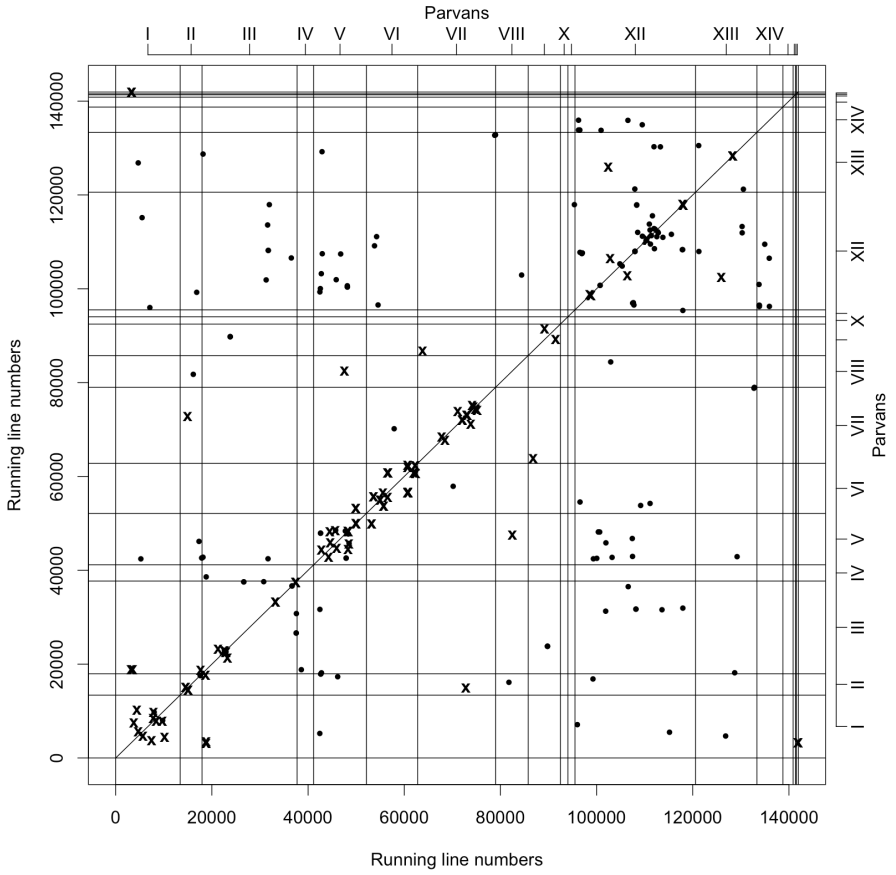


**Fig. 7.** Distribution of classified śloka doublets

Secondly, it may be worthwhile to have a brief look at a different set of phenomena: some untypically distant pairs of *Mbh*-specific ślokas.

The first verse expounds the invincibility of Arjuna:

**Q8** 05,122.056 = 08,031.061
*bāhubhyām uddhared bhūmiṃ dahet kruddha imāḥ prajāḥ /*
*pātayet tridivād devān yo 'rjunaṃ samare jayet //*

"With his arms he could pull out the earth, in anger burn these creatures, hurl the Gods from their heaven, the man who can defeat Arjuna in battle!" (tr. van Buitenen).

Superficially, it has the same meaning in both of its occurrences; but not quite, because in the *Udyogaparvan* it is part of the good advice given by Kṛṣṇa to Dhṛtarāṣṭra (namely, not to start the war); whereas in the second instance Śalya extols Arjuna's virtues as a warrior to Karṇa in an unfriendly, provocative speech. Doublets of such a kind[79] are certainly of particular interest for scholars concerned with the internal structure of the *Mbh* and its genesis, but should probably not be considered stereotyped and so will not be discussed in more detail here.

This is also true for the following group of four doublets that nevertheless warrant a separate mention because they probably are part of a literary structure, consciously created by an author or redactor: a ring composition of gigantic dimensions. (Alternatively, they would have to be regarded as a redactorial repetition of a mechanical and thoughtless type.) The verses in question appear close to the beginning and close to the end of the whole epic:[80]

**Q9** 01,056.026 = 18,005.034
*kīrtiṃ prathayatā loke pāṇḍavānāṃ mahātmanām /*
*anyeṣāṃ kṣatriyāṇāṃ ca bhūridraviṇatejasām //*

"... while he [= Vyāsa] spread in the world the fame of the great-spirited Pāṇḍavas and of the other barons who were rich in possessions as well as heat" (tr. van Buitenen).

**Q10** 01,056.027 = 18,005.052
*yathā samudro bhagavān yathā ca himavān giriḥ /*
*khyātāv ubhau ratnanidhī tathā bhāratam ucyate //*

"Just as our lord the ocean and Mount Himālaya are both famous treasuries of jewels, so, they say, is *The Bhārata*" (tr. van Buitenen).

79 One more example is provided by a śloka doublet that occurs in the context two different fights belonging to different parts of the epic; the first one takes place between Jarāsaṃdha and Bhīmasena (02,021.016), the second one between Bhūriśravas and Sātyaki (07,117.038): *vyūḍhoraskau dīrghabhujau niyuddhakuśalāv ubhau / bāhubhiḥ samasajjetām āyasaiḥ parighair iva //*

80 The verses in I 56 were probably even closer to the beginning at an earlier stage of development: cf. BROCKINGTON 1998a, pp. 135–136.

**Q11** 01,056.033 = 18,005.038
*dharme cārthe ca kāme ca mokṣe ca bharatarṣabha /*
*yad ihāsti tad anyatra yan nehāsti na tat kva cit //*

"Bull among Bhāratas, whatever is here, on Law, on Profit, on Pleasure, and on Salvation, that is found elsewhere. But what is not here is nowhere else" (tr. van Buitenen).

**Q12** 01,001.191c–f = 18,005.045a–d
*bhāratādhyayanāt puṇyād api pādam adhīyataḥ /*
*śraddadhānasya pūyante sarvapāpāny aśeṣataḥ //*

"They who learn even a quarter couplet of the holy study of the Bhārata, and have faith in it, will be purified of all their sins" (tr. van Buitenen).

Apart from repetitions of whole ślokas one can also find 3-pāda repetitions, specifically: 298 3-pāda multiplets with, in total, 614 occurrences (mostly with pādas *abc* or *bcd* being repeated, though the other possibilities do also occur). But these should not be treated as a separate type of repetition, being in most cases variations of repeated full ślokas, because for a large number of the examples the difference between full śloka repetitions and 3-pāda repetitions ultimately depends on decisions by the editors of the *CE*.[81] Looking at the critical apparatus, it can be noticed that for nearly all full śloka multiplets there are variant readings that, if incorporated into the main text, would result in multiplets of the 3-pāda type, and vice versa.

## 2.3 Hemistichs

The next group of repetitions that will be dealt with are hemistichs. Repeated *ardha*-ślokas that are always or mostly part of repetitions of full ślokas (specifically, that feature an affinity of more than 0.5 towards the following or preceding pāda) are not included here. There are also quite a few cases where they are parts of ślokas whose other line is more or

81 There are also repetitions of three-pāda length that may be regarded as extended versions of repeated hemistichs, which will be the topic of the next section.

less similar, without being identical, but these unclear cases were not removed. The group to be discussed is sizeable: 1,246 repeated hemistichs with 2,871 occurrences. Most repeated hemistichs are of low frequency (the main exception being a well-known introduction that will be discussed in more detail below, p. 79), as can be seen from this table:

**T18.** Token and type frequencies of hemistich repetitions

| Frequency | | Frequency | |
|---|---|---|---|
| Tokens | Types | Tokens | Types |
| 110 | 1 | 6 | 5 |
| 20 | 1 | 5 | 10 |
| 11 | 1 | 4 | 32 |
| 10 | 1 | 3 | 93 |
| 8 | 1 | 2 | 1,097 |
| 7 | 3 | | |

A major difference to the full śloka repetitions lies in the fact that many repeated hemistichs are syntactically incomplete. Only in about half of the cases does an *ardha*-śloka repetition make up a complete sentence, but even then it often forms a larger unit with the other hemistich of the śloka, as in the following example:

**Q13** 07,039.011 (first line occurs 6 times)
*sa gāḍhaviddho vyathito rathopastha upāviśat* /
*duḥśāsano mahārāja kaśmalaṃ cāviśan mahat* //

"Hit to the quick, O Great King, Duḥśāsana reeled and collapsed in his chariot, entering great darkness."

In the other half of cases the hemistich is not a complete sentence and is therefore closely linked to the rest of the śloka that functions as a necessary supplement, like in this three-liner:

**Q14** 09,064.002 (underlined hemistich occurs 7 times)
*vinirbhinnāḥ śitair bāṇair gadā-tomara-śaktibhiḥ* /
*aśvatthāmā kṛpaś caiva kṛtavarmā ca sātvataḥ* /
*tvaritā javanair aśvair āyodhanam upāgaman* //

> "Aśvatthāman, Kṛpa, and Kṛtavarman the Sātvata all hastily returned to the battlefield on their swift horses, even though they were wounded by sharp arrows, maces, lances and spears." (09,065.002 CSL, tr. Meiland, mod.)

As a kind of measure of the flexibility of a hemistich one can regard the question of whether or not the repetition always occurs in the same half of a śloka (i.e., in pādas *ab* or *cd*, exceptionally *ef*, respectively). In about one fifth of the doublets this is not the case, so that an alternation between *ab* and *cd (ef)* is observed, as in the following verse where the second line appeared as the first line in Q13.

**Q15** 06,090.033
*saptamena ca bhallena nīlaṃ vivyādha vakṣasi /*
*sa gāḍhaviddho vyathito rathopastha upāviśat //*

> "And with the seventh arrow [Aśvatthāman] hit Nīla in the chest. Hit to the quick, he reeled and collapsed in his chariot."

Coming now to the question of distribution, it can be observed that just as in the case of full ślokas, some half-ślokas are highly localised and the more frequent among them may often be classified as refrains, like the following hemistich which is part of a religious hymn:

**Q16** 20x in the 20 verses 05,045.001–05,045.021
*yoginas taṃ prapaśyanti bhagavantaṃ sanātanam*

> "The yogins behold the sempiternal blessed Lord" (tr. van Buitenen).

Differences between repeated verses and hemistichs also become visible when looking at a general distribution plot of line doublets (see Fig. 8). Because the number of doublets is much higher here, a lighter grey tone has been chosen for the dots, so that dots very close to each other may overlap, producing a darker colour.

In order to visualise the distribution of distances, a barplot of the same type as Fig. 6 has also been prepared (Fig. 9). The mean of the distances is 20,980 lines; the median only 4,430 lines.

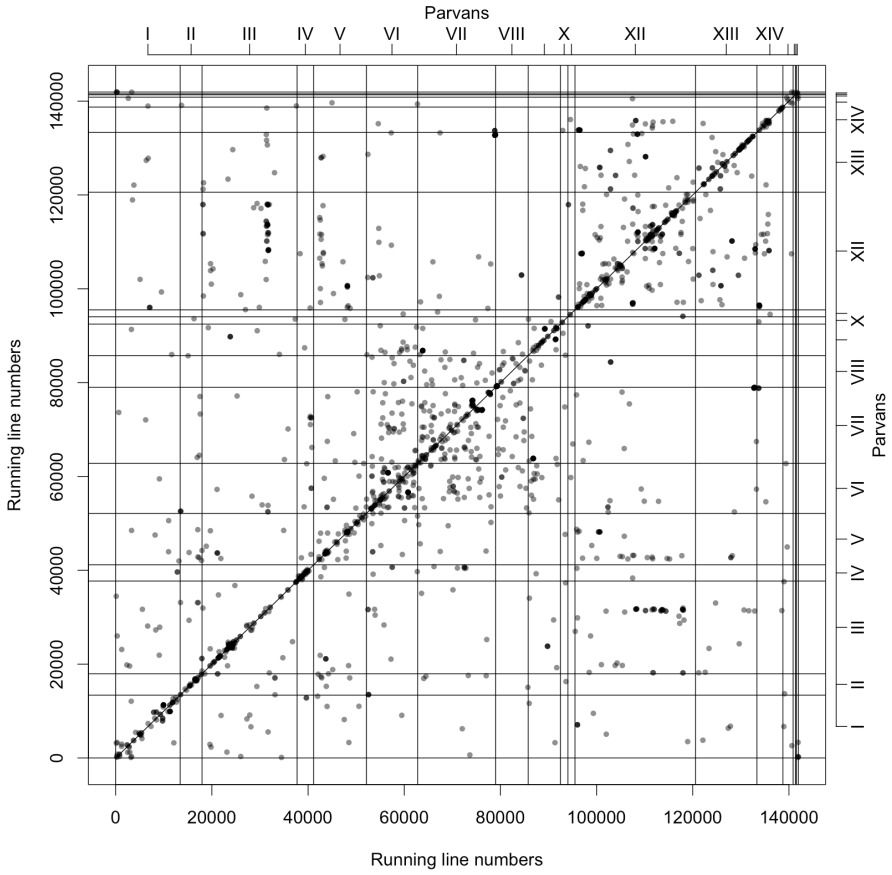


**Fig. 8.** Distribution of hemistich doublets

Though not in the main line of the present study, several observations that promise to be of high interest for questions of a structural analysis of the text and potentially also for text-historical ones will be briefly highlighted, just as in the preceding section. In some respects the diagram is similar to the previous one. The bulk of observations consists of close doublets which are located along the main diagonal. There are also some streak-like groups, to which we will return shortly. But much more numerous are the middle-range pairs, so to speak, that appear inside of certain Books or groups of Books in such large numbers that the resulting structures are readily visible even on the macro scale of the graph under discussion. First of all, Book VI is striking as particularly densely populated by "internal" doublets (to coin a term), but it can also be re-

garded as part of a larger group consisting of the Battle Books proper, i.e., Books VI–VIII and the first portion of Book IX. Also Book XII shows a quite high density of internal doublets, and similarly as in the above case, it is part of a larger group, here comprising Books XII, XIII, and the beginning of Book XIV.

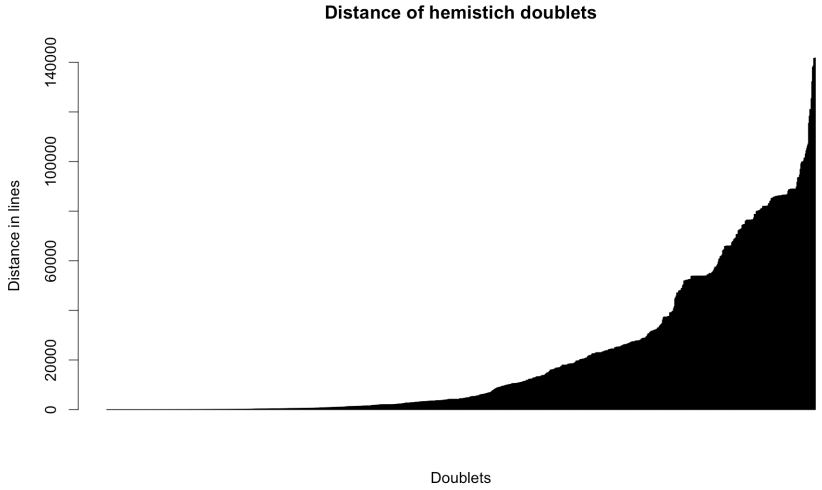


**Fig. 9.** Distances of hemistich doublets

For the single books, the figures of internal doublets in absolute numbers and as percentages of all lines are as follows:

**T19.** Internal doublets per *parvan*

| Book | Int. doubl. | Perc. | Book | Int. doubl. | Perc. |
|---|---|---|---|---|---|
| I | 49 | 0.366 | X | 1 | 0.064 |
| II | 14 | 0.307 | XI | 1 | 0.067 |
| III | 57 | 0.289 | XII | 156 | 0.622 |
| IV | 15 | 0.433 | XIII | 47 | 0.369 |
| V | 40 | 0.365 | XIV | 16 | 0.296 |
| VI | 76 | 0.713 | XV | 2 | 0.095 |
| VII | 97 | 0.598 | XVI | 0 | 0.000 |
| VIII | 17 | 0.251 | XVII | 0 | 0.000 |
| IX | 22 | 0.328 | XVIII | 1 | 0.253 |

Returning to Fig. 8, streak-like structures appear as in the śloka diagram. In the previous section we have seen that this indicates a situation where a considerable number of elements in a comparatively short passage possess corresponding elements that are distributed over a larger part of the text. Pairs of corresponding elements (in the present case: identical lines) can be understood as establishing "links" between different parts of the texts, therefore such features can be explored and visualised quite effectively with the help of network analysis.

The relationships between a medium-sized number of elements can often be analysed and visualised as a network, and this increasingly popular approach has also been employed in this work. The basic procedure in such cases will therefore be briefly described. The elements in question are treated as the nodes of a graph, which are linked by some common property. Typically, some elements are connected more strongly with certain other elements (e.g., by a larger number or greater intensity of common properties), and may be only loosely connected, or sometimes not connected at all, with still others. In the present case the nodes represent MSTUs[82] (identifiable by their ID-number, see appendix A1). The edges symbolise the links between two MSTUs that are established by possessing a common pair of hemistichs; multiple edges (i.e., many common doublets) between the same MSTUs are "merged" to one edge whose thickness corresponds to the number of common pairs that connect two MSTUs. The size of the nodes and their labels corresponds to their so-called degree (i.e., to the number of edges they possess). The following graphs were produced with the "igraph" package in R (Csardi & Nepusz 2006) and visualised with the help of the popular program "Gephi", using the "Force Atlas" algorithm (see Bastian et al. 2009). The layout algorithm used to produce these graphs groups together MSTUs connected by strong ties by pushing MSTUs without, or with only weak links, away from each other. The graph contains numerous pieces of information that are of potential interest for a structural and genetic analysis of the *Mbh*, but this is not our topic — the reader is encouraged to download the network data at Sellmer 2015 and explore them at will. Here only a brief uncommented list of the MSTUs with the highest and lowest number of external links is given in T20.

82 Using whole *parvan*s as basic text parts for constructing a network would lead to very rough results.


**Fig. 10.** Network of MSTUs connected by line doublets

**T20.** MSTUs with most/least external links

| MSTU | Length | Number of ext. links | Percentage |
|---|---|---|---|
| Numerous external links | | | |
| 38 | 1,070 | 20 | 1.9 |
| 27 | 774 | 18 | 2.3 |
| 52 | 1,782 | 18 | 1.0 |
| 101 | 1,193 | 17 | 1.4 |
| 42 | 1,170 | 16 | 1.4 |
| Few external links | | | |
| 127 | 870 | 1 | < 0.01 |
| 128 | 1,891 | 1 | < 0.01 |
| 10 | 743 | 0 | 0.0 |
| 32 | 540 | 0 | 0.0 |

### 2.3.1 Types of hemistichs

Let us now return to our main topic: the classification of repetitions. Talking about hemistichs, the question has to be asked if a given line should be regarded as a fundamental element of the epic language at all; in order to give an answer one must have a closer look at its principal constituents, i.e., in most cases the two pādas making up the line.[83] The procedure is, in a certain sense, the reverse of the one explained in section 1.2.2.2. Fundamentally, there are three main possibilities, depending on the frequency of one or both pādas ($freq_P$) and the frequency of the hemistich ($freq_H$), which will be explained and exemplified in turn. The following table which combinations of these factors occur and where they will be discussed:

**T21.** Categories of repeated hemistichs

| Relation of frequencies | Rare hemist. | Frequent hemist. |
|---|---|---|
| $freq_P >> freq_H$ | see 2.3.1.1 | — |
| $freq_P \approx freq_H$ | see 2.3.1.2.1 | see 2.3.1.2.2 |

#### 2.3.1.1 Accidental hemistichs

In the first case, one or more of the principal constituents of a hemistich are themselves frequently and independently occurring elements of the epic language, whereas the line in question is to be found rarely, only two or three times. In such cases, the hemistich has a somewhat secondary status and should not be regarded as a fixed linguistic unit — in the terminology proposed on p. 56, one might classify such lines as "accidental repetitions". This situation can be observed in about 20% of repeated lines and is therefore quite common.[84] The following three doublets may serve as examples for lines with a frequent *a*-pāda, a frequent *b*-pāda, and frequent *a*- and *b*-pādas (frequencies in parentheses).

83 Hemistichs with variable elements of sub-pāda length (like *evam etan mahābāho yathā vadasi* – ⏑ ⏒) will be treated in section 3.3 below.

84 The exact percentage depends on the chosen frequency thresholds; e.g., there are 267 (or 21.4%) repeated hemistichs occurring 2–3 times where either of the pādas features a frequency ≥ 6.

**Q17** 06,109.011ab = 07,144.024ab
*athānyad dhanur ādāya* (49) *gautamo rathināṃ varaḥ* (2)

**Q18** 06,115.037cd = 09,058.018cd
*netrābhyām aśrupūrṇābhyām* (3) *idaṃ vacanam abravīt* (104)

**Q19** 03,175.003cd = 09,049.045cd
*etad icchāmy ahaṃ śrotuṃ* (33) *paraṃ kautūhalaṃ hi me* (19)

Looking at these lines, an experienced reader of the *Mbh* immediately notices — even without knowing any statistics — that what can be characterised as basic, stereotyped elements of the epic language are the four underlined pādas, not the whole hemistichs. The proper place to analyse the quoted lines and others like them is therefore in the next main section which will deal with repeated elements of pāda-length in some detail.

### 2.3.1.2 Hemistichs as primary elements

As a second group of repeated hemistichs one can single out such cases where both the *ardha*-śloka and its pādas have a similar frequency. However, there are two further subgroups depending on the overall frequency.

#### 2.3.1.2.1 Hemistichs and pādas equally rare

In the first subgroup, which is the most frequent combination, both hemistichs and their constituent pādas are equally rare. Defining rare line repetitions as cases of doublets where both pādas only occur in these very lines, 761 pairs of this kind (i.e., 61% of all hemistich repetitions) can be counted.

Hemistichs that occur only twice in a text as long as the *Mbh* and consist of equally rare pādas can only exceptionally be called stereotyped and regarded as a fixed part of the epic language,[85] but by the same token they are of potential interest for scholars dealing with the struc-

85 But see above p. 58. In such cases of very low frequency it is useful to have a look at the *Rm*, and a few parallels can indeed be found which are however all of the gnomic type(02,005.033ab = 15,009.014ab = *Rm* 2,094.021ab; 02,057.017cd = 05,037.014cd = *Rm* 6,010.016cd; 12,166.024ab = 12,263.011ab = *Rm* 4,033.012ab).

ture of the text. Especially in the case of such lines where the occurrence of exactly the same hemistich in distant passages of the epic is often is likely to be not merely coincidence, but rather the trace of a real connection between these passages. (The basis of this connection — for instance, identity of authorship, insertions by a redactor etc. — must be investigated in each case individually.) So it may be useful to insert a graph (see Fig. 11) showing the links between MSTUs established by doublets of the kind under discussion (which means that doublets where both instances occur *in the same* MSTU are ignored).

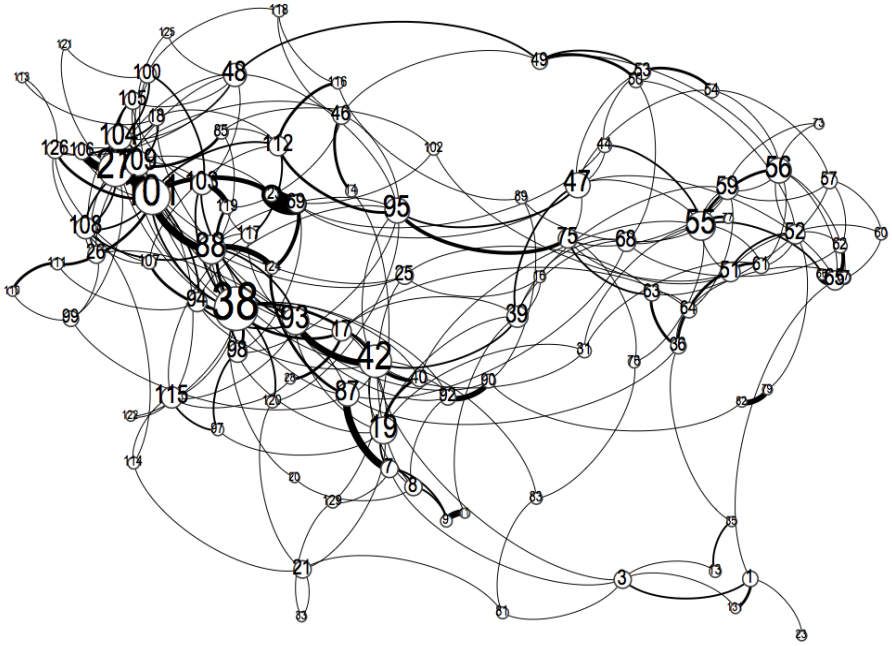


**Fig. 11.** Network of MSTUs connected by doublets of primary hemistichs

Once again, the network is only meant to visualise a few striking features; it is freely available for exploration at SELLMER 2015. Here, only one, perhaps interesting, negative result will be added: there are a few MSTUs without any external links, which therefore do not appear in the graph, namely nos. 10, 12, 32, 74, 84, and 127.

### 2.3.1.2.2 Hemistichs and pādas equally frequent

The second subgroup of repeated lines with similar[86] frequencies of line and pādas differs from the preceding one only by the higher frequency of its members; this distinction being based on the idea that longer repetitions which are not altogether rare (i.e., with a frequency > 3, though this threshold is a little arbitrary) can often be regarded as elements of the epic language. Only 23 hemistichs (with 239 occurrences) fall into this category, which despite its small size very clearly splits up once more into two groups: one whose members are highly localised and consists of refrains and functionally similar units; and another one with more widely distributed lines: A full list can be found in appendix A5, but here only a few examples will be briefly discussed.

For the first, localised type with $12_{76}$ members a refrain-like line may serve as an example that appears ten times in the gambling scene, which by its very narrative structure is extremely repetition-friendly (cf. Q4, p. 62). It is regularly used by Yudhiṣṭhira after enumerating different portions of his wealth he is willing to stake.

**Q20** 02,054.002ef etc. (10x)
*etad rājan dhanaṃ mahyaṃ tena dīvyāmy ahaṃ tvayā*

The second category in the present subgroup, the more widely distributed hemistichs, contains $11_{163}$ members. These *ardha*-ślokas are not without interest, but would have to be investigated on an individual basis. From the point of view of formulaic diction most of them are less important due to their small number and low frequency — albeit with one exception, namely the already mentioned well-known introduction to didactic and other stories:

86 Here, specifically, the rule was used that the frequency of neither pāda should exceed the frequency of the hemistich by more than 50%.

**Q21** *atrāpy udāharantīmam itihāsaṃ purātanam*

With a frequency of 110 it occurs much more often than all other *ardha*-śloka repetitions, which already makes it special.[87] But a really interesting feature of the hemistich in question emerges only after a detailed analysis of its elements. As with all hemistichs in the present section, the pādas that form them are not significantly more frequent than the whole line. But let us go one step further and have a look at the frequencies of the single heterotopes. Here also, we find that these smallest elements of the popular line, with the exception of [13]*purātanam*, rarely appear in other contexts.[88] This fact is a clear sign that the hemistich is not really "embedded" (so to speak) in the epic language. Though, generally, I refrain from textual-historical hypotheses in the present study, a probable explanation for this state of affairs is quite obvious: the authors-cum-redactors of the *Mbh* included many stories of different origin in their text, and the line just quoted is a convenient way to introduce such "old tales" — the very fact that it is not grounded in deeper layers of the epic language suggests that it was coined at a later stage, perhaps by people not "natively" conversant with this idiom. As earlier generations of poets did not need such a mechanism they did not invent a corresponding formula either; but if they would have invented it, it would likely be embedded more deeply.

To sum up, only hemistichs that are more than a (secondary or even accidental) product of the combination of frequent pādas can in principle be regarded as stable entities of the epic language, but generally only under the further condition that they appear more often than twice or thrice. Highly localised lines are as a rule stylistic repetitions and belong only to a specific passage. The remaining group of hemistichs is very small, which makes them rather unimportant as representatives of stereotyped and formalised elements of the epic language but at the same time especially interesting for investigations into the structure and creation process of the *Mbh* as a whole.

87 In addition, there are $9_{24}$ lines with variations in the first pāda. For a more detailed discussion of this group of introductions see TOKUNAGA 2009.

88 [13]*purātanam* occurs 24 times after words other than *itihāsaṃ*.

## 2.4 Pādas

As we have just seen, full ślokas and hemistichs play a minor role as fixed elements of the epic language as a whole, though some of them appear quite prominently as refrains and the like in specific passages. The analysis of hemistich repetitions also showed that they often appear on the basis of much more frequent repeats of pāda length. And indeed, the present section will show that in many respects the pāda can be considered the basic element of the epic formulaic language. This is quite natural because it is the fundamental metrical unit and in many cases also syntactically forms a whole.[89] (Repetitions with a length between pāda and *ardha*-śloka can be omitted in this analysis; they are rare and there does not seem to be any cases where one of them features as an independent element of the epic language. In most cases they are caused by variations in one pāda of a śloka repetition.)

First, some basic statistics will be given. Simply taking every pāda in the *CE* as a basis, we obtain the following figures:

**Pādas in general:**
number of types: 253,784
number of tokens: 283,876

Taking now only repeated pādas in the widest sense, i.e., those that occur at least twice, we get:

**Repeated pādas (frequency > 1):**
number of types: 15,877 (≈ 6.25% of all pādas)
number of tokens: 45,969 (≈ 16.19% of all tokens)

As explained in the introduction (p. 28), from a purely metrical point of view it is enough to distinguish between odd *(a, c, e)* and even *(b, d, f)* pādas, but as aspects of content and function will also be touched on in the present section a more detailed classification according to all four pāda types is in order. In Fig. 12 the numbers of types and tokens for

89 According to Hopkins, "The pāda is something complete in itself, a block to build with, to fit in beside other such blocks squared to it in advance" (1893, p. 143). But in fact this statement gives too static a picture, disregarding both the internal flexibility of pādas and the many types of connections between them.

pādas *a*–*d* are given. It can be seen that the numbers of repetitions (both in terms of types and tokens) are larger in even pādas, which is readily understandable in view of the more rigid metrical conditions there.

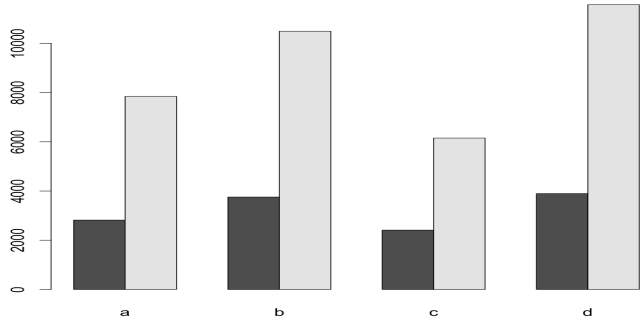


**Fig. 12.** Number of repeated pādas according to position in verse (dark: types; light: tokens)

In a further step, those repetitions that are entirely or predominantly elements of larger repetitions must be filtered out; i.e., in the present case, of repeated hemistichs or verses. This can once more be done most flexibly by checking affinity values towards the preceding (for even pādas) or the following pāda (for odd pādas), but in a slightly expanded form. An analysis of the relevant affinity values showed that quite often the pādas so checked have a rather high affinity not only to one neighbouring pāda, but to to two of them (rarely, even to three or four, but these cases do not have any statistical impact). Therefore it is helpful to introduce a "top-2 affinity value" being the sum of the highest and second highest affinity value of a pāda towards its right and left adjacent pādas.

Before a detailed analysis can be undertaken, one problem must be mentioned that additionally appears at the level of pādas. Whereas in the case of full ślokas, and also of most hemistichs, repetitions — even of the minimal, doublet type — are in most cases probably more than the work of pure coincidence, this is not so clear for pāda repetitions, especially for low-frequency ones. In the analyses of the present section this question can, however, be ignored because only repetitions with fre-

quencies > 10 will be considered, hence of a frequency that almost certainly excludes random combinations.

Pāda repetitions can be approached under two aspects that were already taken into account in the case of longer repetitions: degree of localisation and type of content; in addition, pādas often play a specific syntactic role and can therefore also be categorised on that basis. All of these aspects will be discussed in turn, but first a list of some common pāda repetitions will be given to help getting an impression of the material to be analysed.

The following lists contains for each of the four verse quarters the (up to) 16 most frequent pādas with a frequency > 10 and a top-2 affinity value of ≤ 0.2 with regard to the preceding (for even pādas) or following pāda (for odd pādas).

**T22.** Frequent pādas with low affinity values

*a*-pādas

| Pāda | Freq. | t2 aff. | Pāda | Freq. | t2 aff. |
|---|---|---|---|---|---|
| *etasminn eva kāle tu* | 51 | 0.039 | *tam āpatantaṃ saṃprekṣya* | 27 | 0.111 |
| *athānyad dhanur ādāya* | 47 | 0.085 | *tatrādbhutam apaśyāma* | 27 | 0.074 |
| *tasya tad vacanaṃ śrutvā* | 47 | 0.064 | *evam uktaḥ pratyuvāca* | 23 | 0.13 |
| *tato duryodhano rājā* | 47 | 0.085 | *tām āpatantīṃ sahasā* | 22 | 0.091 |
| *tato yudhiṣṭhiro rājā* | 46 | 0.065 | *tato gaccheta rājendra* | 22 | 0.182 |
| *etat te sarvam ākhyātaṃ* | 29 | 0.172 | *atra te vartayiṣyāmi* | 21 | 0.19 |
| *ete cānye ca bahavo* | 29 | 0.138 | *tato gaccheta dharmajña* | 20 | 0.10 |

*b*-pādas

| Pāda | Freq. | t2 aff. | Pāda | Freq. | t2 aff. |
|---|---|---|---|---|---|
| *dharmarājo yudhiṣṭhiraḥ* | 62 | 0.048 | *pāṇḍavānāṃ mahātmanām* | 20 | 0.15 |
| *śaraiḥ saṃnataparvabhiḥ* | 40 | 0.05 | *bhāradvājaḥ pratāpavān* | 18 | 0.167 |
| *bhīmaseno mahābalaḥ* | 39 | 0.077 | *pitā devavratas tava* | 18 | 0.167 |
| *kuntīputro yudhiṣṭhiraḥ* | 38 | 0.079 | *pāṇḍaveṣu mahātmasu* | 17 | 0.118 |
| *dharmaputro yudhiṣṭhiraḥ* | 25 | 0.08 | *śataśo 'tha sahasraśaḥ* | 17 | 0.118 |
| *dhṛṣṭadyumnaś ca pārṣataḥ* | 22 | 0.182 | *niyato niyatāśanaḥ* | 16 | 0.125 |
| *kuntīputro dhanaṃjayaḥ* | 21 | 0.095 | *pāṇḍavānāṃ mahārathāḥ* | 16 | 0.125 |

| *c*-pādas | | | | | |
|---|---|---|---|---|---|
| Pāda | Freq. | t2 aff. | Pāda | Freq. | t2 aff. |
| *nakulaḥ sahadevaś ca* | 28 | 0.143 | *prāhiṇon mṛtyulokāya* | 12 | 0.167 |
| *duryodhano mahārāja* | 18 | 0.111 | *vindānuvindāv āvantyau* | 11 | 0.182 |
| *etad icchāmy ahaṃ śrotuṃ* | 18 | 0.167 | *nanāda balavan nādaṃ* | 10 | 0.100 |
| *abhidudrāva vegena* | 17 | 0.118 | *pāṇḍavānāṃ kurūṇāṃ ca* | 10 | 0.100 |
| *mahatā śaravarṣeṇa* | 14 | 0.143 | *preṣayām āsa samare* | 10 | 0.100 |
| *kurūṇāṃ pāṇḍavānāṃ ca* | 13 | 0.154 | *ājaghānorasi kruddho* | 9 | 0.100 |
| *mahatā rathavaṃśena* | 12 | 0.167 | *kṣurapreṇa sutīkṣṇena* | 9 | 0.100 |

| *d*-pādas | | | | | |
|---|---|---|---|---|---|
| Pāda | Freq. | t2 aff. | Pāda | Freq. | t2 aff. |
| *idaṃ vacanam abravīt* | 93 | 0.043 | *tenāsi hariṇaḥ kṛśaḥ* | 29 | 0.069 |
| *śataśo 'tha sahasraśaḥ* | 76 | 0.039 | *śaraiḥ saṃnataparvabhiḥ* | 29 | 0.172 |
| *tad adbhutam ivābhavat* | 73 | 0.041 | *dharmarājo yudhiṣṭhiraḥ* | 25 | 0.08 |
| *tan me brūhi pitāmaha* | 73 | 0.041 | *tatraivāntaradhīyata* | 25 | 0.08 |
| *tan mamācakṣva saṃjaya* | 43 | 0.047 | *tiṣṭha tiṣṭheti cābravīt* | 25 | 0.12 |
| *te narāḥ svargagāminaḥ* | 38 | 0.079 | *yas te harati puṣkaram* | 25 | 0.08 |
| *satyam etad bravīmi te* | 35 | 0.057 | *sarvapāpaiḥ pramucyate* | 24 | 0.125 |
| *durgāṇy atitaranti te* | 29 | 0.069 | *te vai nirayagāminaḥ* | 22 | 0.091 |

### 2.4.1 Distribution of pāda repetitions

For a rough overview of the distribution of pāda repetitions in the *Mbh* a density plot seems to be the right choice. In order to select the most independent and common cases, only the $115_{2509}$ multiplets with a frequency > 10 and a top-2 affinity of < 20% were taken as the basis of the following graph (for the full list see appendix A6).

The first thing that strikes the eye is the highly uneven distribution of repeated pādas. It can be clearly seen that pāda multiplets are particularly frequent in Book VI and the Battle Books in general, with a surprising low at the beginning of Book VII. In addition, it can be noticed that there is a peak in Book III and three further ones in the *Śāntiparvan*.

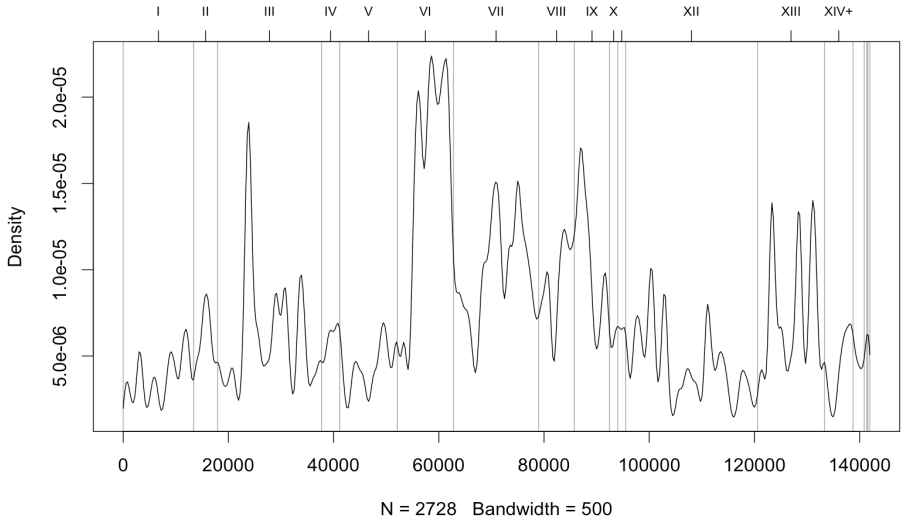


**Fig. 13.** Distribution of pāda multiplets with freq. > 10 and top-2 aff. < 0.2.

In order to understand how the distribution of individual repetitions produces such pictures the analysis must enter into greater detail. After a first inspection, it seemed practical to divide pāda repetitions into three main types: (1) a *local* type that is highly localised; (2) a *regional* type that appears exclusively or predominantly over a middle-range stretch of text, typically a few *parvan*s; and (3) a *global* type that is more or less evenly distributed over the whole epic. The most frequent pādas of the respective groups and their distribution are shown on the three diagrams Fig. 14, Fig. 15, and Fig. 16.

#### 2.4.1.1 Local repetitions

Local pāda repetitions appear exclusively, or almost exclusively, in very small parts of the text, so that up to 20–30 repetitions can be found in a few dozen or a few hundred verses. The median distance between occurrences may be as small as 2 lines and as a rule does not exceed 100 lines; occasionally single occurrences in distant parts of the text can be found. The distribution diagram Fig. 14 lists 15 repetitions of this type on the left axis; every line where one instance of the repetitions appears is re-

presented by a thin vertical stroke, so that many occurrences in a short stretch of text combine to give the impression of one thick stroke.

Repetitions of this type are far from being ubiquitous. They can be found in particularly high numbers in Book III 80–83, i.e., at beginning of the *Tīrthayātrāparvan*, in Nārada's description of the fords. This is also the explanation for the first peak in Fig. 13. In addition, we have a couple of other localised repetitions in Books XII and XIII, whereas in the rest of the text they are very rare or even completely absent.

#### 2.4.1.2 Regional repetitions

Regional repetitions are situated between local and global ones, therefore it is difficult to define them precisely; especially as for repetitions of lower frequency the difference between regional and global repetitions tends to become blurred. Diagram Fig. 15 shows some rather clear examples of the regional type.

The distributions of these repetitions are representative in the sense that regional repetitions tend to be restricted to one of three major textual regions: from the beginning up to the Battle Books, the Battle Books, after the Battle Books till the end. Of these, the Battle Books have the greatest share of regional repetitions, namely more than two thirds among the ones with a frequency > 10. This explains in a natural way the high density of repetitions in this textual region that was previously mentioned in connection with Fig. 13. The number of different repetitions in the other two regions is similar to each other, but the total number of occurrences is about twice as high in Books XII–XVIII than in Books I–V.

#### 2.4.1.3 Global repetitions

Because many of the regional repetitions sometimes also occur outside of their "home" regions, the distinction between these cases and global repetitions is not a sharp one, but more often than not the classification of a repetition can be established in an uncontroversial way. A good method consists in measuring the inequality of distribution over the three major text regions. This can be done by first expressing the share of the occurrences in the single regions in weighted percentages (because of the unequal length of the regions) and then using the percentage figures

to calculate a Gini index according to Form. 1. In this manner values are obtained between 1.0 in the case of maximal inequality, when all occurrences are in one region, and near zero, when a pāda is almost evenly distributed over all the regions. The distribution plot Fig. 16 contains the 15 most equally distributed pāda repetitions with a frequency > 10. The inequality of distribution over regions increases from top to bottom (inequality value of *dharmarājaṃ yudhiṣṭhiram*: 0.1, of *pravadanti manīṣiṇaḥ*: 0.26).

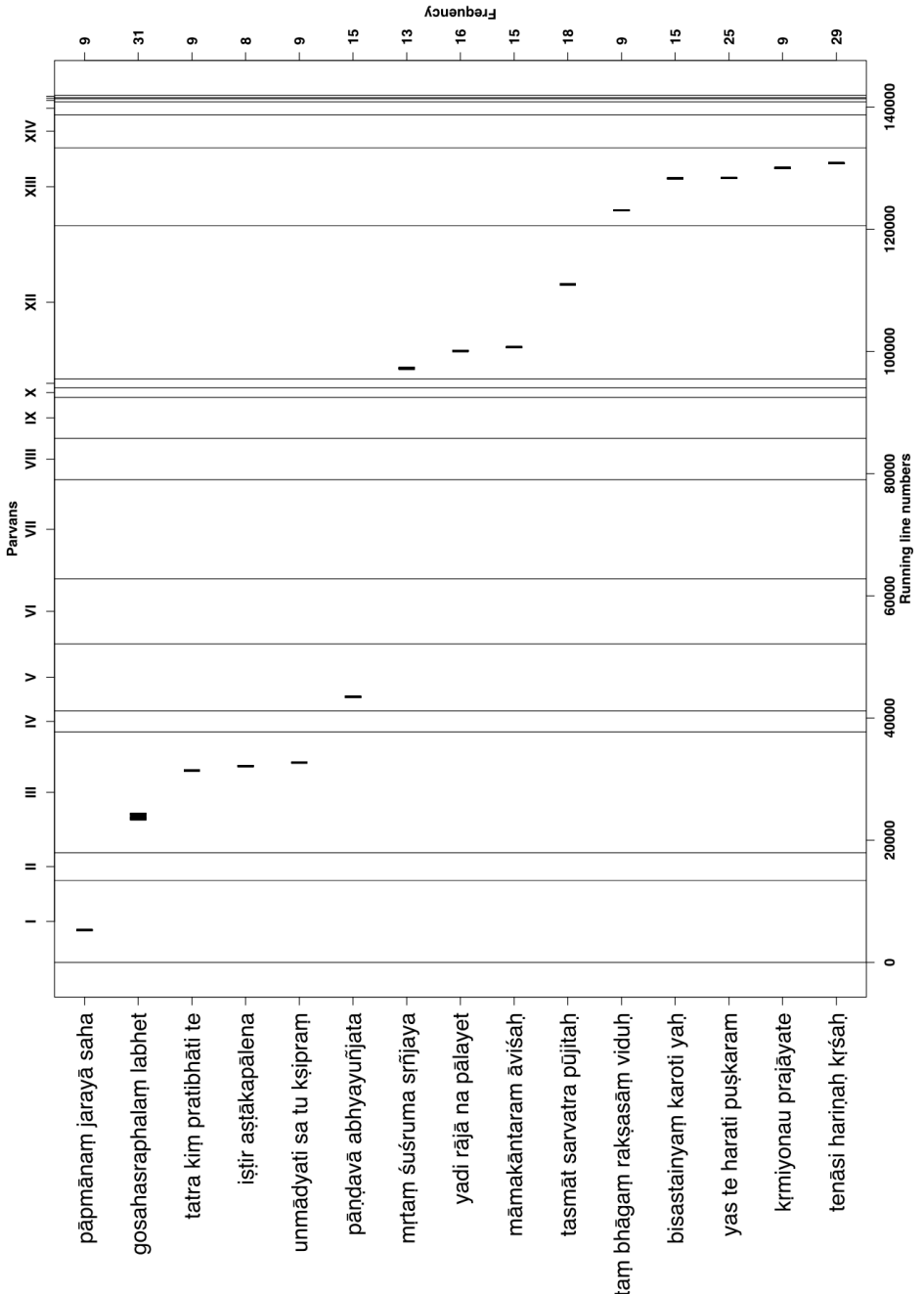


**Fig. 14.** Local pāda repetitions

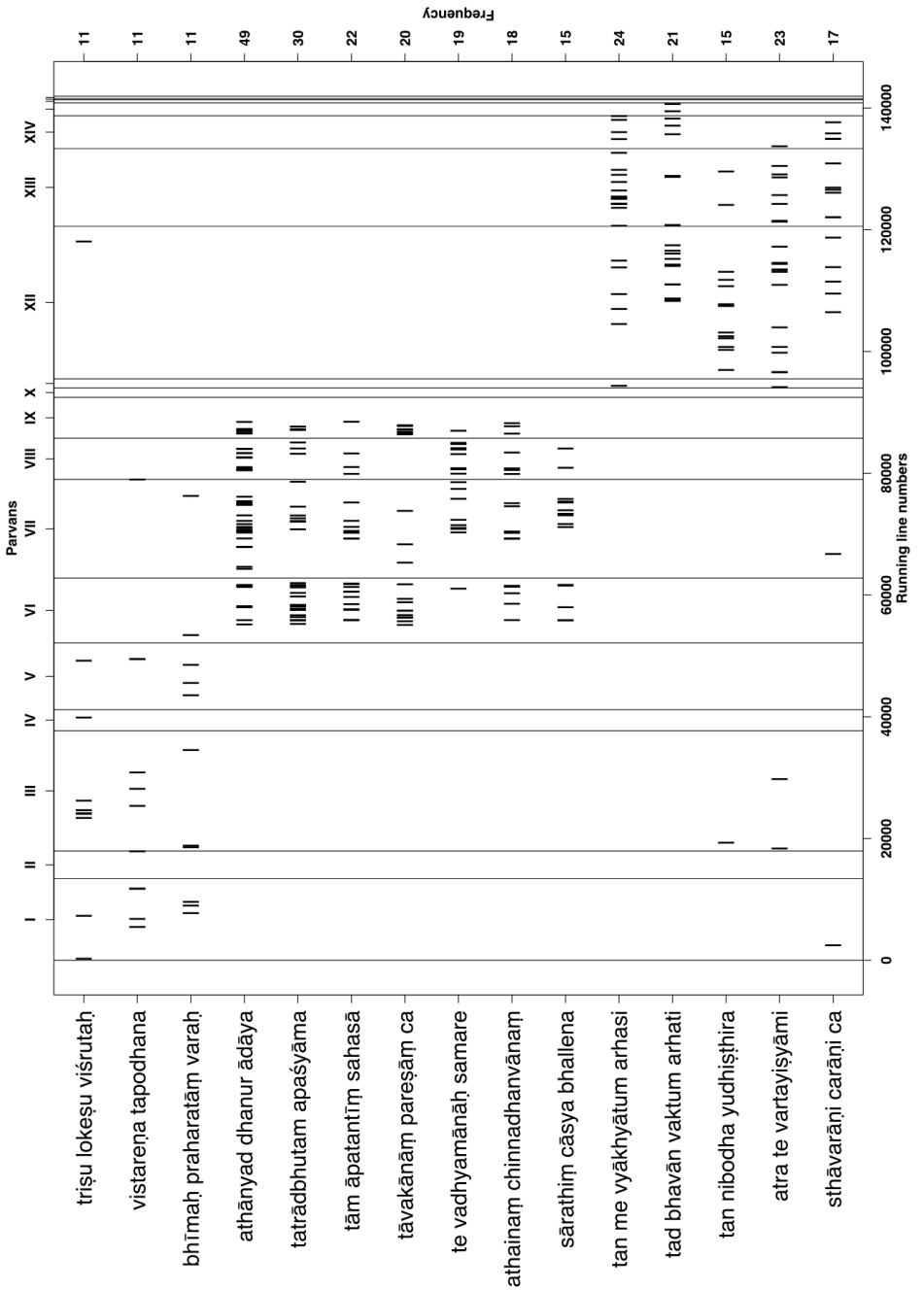


**Fig. 15.** Regional pāda repetitions

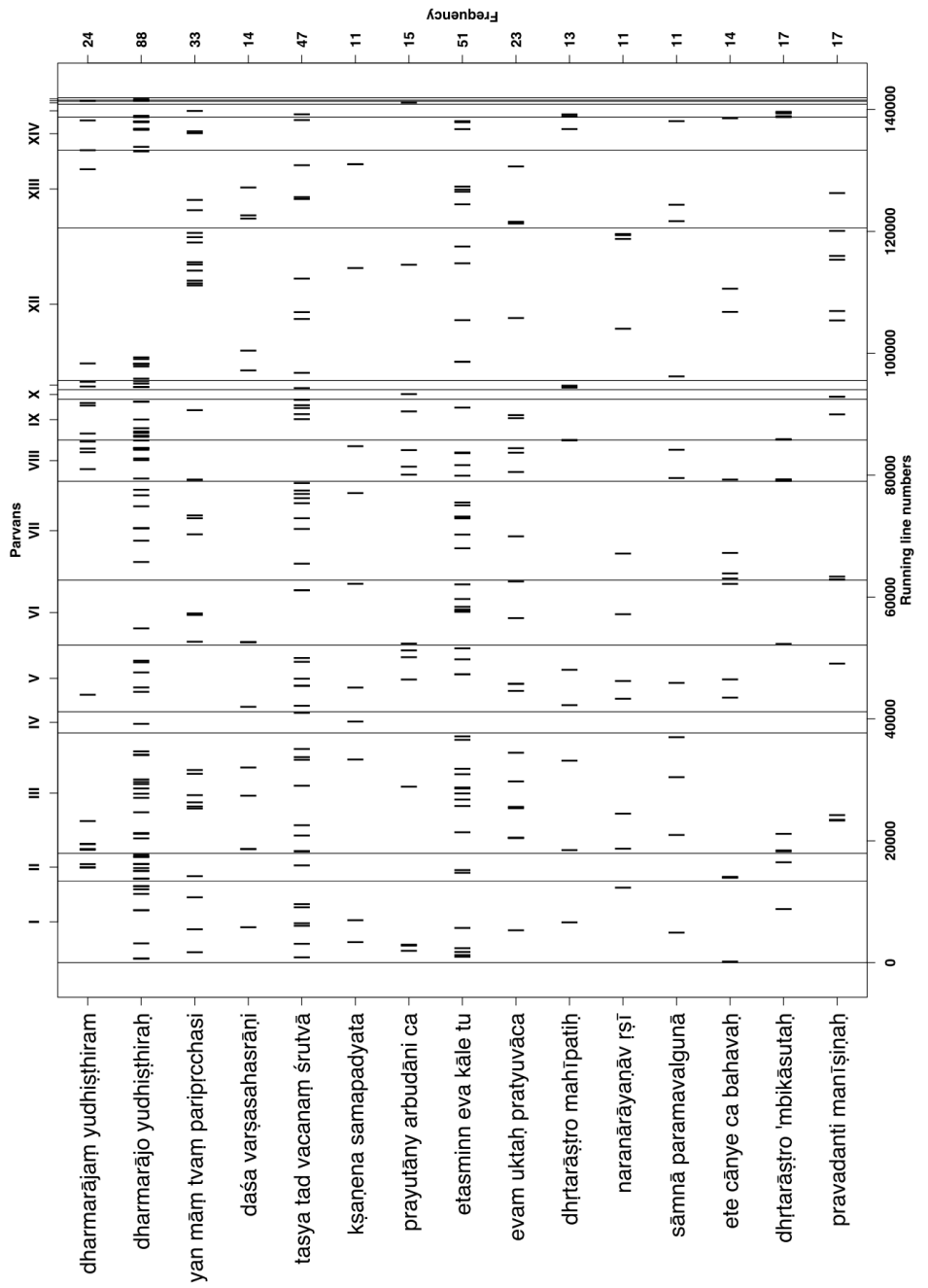


**Fig. 16.** Global pāda repetitions

### 2.4.2 Content and function of pāda repetitions

After these purely statistical investigations, let us have a closer look at the content and function of some of the repetitions mentioned above. As far as local pāda repetitions are concerned, they function as stylistic repetitions as a rule, mostly as refrains, just like their hemistich counterparts. And just like them, due to their strong connection with short, often quite rare textual passages they are of minor interest for the understanding of the formulaic and stereotyped elements of the epic language; consequently, they will be ignored for the rest of this subsection.

It might be thought that regional and global repetitions functionally should be very close to local ones, but as a rule this is not the case. While refrains are stylistic means to achieve a certain literary effect, more widely distributed repetitions often may be characterised as practical linguistic tools that can be used in typical situations to express a specific recurring idea, to perform a certain function and the like — in this respect no fundamental difference between regional and global repetitions can be observed. A range of such functions will be presented in section 2.4.2; here only a trivial and frequent set of examples shall be given, namely some expressions that serve to introduce or connect parts of a dialogue, such as:

- *evam uktaḥ pratyuvāca*
- *ity uktaḥ saḥ*
- *idaṃ vacanam abravīt*

I will only be noted in passing that sometimes repetitions with a very similar function are (for reasons that have to be investigated individually) regional rather than global, like the two latter expressions as opposed to the first one.[90]

#### 2.4.2.1 Syntactic roles of pāda repetitions

It may be helpful to start with a classification of the pādas from the point of view of sentence syntax. The following classification provides

90 This observation was made by Smith (1987, p. 610). In such cases the hypothesis is strongly suggested that such striking differences are indications that the passages containing them are products of different authors.

an overview with some examples for each type. The percentages for types and tokens in parentheses after the main type are based on the $114_{2517}$ multiplets used for generating Fig. 13 and should therefore be regarded as only relevant for this group of highly stereotyped and independent pādas. The figures in parentheses after the individual repetitions added by way of examples give the type of pāda and the number of occurrences.[91]

As regards the distribution of the repetitions under discussion over the four quarters of the verse, the picture is similar to the general figures displayed in Fig. 12:

**T23.** Distribution of pāda multiplets with freq. > 10 and top-2 affinity < 0.2 over pādas

| Pāda | Frequency | | Pāda | Frequency | |
|---|---|---|---|---|---|
| | Types | Tokens | | Types | Tokens |
| *a* | 24 | 624 | *c* | 9 | 143 |
| *b* | 33 | 609 | *d* | 48 | 1133 |

As will be seen, the single groups show individual pāda distribution patterns, which for the most part are probably due to the customary word order in Epic Sanskrit.

### (1) Noun phrase ($35_{32}$%)

Most often the repetition functions as a noun phrase, which in turn may fill either the subject or the direct object role:

- subject ($28_{28}$%)
  - *dharmarājo yudhiṣṭhiraḥ* (*b:* 62)
  - *nakulaḥ sahadevaś ca* (*c:* 28)

- direct object ($8_{5}$%)
  - *dharmarājaṃ yudhiṣṭhiram* (*b:* 15)
  - *ratnāni vividhāni ca* (*b:* 15)

91 The sandhi was neutralised. Some repetitions occur in two pāda types.

**(2) Full sentence ($35_{39}$%)**
Repeated pādas that make up full sentences are also quite common:

- *idaṃ vacanam abravīt* (*d:* 93)
- *tad adbhutam ivābhavat* (*d:* 73)
- *tan me brūhi pitāmaha* (*d:* 73)

**(3) Verb phrase (complete or incomplete) ($11_{10}$%)**
There are a couple of (mostly incomplete) verb phrases, often with non-finite verbal elements like absolutives (mostly in pāda *a*) and present participles:

- *athānyad dhanur ādāya* (*a:* 47)
- *samantāt paryavārayan* (*d:* 21)

**(4) Adverbial phrase ($4_{7}$%)**
In a few, but partly quite frequent, cases the repetition qualifies the main action adverbially:

- *śataśo 'tha sahasraśaḥ* (*d:* 76)
- *etasminn eva kāle tu* (*a:* 51)
- *vidhidṛṣṭena karmaṇā* (*d:* 18)

**(5) Instrumental phrase ($4_{4}$%)**
A few, but quite frequent instrumental phrases occur that feature different functions of the instrumental case:

- *śaraiḥ saṃnataparvabhiḥ* (*b:* 40)

**(6) Genitive phrase ($3_{2}$%)**
Some genitive phrases serve to qualify a noun in the preceding clause:

- *pāṇḍavānāṃ mahātmanām* (*b:* 20)

**(7) Relative and conditional clause ($4_{3}$%)**
Relative clauses are rare; in addition, the first example below is highly localised:

- *yas te harati puṣkaram* (*d:* 25)
- *yadi rājā na pālayet* (*d:* 16)

**(8) Locative phrase (< 1$_1$%)**
The only example for a locative phrase in our sample is the following pāda:

- *pāṇḍaveṣu mahātmasu* (*b:* 17)

This pāda is of special interest insofar, as it shows that one and the same stereotyped phrase may appear with completely different functions. The pāda in question almost always forms the second part of a *locativus absolutus*, like in the verse:

**Q22** 01,132.001
*evam ukteṣu rājñā tu pāṇḍaveṣu mahātmasu /*
*duryodhanaḥ paraṃ harṣam ājagāma durātmavān //*

"When the king had thus spoken to the great-spirited Pāṇḍavas, the evil-spirited Duryodhana was overjoyed" (tr. van Buitenen).

But we also find it in the following verse, where it fills the basic locative role, "among the great-spirited Pāṇḍavas":

**Q23** 02,034.002
*nāyaṃ yuktaḥ samācāraḥ pāṇḍaveṣu mahātmasu /*
*yat kāmāt puṇḍarīkākṣaṃ pāṇḍavārcitavān asi //*

"This is no way to behave for the great-spirited Pāṇḍavas, arbitrarily to honor this Lotus-Eye, Pāṇḍava!" (tr. van Buitenen).

Such cases show that a stereotyped combination of words that is commonly part of one particular construction may develop a certain independence.[92]

92 This means that the following rule formulated by Bloomfield in the context of Rig Vedic repetitions does not apply without exceptions to the *Mbh*: "It is a fundamental fact that a given verse-unit has the same meaning everywhere, except in so far as it is altered verbally to suit a different theme or a different connexion" (BLOOMFIELD 1916, vol. 1, p. 23). If there were really no exceptions to this rule in the *Rig Veda*

**(9) Others (< 1,%)**

Among the 114 frequent repetitions categorised here, there is only one probably accidental item,[93] which results from a combination of the frequent heterotope [9]*tadā* (287x) and the popular vocative filler [11]*bharatasattama* (142x):

- *tadā bharatasattama* (*d:* 11)

The following table provides an overview of the figures for the more frequent phrase types:

**T24.** Distribution of frequent pāda multiplets over pāda types according to syntactic function

| Pāda | SP | | DOP | | Sentence | | VP | | AdvP | | InstrP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TyF | ToF | TyF | ToF | TyF | ToF | TyF | ToF | TyF | ToF | TyF | ToF |
| *a* | 5 | 169 | 2 | 39 | 8 | 179 | 7 | 176 | 2 | 68 | 0 | 0 |
| *b* | 19 | 391 | 6 | 76 | 1 | 13 | 1 | 11 | 1 | 17 | 2 | 51 |
| *c* | 3 | 57 | 0 | 0 | 1 | 19 | 2 | 29 | 0 | 0 | 2 | 26 |
| *d* | 5 | 76 | 1 | 13 | 30 | 780 | 4 | 62 | 2 | 94 | 1 | 29 |
| all | 32 | 693 | 9 | 128 | 40 | 991 | 14 | 278 | 5 | 179 | 5 | 106 |

Abbrev.: SP = subject phrase; DOP = direct-object phrase; VP = verb phrase; AdvP = adverbial phrase; InstrP = instrumental phrase; TyF = type frequency; ToF = token frequency.

### 2.4.2.2 Content of pāda repetitions

As far as the content and narrative function of formulaic repetitions are concerned there are many possible ways to categorise them. As this is not the main topic of the present study, which is focused on form rather than on content, and both Brockington and Grincer have proposed elaborate lists, I shall mainly restrict myself to summarising the categorisations of these two scholars. Both overlap only partially, so that they

(which appears rather doubtful to me), this would mark a fundamental and very interesting difference between these two texts.

93 One can also have doubts about *evam uktvā mahārāja* (*a:* 14) because both [1]*evam uktvā* (223x) and especially [5]*mahārāja* (1,383x) are extremely frequent and so may well have combined accidentally.

combine to form a quite comprehensive list. A brief presentation with an example for each type may suffice.

BROCKINGTON 1998, pp. 105–108[94]:

- Personal names + attribute epithets, e.g., *kuntīputro yudhiṣṭhiraḥ.*
  Brockington emphasises that the epithets are not randomly employed but in addition to their being helpful by filling up a pāda they also fulfil the narrative function of characterising a person in accordance with the context.
- Introductions and speech closures, e.g., *idaṃ vacanam abravīt.*
  Some formulas include the name of the speaker or the addressee and in this case feature different versions adapted to the length of these names.
- Expressions of emotion, e.g., *vismayaṃ paramaṃ gatvā.*
- Formulas connected with battle, e.g., *athānyad dhanur ādāya.*
- "Phrases of time, place and number", e.g., *tasminn eva kāle tu* and *iha loke paratra ca.*
- Proverbial expressions, e.g., *kālaḥ pacati bhūtāni kālaḥ saṃharati prajāḥ.*
  These repetitions are normally longer than a pāda and so strictly speaking do not belong to this section.

GRINCER 1974, pp. 40–46. Grincer distinguishes six types of formulas that partly overlap with Brockington's classification:

- Attributive formulas *(atrybutnye formuly),* e.g., *bhīmo bhīmaparākramaḥ*
  Corresponding to Brockington's first group.
- Narrative formulas *(povestvovateľnye formuly),* e.g., *abhidudrāva vegena.*
  "... describe standard, repeated actions, events, and states" (p. 42).
- Auxiliary formulas *(vspomogateľnye formuly),* e.g., *etasminn eva kāle tu, śataśo 'tha sahasraśaḥ, tasya tad vacanaaṃ śrutvā, nātra saṃśayaḥ,* or *tad adbhutam ivābhavat.*
  Includes expressions of time and number, speech formulas, and "compositional joints" (p. 43).

94 Basically this is the same categorisation as in BROCKINGTON 1970 where it was developed on the basis of *Rm* material.

- Formulas of direct speech *(formuly prjamoj reči),* e.g., *paraṃ kautūhalaṃ hi me, śrotum icchāmi.*
  This group is connected by the fact that the speaker of the relevant words expresses his thoughts, wishes, state of mind etc. in the first person.
- Gnomic formulas *(formuly-sentencii),* e.g., *eṣa dharmaḥ sanātanaḥ.*
  Correspond largely to Brockington's last group.
- Simile formulas *(formuly-sravnenija),* e.g., *tasthau girir ivācalaḥ.*
  In addition to explicit similes *(upamā)* Grincer here includes also adjectives like *kamala-locana.*

### 2.4.3 Bond strength, isolation and embeddedness

In our analysis of hemistichs the frequencies of whole lines in relation to the frequencies of their constituent pādas were used to distinguish between principal and secondary hemistichs. A similar approach can also be taken with regard to pādas by analysing their constituent heterotopes, and — thanks to the greater number of observations involved — in an even more precise, statistical way.

Looking at the single heterotopes making up a pāda, it will be noticed that some of them appear exclusively, or almost exclusively, in tokens of that particular pāda, whereas others are distributed more widely. The strength with which a heterotope is "bound" to a certain pāda (to use a metaphor current in the field of chemistry) can be expressed by the quotient of the frequency of that pāda and the overall frequency of the heterotope in question, according to the following formula:

**Form. 4.** Calculation of bond strength

$$B = \frac{z_P}{z_H}$$

Thus the bond strength values range from 1, in cases where the heterotope only occurs in one pāda, to almost zero where the heterotope is generally frequent and the analysed pāda is rare. This may be exemplified by an analysis of the pāda $^{9}$*paraṃ kautūhalaṃ hi me* which occurs 19 times in the *Mbh*:

**T25.** Example of bond strength calculation

| Values | $^{9}paraṃ$ | $^{11}kautūhalaṃ$ | $^{15}hi$ | $^{16}me$ |
|---|---|---|---|---|
| | Pāda frequency: 19 | | | |
| Frequency | 108 | 29* | 128 | 464 |
| Bond strength | 0.18 | 0.66 | 0.15 | 0.04 |

* The ten occurrences outside of the above pāda are mostly close variants of it.

In the context of pāda repetitions, perhaps the most straightforward application of this type of analysis consists in identifying pāda repetitions whose elements are largely restricted to those very pādas. Therefore, because these heterotopes do not "link" the pāda in question to the rest of the text, one may say that it is in a certain sense isolated. Consider the following example where all the heterotopes are strongly bound to "their" pāda:

**T26.** An isolated pāda

| Values | $^{9}pulastyaḥ$ | $^{12}pulahaḥ$ | $^{15}kratuḥ$* |
|---|---|---|---|
| | Pāda frequency: 11 | | |
| Frequency | 12 | 11 | 20 |
| Bond strength | 0.92 | 1.0 | 0.55 |

* It must be added that the substring $^{15}kratuḥ$ in addition occurs 45 times as the second element of the compound *śata-kratuḥ*.

By contrast, in a pāda like the following all the heterotopes constitute strong links to the rest of the text, or to use another metaphor, the pāda it is highly embedded in the epic language.

**T27.** A strongly embedded pāda

| Values | $^{9}vivyādha$ | $^{12}niśitaiḥ$ | $^{15}śaraiḥ$ |
|---|---|---|---|
| | Pāda frequency: 12 | | |
| Frequency | 74 | 142 | 468 |
| Bond strength | 0.16 | 0.08 | 0.03 |

A further aspect that has to be taken into consideration is the frequency of the pāda. It is normal that some words occur only very rarely, and when two or three heterotopes of this kind form one pāda, this pāda

will automatically be highly isolated. E.g., in the following case, both heterotopes are found only as parts of this very doublet (at 07,091.045b and 11,018.010b):

**T28.** A rare isolated pāda

| Values | [9]*cārukuṇḍalam* | [14]*unnasam* |
|---|---|---|
| | Pāda frequency: 12 | |
| Frequency | 74 | 142 |
| Bond strength | 0.16 | 0.08 |

But such sporadic isolated pādas, though interesting in themselves, are of little importance for the understanding of formulaic diction. Much more relevant are pādas that are both frequent and isolated, like the one analysed in T26, because this fact makes them special and means their very existence is not easy to explain.

One may imagine that the emergence of formulaic elements is the outcome of a natural linguistic process whereby stable combinations crystallise, as it were, taking generally frequent elements as their material. Now, such an origin can hardly be attributed to frequent isolated pādas because if they were built out of ubiquitous heterotopes these elements would also appear in other contexts, but this is not the case. Quite apart from these speculations, it first of all it must be established which pādas belong to the group in question.

The easiest method to identify isolated pādas would consist in simply calculating the mean bond strength of all its heterotopes and define the result as the isolation value of the pāda. The values obtained in this way are sometimes skewed, however, due to the effect of small words like *ca* or *tataḥ* which are very common and therefore feature an extremely low bond strength. In order to mitigate this effect, a weighting coefficient was introduced that equals the quotient of the number of syllables of each heterotope divided by 8 (i.e., the number of syllables in the whole pāda); these weighted bond strengths were then added up, the sum being the weighted pāda isolation value. Consequently, longer words have a greater influence on the isolation value of a pāda. The cal-

culation method is exemplified in the following table showing both the simple and the weighted value.[95]

**T29.** Calculation of pāda isolation values (PIV)

| Values | [9]*sthavarāni* | [11]*carāṇi* | [16]*ca* | PIV |
|---|---|---|---|---|
| | Pāda frequency: 17 | | | |
| Frequency | 17 | 17 | 4191 | |
| Bond strength | 1 | 1 | 0.00 | 0.66 |
| Weighting coefficient | 4/8 | 3/8 | 1/8 | |
| Weighted bond strength | 0.5 | 0.375 | 0.00 | 0.875 |

Sample checks showed that the weighted values are generally reliable, so the calculation was done for the 260 pādas consisting of more than one word and with a frequency higher than 10 (including those present in larger units because this fact is not important in the present context); the distribution of the mean isolation values is demonstrated by the following histogram:

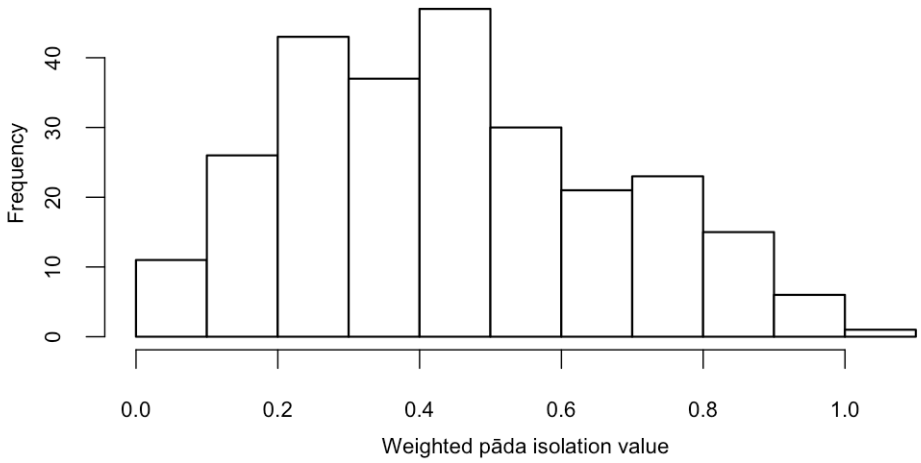


**Fig. 17.** Weighted pāda isolation values (histogram)

95 In the special case of one-word pādas the result is necessarily 1 because the occurrences of heterotope and pāda, being identical, overlap completely.

It must be added that most values are somewhat too high because the heterotopes were treated "as is", without splitting compounds or neutralising the effects of case endings and sandhi, but as a first step the procedure is good enough to give a general picture and to identify candidates for the most isolated pādas. Of these a shortlist of the top 10% in terms of weighted mean isolation values was compiled, manually checked for sandhi effects etc. and corrected. As a result some items could be removed and the list given in T30 remained.[96] As can be seen in the rightmost column, most of the repetitions are local; they function as refrains or in similar ways. Almost the entire remainder consists of regional repetitions whose occurrences are restricted to the Battle Books. And only a very small number of isolated pādas can be found widely distributed over the *Mbh*. This fact implies, as noted above (p. 99), that isolated pādas did not originate as the results of a slow crystallising process because in that case its material, i.e., the heterotopes forming the new repetition, should also occur independently, together with other words. Trying to explain this state of affairs, nothing more can be aimed at than a plausible hypothesis.

One possible explanation would be that independent pādas are thematically so specific that there is just no opportunity for the words used in them to appear in other contexts. But a look at the specific items shows that this is certainly not a general explanation: apart from the names, most practically making up the whole pāda (*pulastya, pulah* and *kratu; vinda* and *anuvinda; sṛñjaya*), there are virtually no words in the whole list with such a specific content that their (near) restriction to one pāda would be natural for that reason. The only (not mutually exclusive) alternative hypotheses seem to be that pādas of the type in question are special, creative coinages or imports from some outside tradition, "loanpādas"[97], as it were. A decision is difficult to make but in some cases there is a hint that the first alternative may be preferable, namely sandhi changes influencing the metrical structure of the affected elements.

96 Here the heuristics were partly statistical, partly manual because some effects that may skew the data had to be checked manually, especially sandhi and compounds.

97 In a certain sense they are comparable to young loan words that typically differ from older words in being part of a smaller number of idioms etc.

**T30.** Frequent pādas with high isolation value

| Pāda | Freq. | Isol. | Remarks |
|---|---|---|---|
| *atrâpy udāharantîmam* | 110 | 0.99 | part of hemistich |
| *māmakântaram āviśaḥ* | 15 | 0.98 | local |
| *vindânuvindāv āvantyau* | 26 | 0.92 | regional (battle) |
| *itihāsaṃ purātanam* | 134 | 0.91 | part of hemistich |
| *niyato niyatâśanaḥ* | 20 | 0.90 | local |
| *durgāṇy_atitaranti te* | 29 | 0.88 | local |
| *sthāvarāṇi carāṇi ca* | 17 | 0.88 | regional |
| *pulastyaḥ pulahaḥ kratuḥ* | 11 | 0.86 | list of names |
| *darśayan pāṇi-lāghavam* | 11 | 0.85 | regional (battle) |
| *sa cen mamāra sṛñjaya* | 16 | 0.83 | local |
| *hatâśvo hata-sārathiḥ* | 11 | 0.83 | regional (battle) |
| *tenâsi hariṇaḥ kṛśaḥ* | 29 | 0.82 | local |
| *mṛtaṃ śuśruma sṛñjaya* | 13 | 0.82 | local |
| *prayutāny_arbudāni ca* | 15 | 0.82 | part of formula |
| *te narāḥ svarga-gāminaḥ* | 38 | 0.82 | local |
| *agni-ṣṭoma-phalaṃ labhet* | 15 | 0.80 | local |
| *nikṛtiṃ samupāśritaḥ* | 14 | 0.80 | local |
| *yugânte paryupasthite* | 14 | 0.78 | local |
| *kim anyad bhāga-dheyataḥ* | 16 | 0.77 | local |
| *visphūrjitam ivâśaneḥ* | 14 | 0.75 | $^{13}$*hutāśane** |

* Whereas this is the only form of *aśani* "thunderbolt" at the end of a line, quite numerous hemistichs can be found ending in *hutāśane* "oblation-eater" (i.e., fire) or other case forms of this word. Though there is no etymological connection between the two words the sound sequence $^{14}$[āśan] occurs no less than 300 times and so lends some phonetic support, so to speak, to $^{13}$*ivāśaneḥ*; the isolation value should therefore be lower. The extremely common sandhi form $^{13}$*ivā-* (860x) was treated as an independent element.

Almost half of the pādas in T30 contain such changes (indicated by "^" or "_"), which is an extremely high percentage compared with the general situation in the *Mbh*. (There is not much statistical data available but just by reading some sample portions of text, it can be noticed that

such sandhis are quite rare.)[98] Sandhi changes of this type are a special problem for a poet because they affect the metrical position in which he finds himself. They are therefore unlikely to happen in fast, fluent composition, be it oral or written, unless they are already part of a fixed repetition. In a nutshell, the introduction of new combinations of words containing such sandhi phenomena probably more often than not was the work of a poet composing slowly and carefully, with or without the help of writing. Once introduced, they may become popular and spread, which in our list can be said only of the regional ones. The fact that the other stayed localised might point to the fact that they entered the tradition at a rather late point in time, but this must remain speculation until other evidence emerges.

## 2.5 Sub-pāda repetitions

Having said above that the pādas are the core elements of the traditional epic language, this does not mean of course that they are the smallest elements because most of the pādas contain more than one word (here and in the remaining chapter understood in the purely technical sense of "whitespace-delimited string"), an average of 2.86 words, to be precise. So from the point of view of versification the first and crucial step is to combine words into pādas.

While repetitions of pāda length can easily be identified and counted, the task is more complicated when it comes to sub-pāda repetitions. To be sure, it is not a problem to generate a frequency table of n-grams and to arrange it according to the number of syllables or the number of words. But in order to understand the mechanisms of versification it is necessary to distinguish, similarly as in the pāda analysis, between accidental and more or less stable combinations, and to exclude those n-grams which are completely or largely part of a longer unit.

The latter task will once more be tackled in a manner familiar by now. The extent to which shorter units are part of longer ones can be expressed by the top affinity values for the leftmost or rightmost elements of the former. The question of directionality comes in here because

98 Here are the figures for those sandhi changes that are easily extractable with the help of regular expressions: *i* → *y* before vowel occurs 8,846 times, i.e., in ca. 3% of pādas. The pattern *-eha* (← *a + iha*) can be found 544 times, but interestingly it is almost absent in the Battle Books.

sub-pāda repetitions are normally "anchored" at the beginning of a pāda (especially at the beginning of a line) or at the end of a pāda (especially at the end of a line). Here is one example for each group, with the relevant values and the calculations:

**Left-anchored, odd pādas:**

[1]*evam astv iti*

- frequency: 35
- top affinity value (right): 7/35 = 0.2 (towards [6]*taṃ)*
- affinity value of [1]*evam astv* → [4]*iti:* 35/36 = 0.97
- affinity value of [1]*evam astv* ← [4]*iti:* 35/259 = 0.14

**Right-anchored, even pādas:**

[13]*muhur muhuḥ*

- frequency: 75
- top affinity value (left): 9/75 = 0.12 (towards [12]*ca)*
- affinity value of [13]*muhur* → [15]*muhuḥ:* 75/76 = 0.99
- affinity value of [13]*muhur* ← [15]*muhuḥ:* 75/109 = 0.69

The difference between n-grams with more and those with less fixed continuations is a gradual one, but in this section only clearly independent combinations will be used as examples. As far as the mutual connection of the elements are concerned, it is only very rarely as strong as in isolated pādas.

The following tables (T31–T33) offer an overview of some of the most frequent and important of these smallest composite formulaic elements. In the single listings the n-grams are ordered by the number of syllables. Generally, my guideline has been to select items with a top affinity towards the right or left neighbour of less than 0.3 and with at least one of the internal affinities greater than 0.3. But it seemed advisable to also take into account other factors, most importantly general frequency and syntactic function. Completely fixed combinations, like forms of the periphrastic perfect, the expression *viśāṃ pate* and cases like *kadā cit* etc., which can really be treated as units, were ignored. A full list of all the n-grams can be found at SELLMER 2015. Correlations with any of the four pāda types *(a/c, b/d)* are not indicated.

A separate classification of these smaller repetitions with regard to syntax and function as opposed to pāda repetitions is not necessary as

there are no fundamental differences between these groups. It is, however, notable that particles play a bigger role in closing up these small units than is the case with pādas. In addition to being part of fixed larger repetitions, those of sub-pāda length also regularly function in more flexible structures, as will be seen in chapter 3.

Many, if not most sub-pāda repetitions also occur regularly outside of epic literature, including prose, so that in numerous cases it is doubtful if they can be regarded as formulaic elements *exclusively* belonging to the epic language.

### 2.5.1 Left-anchored repetitions

Quite frequent among the left-anchored n-grams in odd pādas are trisyllabic combinations of particles like: *tatas tu* (69x), *tathā hi* (23x) etc. Because they are short and not specific to the epic language, but also very frequent in standard Sanskrit they were not included into the list below. With left-anchored repetitions the number of stable independent n-grams in even pādas is much smaller than in odd pādas; they tend to be found in pādas *a* or *b*.

**T31.** Left-anchored sub-pāda repetitions: odd and even pādas

| Odd pādas | |
|---|---|
| N-gram | Freq. |
| *ity uktvā* | 132 |
| *ity ukta-* | 225 |
| *tac chrutvā* | 96 |
| *evam ukta-* | 357 |
| *evam uktvā* | 211 |
| *etac chrutvā* | 118 |
| *evam uktvā tu* | 36 |
| *evam uktas tu* | 93 |
| *evam uktaḥ sa* | 55 |
| *tathā tvam api* | 23 |
| *uvāca cainaṃ* | 23 |
| *evam astv iti* | 35 |
| *muhūrtam iva* | 24 |
| *śrotum icchāmi* | 23 |
| *etasminn antare* | 26 |
| *sādhu sādhv iti* | 14 |
| *etāś cānyāś ca* | 10 |
| *triṣu lokeṣu* | 17 |
| *ahany ahani* | 16 |
| *upary upari* | 16 |
| *praṇamya śirasā* | 11 |

| Even pādas | |
|---|---|
| N-gram | Freq. |
| *pūrvam eva* | 33 |
| *svayam eva* | 29 |
| *punar eva* | 77 |
| *tathaiva ca* | 37 |
| *sarva eva* | 52 |
| *nityam eva* | 26 |
| *sarvam eva* | 24 |
| *tatra tatra* | 86 |
| *punaḥ punar* | 38 |
| *tava putrasya* | 47 |
| *triṣu lokeṣu* | 80 |
| *tava putreṇa* | 29 |
| *yathā vadasi* | 26 |
| *śrotum icchāmi* | 37 |

### 2.5.2 Right-anchored repetitions

With the distribution of right-anchored repetitions it is exactly the opposite: those in odd pādas form the much smaller group.

**T32.** Right-anchored sub-pāda repetitions: odd pādas

| N-gram | Freq. | N-gram | Freq. |
|---|---|---|---|
| *bhadraṃ te* | 132 | *iti khyāta-* | 71 |
| *putras te* | 34 | *ahaṃ manye* | 50 |
| *loke 'smin* | 44 | *idaṃ vākya(m\|ṃ)* | 56 |
| *tac chrutvā* | 34 | *na paśyāmi* | 41 |
| *ity eva* | 54 | *śrotum icchāmi* | 24 |
| *tad vākya(m\|ṃ)* | 59 | *mānuṣe loke* | 21 |
| *ity āhur* | 44 | *triṣu lokeṣu* | 29 |
| *ca tathā* | 42 | *sahitāḥ sarve* | 27 |
| *ity evaṃ* | 25 | *ratham āsthāya* | 39 |
| *tathety uktvā* | 31 | *pāṇḍavāḥ sarve* | 27 |
| *vacaḥ śrutvā* | 90 | *nihataṃ dṛṣṭvā* | 29 |
| *tribhir bāṇai(r\|s\|ś\|ḥ)* | 43 | *niśitair bāṇai(r\|s\|ś\|ḥ)* | 60 |
| *dhanuś chittvā* | 28 | *dvādaśa varṣāṇi* | 23 |
| *diśaḥ sarvā* | 22 | *sarveṣu bhūteṣu* | 23 |
| *mahān āsīt* | 41 | *duryodhano rājā* | 79 |

The largest class of sub-pāda repetitions is formed by right-anchored ones in even pādas. The main reason for this state of affairs are doubtless the strict metrical requirements with regard to the cadence of pādas *b* and *d*.

**T33.** Right-anchored sub-pāda repetitions: even pādas

| N-gram | Freq. | N-gram | Freq. |
|---|---|---|---|
| *tac chṛṇu* | 33 | *idaṃ vacaḥ* | 73 |
| *eva ca* | 581 | *iti śrutiḥ* | 50 |
| *adya vai* | 27 | *na saṃśayaḥ* | 225 |
| *caiva ha* | 71 | *tathā kuru* | 25 |
| *vā punaḥ* | 74 | *na vidyate* | 109 |
| *caiva hi* | 29 | *niśitaiḥ śaraiḥ* | 142 |
| *eva hi* | 44 | *prahasann iva* | 52 |
| *eva tu* | 31 | *bhrātṛbhiḥ saha* | 37 |
| *eva vā* | 24 | *navabhiḥ śaraiḥ* | 39 |
| *eva ha* | 21 | *pāṇḍavaiḥ saha* | 37 |
| *muhur muhuḥ* | 75 | *nātra saṃśayaḥ* | 99 |
| *śitaiḥ śaraiḥ* | 51 | *vākyam abravīt* | 107 |
| *hasann iva* | 35 | *daśabhiḥ śaraiḥ* | 43 |
| *pṛthak pṛthak* | 51 | *pṛthivīm imām* | 38 |
| *tatas tataḥ* | 92 | *paramāṃ gatim* | 71 |
| *ataḥ param* | 38 | *idam abravīt* | 87 |
| *mahīm imām* | 26 | *bhūtim icchatā* | 22 |
| *tathaiva ca* | 289 | *vadatāṃ vara* | 38 |
| *diśo daśa* | 55 | *rathināṃ varaḥ* | 47 |
| *parāṃ gatim* | 30 | *kartum arhasi* | 54 |
| *tribhiḥ śaraiḥ* | 37 | *pratibhāti me* | 21 |
| *punaḥ punaḥ* | 289 | *sukham edhate* | 28 |
| *uvāca ha* | 105 | *vaktum arhasi* | 31 |
| *babhūva ha* | 30 | *iti me matiḥ* | 80 |
| *jagāma ha* | 39 | *yadi manyase* | 22 |
| *'bravīd idam* | 32 | *iti naḥ śrutam* | 49 |
| *bhavaty uta* | 27 | *iti niścayaḥ* | 25 |
| *nibodha me* | 70 | *āhur manīṣiṇaḥ* | 34 |
| *rathaṃ prati* | 32 | *-ātmānam ātmanā** | 50 |

* + sandhi versions

# 3
# FORMULAIC STRUCTURES

After the above lengthy presentation and analysis of the basic repetitive, and especially formulaic, elements in the *Mbh* finally the time has come to see how they were used by the epic poets for the actual composition of verses. So far this study has been mainly concerned with classifications and analyses of a static type. But versification is a process, so in order to understand it better, it is necessary to look at the dynamic picture hidden in the static data presented so far. These dynamic aspects will be studied piecemeal, as it were, on the basis of different structural features of the linguistic material.

## 3.1 Alternations

In his ground-breaking dissertation (PARRY 1928) Milman Parry discovered several systems of name-epithet combinations in Homer. These combinations had different metrical shapes which — according to Parry's interpretation — fulfilled the practical role of enabling frequently occurring names to be used at different positions of the hexameter. Generally, one might define a "Parryan system" as *a group of contextually synonymous formulaic expressions that feature different prosodic patterns and can therefore be interchangeably used at various verse positions*. In the Homeric language these systems are generally characterised by "thrift", i.e., only rarely does more than one element with a given metrical pattern occur.[99]

In the *Mbh* quite a few of such systems can be found (see below 3.5) but many of them are of minimal size, as it were. The one metrical feature with the greatest influence on the shape of the Sanskrit epic formulaic diction is without a doubt the different structure of cadences in odd and even pādas. This has several consequences, but perhaps the most

99 A close inspection shows however that the breaches of formular economy in Homer are more frequent than Parry and his followers thought, as Friedrich (2007) managed to demonstrate.

striking is the fact that a certain number of semantically equivalent pādas as well as shorter units occur in alternative or parallel versions: one (or more) for odd and one (or more) for even quarters of a verse. The reason for such a state of affairs is quite obvious: It is useful for a poet to have alternative versions of common semantic units at his disposal that are metrically fitted to either type of pāda.

This phenomenon was quite extensively dealt with by Grincer, who appended a list of 97 "parallel formulas" (mostly culled from the *Rm*) to his book on the Indian epics (1974, pp. 385–388); the most obvious type of parallels are some frequently occurring proper names that regularly combine with epithets (and sometimes particles) to form units of pāda length. The following list gives an overview of the most frequent epithets for the principal actors in the nominative;[100] but it should be added that there are less frequent variants of many of these pādas, e.g., with other epithets accompanying the name (for a full list see SELLMER 2015), and for a really comprehensive overview even other names and epithets used as names would have to be included. In the odd pādas there is sometimes no commonly used name-epithet combination;[101] in these cases the name is given as such or with the most frequently following particle in parentheses. Other particles that usually accompany a name-epithet combination are also added in parentheses, with their frequency as a subscript. Where *pausa* forms are given in the odd pāda versions they represents all sandhi forms.

Even a cursory look at table T34 clearly shows that thrift certainly plays only a small role in this part of Sanskrit epic formulaic diction, and even this is an understatement if we have a look at the longer list at SELLMER 2015, bearing in mind that it is far from comprehensive because it ignores alternative names.

100 Only combinations with the following elements were taken into account: non-situational attributive words, particles other than *ca*, and vocatives.

101 Smith has observed that "pre-cadential references to people [...] chiefly consist of simple names" (1999, p. 276).

**T34.** Frequent names in odd and even pādas

| Odd pādas | | Even pādas | |
|---|---|---|---|
| Name (+ epithet) | Freq. | Name + epithet | Freq. |
| *(tato$_{46}$) yudhiṣṭhiro rājā* | 58 | *dharmarājo yudhiṣṭhiraḥ* | 88 |
| | | *kuntīputro yudhiṣṭhiraḥ* | 55 |
| | | *dharmaputro yudhiṣṭhiraḥ* | 39 |
| | | *kururājo yudhiṣṭhiraḥ* | 18 |
| *dhṛṣṭadyumnas (tu)* | 16 | *dhṛṣṭadyumno mahārathaḥ* | 12 |
| | | *dhṛṣṭadyumnaḥ pratāpavān* | 8 |
| | | *dhṛṣṭadyumno mahāmanāḥ* | 4 |
| *(tato$_{48}$) duryodhano rājā* | 79 | *rājā duryodhanas (tadā$_{22}$)* | 33 |
| *(tato$_{10}$) bhīmo mahābāhuḥ* | 16 | *bhīmo bhīmaparākramaḥ* | 22 |
| | | *bhīmaḥ praharatāṃ varaḥ* | 11 |
| *bhīmaseno mahābāhuḥ* | 9 | *bhīmaseno mahābalaḥ* | 46 |
| | | *bhīmasenaḥ pratāpavān* | 19 |
| | | *bhīmaseno 'tyamarṣaṇaḥ* | 5 |
| *bhāradvājaḥ* | 23 | *bhāradvājaḥ pratāpavān* | 24 |
| | | *bhāradvājo mahārathaḥ* | 7 |
| *vāsudevaḥ* | 45 | *vāsudevaḥ pratāpavān* | 8 |
| *keśavaḥ* | 6 | *keśavaḥ paravīrahā* | 9 |
| *arjunas (tu)* | 19 | *kuntīputro dhanaṃjayaḥ* | 30 |
| | | *savyasācī dhanaṃjayaḥ* | 6 |
| *dhṛtarāṣṭraś (ca)* | 12 | *dhṛtarāṣṭro 'mbikāsutaḥ* | 17 |
| *dhṛtarāṣṭro mahārājaḥ* | 3 | *dhṛtarāṣṭro mahīpatiḥ* | 13 |
| | | *dhṛtarāṣṭro janeśvaraḥ* | 9 |
| *kṛtavarmā (tu)* | 11 | *kṛtavarmā ca sātvataḥ* | 19 |
| | | *kṛtavarmā mahārathaḥ* | 11 |
| *(⏑ ⏑) vaikartanaḥ karṇaḥ* | 17 | *karṇo vaikartanaḥ (⏑ ⏑)* | 14 |
| | | *sūtaputraḥ pratāpavān* | 9 |
| *droṇas (tu)* | 19 | *droṇaḥ śastrabhṛtāṃ varaḥ* | 9 |
| | | *droṇaḥ kṣatriyamardanaḥ* | 5 |
| *(⏑ ⏑ ⏑) bhagavān vyāsaḥ* | 13 | *vyāsaḥ satyavatīsutaḥ* | 9 |

Parallels other than those containing epithets are much more thrifty. Of the 60 pairs of this kind listed by Grincer, 17 consist of one word, hence will not be considered here. Among the remainder there is a handful of doubtful cases,[102] but more important than the interpretation of single expressions is the question of frequency. Grincer gives no frequencies in his list, which is understandable as he had no access to an electronic text. It will therefore be helpful to supply this information, at least for the verb phrases, in the following table:

**T35.** Parallel variants of formulaic pādas with verbal element

| Odd pādas | Freq. | | Even pādas | Freq. | |
|---|---|---|---|---|---|
| | *Mbh* | *Rm* | | *Mbh* | *Rm* |
| *vismayaṃ paramaṃ jagmuḥ** | 16 | 3 | *vismayaṃ paramaṃ gataḥ* | 19 | 2 |
| ⏑ ⏑ *pradakṣiṇaṃ kṛtvā* | 12 | 8 | ⏑ ⏑ *kṛtvā pradakṣiṇam* | 4 | 0 |
| *svabāhubalam āśritya* | 7 | 1 | *svabāhubalam āśrita* | 8 | 0 |
| *tataḥ samabhavad yuddham* | 11 | 1 | *tato yuddham avartata* | 16 | 0 |
| *vavarṣa śaravarṣāṇi* | 9 | 4 | *śaravarṣaṃ vavarṣa ca* | 1 | 1 |
| ⏑ ⏑ ⏑ *niśitair bāṇaiḥ* | 64 | 7 | ⏑ ⏑ ⏑ *niśitaiḥ śaraiḥ* | 144 | 19 |
| *prabhātāyāṃ tu śarvaryām* | 5 | 5 | *śarvarī samapadyata** | 1 | 2 |
| *kṛtvā paurvāhṇikaṃ kṛtyam** | 1 | 1 | *kṛtvā paurvāhnikāḥ kriyāḥ* | 2 | 2 |
| *abravīt* ⏑ ⏒ – *vākyam* | 6 | 37 | ⏑ ⏑ ⏑ *vākyam abravīt* | 109 | 98 |
| ⏑ ⏑ ⏑ *ślakṣṇayā vācā* | 20 | 3 | ⏑ ⏑ ⏑ *ślakṣṇayā girā* | 6 | 2 |
| *bhajasva mām* ⏒ – – ⏑ | 4 | 0 | ⏑ ⏑ ⏑ ⏑ *bhajasva mām* | 8 | 0 |
| *etad ācakṣva me* – ⏑ | 8 | 2 | *tan mamācakṣva* – ⏒ ⏑ | 61 | 2 |
| *etad icchāmy ahaṃ śrotum* | 34 | 1 | *śrotum icchāmi* – ⏒ ⏑ | 37 | 8 |
| *śrotum icchāmi* – – ⏑ | 23 | 3 | | | |
| *tatrādbhutam apaśyāma* | 30 | 0 | *tad adbhutam ivābhavat* | 77 | 2 |
| *prāhiṇon mṛtyulokāya* | 12 | 0 | *prāhiṇod yamasādanam* | 9 | 0 |

* Including other metrically equivalent verb forms.

Verb phrases have been chosen because they form the most interesting group in the context of the present investigation (exceptionally,

102 In a few cases the items given as parallels by Grincer are not sufficiently equivalent, as, e.g., [1]*athānyad dhanur ādāya* ≠ [9]*gadām ādāya vīryavān*; [4]*kavacaṃ bhittvā* ≠ [11]*ciccheda kārmukam.* In addition, *gṛhāṇa pāṇiṃ vidhivat* does not occur in even pādas.

both the *Mbh* and the *Rm* will be covered because the differences between the two texts as to the frequencies of these formulaic pādas are in some cases quite remarkable). Those criticised as spurious in fn. 102 have been removed; at the same time two parallels not noted by Grincer have been added and some minor corrections and improvements applied. Close variants that differ only because of sandhi, case and the like are included in the count but not explicitly marked.

Even though it is probable that Grincer and the present author have overlooked a few "parallel formulas", it can safely be stated that this sort of formula does not form a very numerous group. Much more common than the use of two alternating fixed pādas of comparably high frequency is a situation where for one type of pāda we have a frequently occurring main option, whereas the equivalent expressions in the other pāda type are realised by different minor variations.

## 3.2 Last words

The repetitions recorded in sections 2.2–2.5 consisted of multiple words, but there is actually one class of frequent heterotopes that must necessarily be included in the discussion of formulaic diction. I am referring to a rather small number of heterotopes that occur with high frequency at the end of pādas, especially at the end of lines.

It is a well-known fact that in oral poetic traditions we often find an extensive use of fillers or "expletives", i.e., a "word or phrase [...] used for filling up a sentence, eking out a metrical line, etc. without adding anything to the sense".[103] Such expressions are also very much present in the *Mbh*, just to mention the ubiquitous vocatives [7]*rājan* and [14]*bhārata*, as in the following two verses:

**Q24** 01,168.017
*dadṛśus taṃ tato <u>rājann</u> ayodhyāvāsino janāḥ /*
*puṣyeṇa sahitaṃ kāle divākaram ivoditam //*

"The citizens of Ayodhyā, sire, set eye upon him as upon the sun that rises in the sign of Puṣya" (van Buitenen, mod.).

103 *OED,* s.v. "expletive, adj. and n.", B.1.a. In order to avoid confusion with the more common usage of the noun as "swear word", the expression "filler" is to be preferred, so that "expletive" will only be used as an adjective.

**Q25** 07,091.032
*sātyakiṃ chinnadhanvānaṃ prahasann iva bhārata /*
*avidhyan māgadho vīraḥ pañcabhir niśitaiḥ śaraiḥ //*

"When Sātyaki's bow had been cut, laughing, O Bhārata, the Māghadan hero hit him with five sharp arrows."

Their sheer number makes is necessary to analyse their role in versification in some detail.

In addition to "filler", another term relevant in the present context is "supporting word", introduced into English by de Jong as a translation of Grincer's term *opornye slovo,* which is also central for Vasiľkov, in a review of VASIĽKOV 1973 by de Jong (1975, p. 17). A supporting word is a word frequently appearing at the end of a pāda and having an important function in its formation, which may be twofold because (as Vasiľkov explains) a supporting word

> [...] can be the subject (like, i.e., *mahārāja* 'king', 'maharajah', in the nominative, at the end of pāda *a* or *c*; in this case the 'supporting word' is a given, of course, and the 'previous motion of the verse' is already adjusted to it). But a 'supporting word' can also be neutral, 'additional', without any function other than closing the verse. In this case the narrator naturally takes his departure from the initial element of the pāda and chooses a 'supporting word' that fits the specific situation.
> In most cases the combination of a 'supporting word' with an initial element is unique, i.e., does not occur twice; there are, however, also repeated combinations. Whereas in the first case we have a 'non-formulaic' pāda, or better, a pāda in which only the final element is 'formulaic', in the second case we already have in front of us a pāda formula (VASIĽKOV 1973, pp. 5–6 [my translation]).

The second function clearly is that of a filler. The class of supporting words of the first type is larger than one might expect, as many examples given in VASIĽKOV 1973 show. As illustration of the use of the nominative *mahārājaḥ* referred to in the last quotation would be a sentence like:

**Q26** 02,066.036ab
*athābravīn mahārājo gāndhārīṃ dharmadarśinīm.*

"Whereupon the great king replied to Gāndhārī, who had seen the Law" (tr. van Buitenen).

But a supporting word of the first type might also be a verb form like the absolutive *ādāya* in the following stereotyped pāda:

**Q27** [1]*athānyad dhanur ādāya* (49x, cf. VASIĽKOV 1973, p. 9–10).

Comparing Q24 and Q25 on the one hand with Q26 and Q27 on the other, it is obvious that the two roles, as correctly noted by Vasiľkov, are, indeed, quite different — so much so, I would submit, that the use of a single term for both groups of words at the end of a pāda does not seem to be really helpful. This is also because whereas the number of different "neutral" supporting words, i.e., fillers in the standard sense, is restricted (though not small); non-neutral ones, i.e., all non-sporadic syntactically and/or semantically important words at the end of a pāda, are too numerous and variegated to be fruitfully treated as one group — besides, they are just too numerous to handle. In the present study they will therefore only be noted and discussed if they form part of stereotyped combinations, like *ādāya* in Q27 and of simple templates (see next section).

Instead, a closer look at fillers would be profitable. They will be identified on the basis of three quantitative and two qualitative features:

1) *End position.* It is trivial to say that fillers occur at the end of a pāda because their main role consists exactly in filling up the verse quarter to which they are added.
2) *Frequency.* Because we are interested in words that are regularly used as fillers, rare ones will be ignored. For the following lists a minimum frequency of 50 was adopted.
3) *Low affinity.* The usefulness of a filler for the poet lies in its fitness to be used in many different contexts, therefore their affinity values are typically quite low (top-2 affinity often below 0.1). In principle fillers might also become part of frequent stereotyped expressions, but I did not notice any such examples.

But these quantitative features on their own are not sufficient to identify fillers, as they are shared by quite a number of other words. So the final selection must include two steps which (for the time being) require human expertise:

4) *Syntactic neutrality.* It must be ascertained that the presumed filler is not syntactically a *necessary* component of the phrase it belongs to.
5) *Light semantic weight.*[104] Lastly, a filler should not change the sense of the phrase it is added to in a substantial way.

In principle the last two steps should be performed individually for every verse but this is of course impractical. Therefore the selection was based on generic assessments aided by occasional checks of specific passages, so some caveats are in order.

Firstly, in general only vocative noun forms, adjectives and adverbial expressions could pass test no. 4, which unfortunately produces false negatives with regard to nouns in cases other than the vocative. Consider a different use of *mahārājaḥ* other than the one in Q26:

**Q28** 01,199.018
*adya pāṇḍur mahārājo vanād iva vanapriyaḥ /*
*āgataḥ priyam asmākaṃ cikīrṣur nātra saṃśayaḥ //*

"Today it is as though the great King Pāṇḍu who loved the woods has come back from the woods, and surely to look after our welfare!" (tr. van Buitenen).

Here the noun is used attributively and is not strictly necessary (unless in order to show special respect) because the recipient knows well, of course, that Pāṇḍu is a great king. But such cases are a minority, and so it is hoped that the general exclusion of nouns in cases other than the vocative did not seriously affect the quality of the results.

104 The notion of "semantic weight" was proposed by me in a paper read at the 5th Dubrovnik International Conference on the Sanskrit Epics and Purāṇas in 2008 (SELLMER forthcoming). According to this conception the central elements of a proposition (or part of a proposition) expressed in a verse (or *pāda*) have maximal semantic weight, a mere empty filler has none (which does not imply, of course, that a filler has no meaning at all, it certainly has; but this meaning is of minimal importance in a given context, making one "light" word easily replaceable by another, metrically more convenient one); and there is a "weight class" in between these extreme points. See section 3.7 below for more details and for the background of this classification.

Secondly, with adjectives there is a somewhat similar, but reverse problem. Quite often they are substantivised, so that the figures in the list below should be considerably lower for some of them. In addition, there are verses where adjectives in pādas *a* or *c* are connected with a noun in the pāda that follows.

Thirdly, the semantic weight of a word in a sentence is often difficult to assess, even when looking closely at the text. E.g., there is a number of adverbs that provide some kind of intensification, like [7]*nityam*, [15]*bhṛśam*, and [15]*sadā*. Here it is a matter of personal judgement if the meaning of a particular phrase changes "substantially" by the addition of such words. As a rule it was assumed that this is not the case, though it has to be admitted that many adverbs and adjectives certainly oscillate between light and substantial semantic weight. The situation with nouns meaning "battle" in the locative sg. is special: in the narration of battle events they mostly carry little semantic weight because the whole action is situated in the battle, but in other contexts they are semantically important. Therefore they are included in the list of fillers, but the number of cases where they really function as fillers is smaller than the total numbers given in the table.

Below is a list of expletive words with a frequency > 50. (The nom. sg. m. forms of the *a*-declension representing all masculine and feminine nominative forms in the singular and plural in all sandhi variants.) They are divided into word classes, then ordered according to the increasing number of syllables.

Obviously it is convenient for the poets to have at their disposal fillers for both odd and even pādas with different numbers of syllables, and it has to be remembered that the above list includes only the most frequent words, so their real choice is much larger. To be sure, semantically not all words are universally interchangeable — some are reserved for one particular person, others can be applied to warriors in general, and the like — but semantic questions will not be discussed in this

study;[105] however, we shall briefly come back to this point later on, in section 3.5.[106]

**T36.** Frequent fillers I: words other than vocatives

| Odd pādas | | Even pādas | | Odd pādas | | Even pādas | |
|---|---|---|---|---|---|---|---|
| Filler | Freq. | Filler | Freq. | Filler | Freq. | Filler | Freq. |
| Particles | | | | Adjectives | | | |
| *vai* | 643 | *vai* | 438 | *śrīmān* | 121 | *prabhuḥ* | 309 |
| | | *ha* | 830 | *dhīmān* | 165 | *balī* | 164 |
| Battle | | | | *kruddhaḥ* | 363 | *vibhuḥ* | 53 |
| *saṃkhye* | 244 | *raṇe* | 404 | *saṃkruddhaḥ* | 218 | | |
| *yuddhe* | 292 | *yudhi* | 250 | *susaṃkruddhaḥ* | 43 | | |
| | | *mṛdhe* | 55 | *mahābāhuḥ* | 383 | *mahāmanāḥ* | 110 |
| *saṃgrāme* | 234 | *saṃyuge* | 382 | *mahātejāḥ* | 221 | *mahādyutiḥ* | 65 |
| *samare*$_{vip}$* | 358 | *āhave* | 197 | *maheṣvāsaḥ* | 246 | *mahāyaśāḥ* | 171 |
| | | *mahāhave* | 114 | *mahābhāgaḥ* | 146 | *mahārathaḥ* | 699 |
| | | *mahāraṇe* | 75 | *mahāprājñaḥ* | 75 | *mahātapāḥ* | 168 |
| | | *mahāmṛdhe* | 49 | *mahāvīryaḥ* | 86 | *mahābalaḥ* | 450 |
| Adverbs | | | | | | | |
| *nityam* | 468 | *bhṛśam* | 216 | | | | |
| | | *sadā* | 309 | | | | |
| | | *nityaśaḥ* | 53 | | | | |

*Here and in the following tables *"vip"* as a lower index signifies that the heterotope thus marked produces a *vipulā* pattern.

105 Because of their relative semantic neutrality fillers are potentially helpful for identifying stylistic differences (perhaps due to the preferences of individual authors) and the like. Ingalls noted peculiarities in the distribution of $^{6}$*samare,* having observed on the basis of his imperfect data that it was common in Book VI, but occurred "very rarely" in Book VII (1991, p. 46). This observation needs to be qualified however. The filler in question is not rare in the *whole* of the *Droṇaparvan*, but it can be found only sporadically in two lengthy passages: between the occurrences at 07,015.006c and 07,081.028a, and from 07,159.021a till the end of Book VII, which is highly significant.

106 The list of parallel formulas in appendix II of GRINCER 1974 should also be consulted.

**T37.** Frequent fillers II: vocatives

| Odd pādas | | Even pādas | |
|---|---|---|---|
| Vocatives: female addressee | | | |
| Filler | Freq. | Filler | Freq. |
| *devi* | 61 | *śubhe* | 86 |
| *bhadre* | 67 | | |
| *kalyāṇi* | 62 | *bhāmini* | 55 |
| Vocatives: male addressee | | | |
| *rājan* | 2,576 | *nṛpa* | 417 |
| *tāta* | 546 | *prabho* | 317 |
| *pārtha* | 229 | *vibho* | 191 |
| *vīra* | 188 | *dvija* | 106 |
| *brahman* | 169 | | |
| *kṛṣṇa* | 161 | | |
| *deva* | 96 | | |
| *putra* | 83 | | |
| *vipra* | 110 | | |
| *rājendra* | 548 | *bhārata* | 1,854 |
| *kaunteya* | 261 | *saṃjaya* | 238 |
| *kauravya* | 160 | *māriṣa* | 298 |
| *dharmajña* | 97 | *mādhava* | 132 |
| *viprarṣe* | 57 | *putraka* | 60 |
| *vārṣṇeya* | 56 | *keśava* | 86 |
| *bhagavan* | 56 | *mānada* | 56 |
| *nṛpate* | 51 | *pāṇḍava* | 148 |
| | | *kaurava* | 62 |
| | | *pārthiva* | 232 |
| | | *sattama* | 56 |
| *mahārāja* | 1,366 | *viśāṃ pate* | 578 |

| Odd pādas | | Even pādas | |
|---|---|---|---|
| Vocatives: male addressee (contd.) | | | |
| Filler | Freq. | Filler | Freq. |
| *mahābāho* | 418 | *ariṃdama* | 154 |
| *mahāprājña* | 95 | *janārdana* | 134 |
| *naraśreṣṭha* | 72 | *dvijottama* | 102 |
| *mahābhāga* | 60 | *narādhipa* | 287 |
| *kuruśreṣṭha* | 56 | *mahīpate* | 91 |
| | | *mahāmune* | 56 |
| | | *dhanaṃjaya* | 69 |
| | | *janādhipa* | 118 |
| | | *paraṃtapa* | 181 |
| | | *nararṣabha* | 54 |
| | | *yudhiṣṭhira* | 329 |
| | | *janeśvara* | 51 |
| | | *pitāmaha* | 177 |
| *bharataśreṣṭha* | 179 | *puruṣarṣabha* | 125 |
| *rājaśārdūla* | 66 | *kurunandana* | 138 |
| | | *madhusūdana* | 117 |
| | | *dvijasattama* | 107 |
| | | *bharatarṣabha* | 764 |
| | | *janamejaya* | 72 |
| | | *pṛthivīpate* | 73 |
| | | *rājasattama* | 66 |
| | | *bharatasattama* | 135 |

Another topic that is generally not part of the present investigation must be taken up here: the construction and usage of compounds. It is important to add to the above table the information that compounded nouns with the final members *-śreṣṭha, -vyāghra, -śārdūla* (for odd padas) and *-ṛṣabha, -puṃgava, -sattama, -uttama* plus combinations of the type $\text{NOUN}_{\text{G.pl.}}$ + *vara* (for even pādas) are only the tip of the iceberg, so to speak. There are literally hundreds of words of this kind with thousands of occurrences. Many of them are found only once or a few times, others are very frequent, but all of them are capable of closing a pāda, either as a filler or as an essential element, so they must be considered an important factor for the flexibility of the epic language. T39 shows figures for the numbers of types and tokens and the most frequent combinations for each class.[107] The quite lengthy full list of compounds can be found at SELLMER 2015.

Brockington has criticised Vasiľkov's distinction between two types of supporting words because he feels that it "is useful but obscures the fact that frequently the same word is involved, the only difference being the case" (BROCKINGTON 2000, p. 205). This remark in a way applies also to the present study because it is indeed a fact that for many of the expletive vocatives there can also be found nominatives in the same verse position, though (in some cases much) less frequently. With the most frequent words, the discrepancy is enormous, as can be seen from the table T38. In the case of other words the ratio is much more even, e.g., [13]*ariṃdama-* comprises 154 occurrences in the vocative vs. 61 in the nominative.

**T38.** Frequencies of voc. and nom. forms in frequent fillers

| Hetorotope | Voc. | Nom. |
|---|---|---|
| [6]*rājendra-* | 548 | 18* |
| [4]*rājaśārdūla-* | 66 | 8** |
| [5]*mahārāja-* | 1,366 | 20 |
| [14]*bhārata* | 1,854 | 3 |

* 14 occ. in Books I–III.
** 6 occ. in Books I–III.

107 Only heterotopes ending either at syllable 8 or 16 are counted. Some of the compounds occur occasionally at other positions, but only rarely. Some examples can be found in SMITH 1999, p. 295–296.

**T39.** Frequent compounds in end position

| Odd pādas | |
|---|---|
| Compound | Freq. |
| *-śreṣṭha:* $87_{812}$* | |
| *bharataśreṣṭha* | 219 |
| *naraśreṣṭha* | 107 |
| *kuruśreṣṭha* | 89 |
| *dvijaśreṣṭha* | 77 |
| *-vyāghra:* $9_{535}$ | |
| *puruṣavyāghra* | 276 |
| *naravyāghra* | 233 |
| *manuṣavyāghra* | 17 |
| *-śārdūla:* $27_{257}$ | |
| *rājaśārdūla* | 78 |
| *naraśārdūla* | 28 |
| *kuruśārdūla* | 25 |
| *puruṣaśārdūla* | 21 |

* Variants with gen. pl. + *śreṣṭha:* $21_{42}$ have to be added.

| Even pādas | | |
|---|---|---|
| Compound | | Freq. |
| *-ṛṣabha:* $29_{1532}$ | | |
| *bharatarṣabha* | | 818 |
| *puruṣarṣabha* | | 288 |
| *nararṣabha* | | 152 |
| *-puṃgava:* $32_{201}$ | | |
| *kurupuṃgava* | | 43 |
| *śinipuṃgava* | | 35 |
| *munipuṃgava* | | 24 |
| *-sattama:* $71_{948}$ | | |
| *dvijasattama* | | 188 |
| *bharatasattama* | | 148 |
| *rājasattama* | | 101 |
| *-uttama:* $92_{758}$ | | |
| *dvijottama* | | 171 |
| *puruṣottama* | | 107 |
| *narottama* | | 68 |
| $\text{NOUN}_{\text{G.pl.}}$+ *vara:* $94_{624}$ | | |
| *rathināṃ* | *vara* | 74 |
| *dharmabhṛtāṃ* | *vara* | 60 |
| *vadatāṃ* | *vara* | 59 |
| *sarvaśastrabhṛtāṃ* | *vara* | 44 |
| *balināṃ* | *vara* | 33 |

How can the relationship between such nominative-vocative doublets be described in the context of versification? The interesting point about them is that the difference in case often entails a completely different sentence structure because a vocative can be added to virtually all kinds of complete or incomplete phrases, whereas a nominative naturally fits only in certain instances. One way to describe the situation would be to start not from the words in question, but from the whole structure. From this point of view, the vocative forms are used in "filler slots" of certain verse types, whereas nominatives occupy "subject slots" or the like in other types, and the fact that the same word is used in both cases is only a secondary phenomenon — which does not necessarily mean that it is accidental because it seems quite possible that the rare nominatives are in some way psychologically "triggered" by the very frequent vocatives.

Talking about fillers, it must not be forgotten what is filled up, i.e., the left part of the respective pāda. The relevant material is too rich and variegated to be discussed in detail, but as a general observation one can safely say that fillers in the full sense, e.g., vocatives, have no influence whatsoever on the preceding part of the verse. In most verses where they appear the fillers could be removed and completely acceptable sentences in a kind of rhythmical prose would be obtained. This can be demonstrated particularly well with the help of verses that contain multiple fillers.[108] Such ślokas are not rare at all — there are 63 verses with three vocatives and no less than 1,310 which contain two. One of the three-vocative ślokas may be quoted by way of example:

**Q29** 03,027.009

*idaṃ tu vacanaṃ pārtha śṛṇv ekāgramanā mama /*
*bhrātṛbhiḥ saha kaunteya yat tvāṃ vakṣyāmi kaurava //*

"Now listen intently, O Pārtha, to this word of mine, you and your brothers, scion of Kuru and Kuntī, which I shall speak to you" (tr. van Buitenen).

108 Vasiľkov served as an inspiration here by quoting the verse 08,011.037 which contains two vocatives and the adverb *tūrṇam* that can also be regarded as a filler (1973, p. 11).

It is a question of interpretation in each case if such heavy use of vocatives should be attributed to clumsiness on the part of the poet[109] or if it serves some specific function, e.g., intensity of address. Be that as it may, similar verses are objectively unusual and it may therefore be useful for students of the *Mbh* to have a full list of three-vocative ślokas at their disposition, so it is given as appendix A7 (even a first glance shows that they are very unevenly distributed and may therefore be specific for certain authors, etc.).

## 3.3 Templates

There are a few groups of formulaic structures, with one or more fixed and one or more variable elements, which may be fittingly called "formulaic templates"[110] because the stable elements leave "slots" that can only be filled by elements that meet certain syntactic, semantic and metrical requirements. They may be divided into a simple and a complex type.

### 3.3.1 Simple templates

A template will be classified as simple if the variable element consists of only one word (not counting particles) and the whole combination has the length of one pāda. The fixed element normally is located at the end of a pāda, like in the following example, which was taken from BIDNUR 2009 where in ch. 4 (pp. 137–230) "grammatical substitution systems" are analysed. These are understood as classes of syntactic units with a fixed part and variably substituted parts (see above p. 53). Here, the fixed part is the absolutive $^{5}$*puraskṛtya*, the variable part is an acc. form of a tetrasyllabic name. The most frequently occurring names can be found in T40.

109 Please note the little trick by which the translator elegantly transformed the two vocatives *kaunteya* and *kaurava* into one phrase: "scion of Kuru and Kuntī" — probably a sign that addressing the same person thrice in one English sentence seemed stylistically unacceptable to van Buitenen.

110 This seems to be close to what Smith has in mind speaking of a "matrix" (see above p. 52).

**T40.** Example of simple template

| Acc. of 4-syll. name + $^{5}$*puraskṛtya* | |
|---|---|
| Name | Freq. |
| *dhṛtarāṣṭraṃ* | 10 |
| *śikhaṇḍinaṃ* | 10 |
| *kṣatradharmaṃ* | 8 |
| *vāsudevaṃ* | 3 |
| *abhimanyuṃ* | 2 |
| other name* | 32 |

*5 other names occur twice and 22 names once.

Such an understanding of "grammatical substitution systems" is however too wide and therefore leads to undesirable results. This becomes particularly clear where Bidnur uses adjectival forms as the basis of her systems, e.g., the genitive form *dhīmataḥ;* here, the abstract form of the system would be something like "Gen. of. 4-syll. name ending in -*asya* + $^{5}$*dhīmataḥ*", with instances like *kururājasya dhīmataḥ*. Though the situation may in principle be described in such a manner, it would be much more appropriate to say that *kururājasya* is the base word and *dhīmataḥ* is merely an epithet that might as well be absent or be substituted by another fitting adjective. So, in order to avoid such artefacts as a $^{5}$*dhīmataḥ*-system the condition should be added that the fixed element must be in some way (syntactically, semantically, or rhetorically) be basic. Only a few of Bidnur's substitution systems meet this criterion, therefore her analysis is of limited use. Generally, however, there are quite a lot of simple templates, most of them based on a verb form, either absolutive (e.g., $^{6}$*utsṛjya*) or finite (e.g., $^{5}$*avāpnoti*).

## 3.3.2 Complex templates

One example of a complex template has been pointed out by Vasiľkov:[111] the introductions of dialogues mostly to be found after stereotyped announcements of "old stories". The first verse of this kind appears in the *Sabhāparvan*:

111 See Vasiľkov 1973, p. 14–15.

**Q30** 02,061.058
*atrāpy udāharantīmam itihāsaṃ purātanam /*
*prahlādasya ca saṃvādaṃ muner āṅgirasasya ca //*

"On this they quote this ancient story, the exchange between Prahlāda and the Hermit, Aṅgiras' son" (tr. van Buitenen).

"Titles" of dialogues cognate to the one in pādas *cd* of the quoted śloka occur 74 times in the *Mbh;* 64 times after the same or a very similar announcement to the one made in pādas *ab*, and 10 times after semantically equivalent introductions with a different wording.

The fixed element in all instances is [6]*saṃvādam*,[112] the other main elements can, for most cases, be described in one of the following ways (the double line symbolises the pāda boundary):

### *Saṃvāda* template, type I: 60 instances

Example: Q30cd

| | | |
|---|---|---|
| name of first interlocutor (gen.) | *saṃvāda(m\|ṃ)* | name of second interlocutor (gen. or instr.) |

**Fig. 18.** *Saṃvāda* template: type I

### *Saṃvāda* template, type II: 7 instances

Example:
**Q31** 12,173.004cd *indra-kāśyapa-saṃvādaṃ tan nibodha yudhiṣṭhira.*

| | | |
|---|---|---|
| names of first and second interlocutor (compound) | *-saṃvāda(m\|ṃ)* | new sentence |

**Fig. 19.** *Saṃvāda* template: type II

However, from the point of view of versification these schemas are quite insufficient because they do not take into account the length and metrical structure of the names of the two interlocutors.

112 There is also a small subgroup of 6 verses where pāda *c* starts with [1]*saṃvādam* but these will be left out of consideration.

As far as pāda *c* is concerned, the following two rules can account for the vast majority of cases:

- *Rule 1:* Where the genitive of the first name[113] is either a tetra- or pentasyllabic form or a trisyllabic masc. plural or fem. singular form, type I is used; in the case of tri- and tetrasyllabic forms two/one free syllable(s) consequently appear that are always filled with *caiva* or *ca,* respectively (just as in Q30).
- *Rule 2:* Where the genitive of the first name would be trisyllabic and this name is masculine, an octosyllabic compound of the type name$_1$-name$_2$-*saṃvādam* according to type II is constructed.

There are only three lines that do not fit into this picture:

**Q32** 13,102.003cd *nahuṣaṃ prati saṃvādam agastyasya bhṛgos tathā.*
**Q33** 12,338.008cd *brahmaṇā saha saṃvādaṃ tryambakasya viśāṃ pate.*
**Q34** 12,011.001cd*tāpasaiḥ saha saṃvādaṃ śakrasya bharatarṣabha.*

In all of these cases metrically possible alternatives for the first pāda according to the above rules could be constructed:

- **nahuṣasya ca saṃvādam*;
- **brahma-tryambaka-saṃvādaṃ;*
- **tāpasānāṃ ca saṃvādaṃ.*

For the first irregularity no motivation is visible; *nahuṣyasya ca saṃvādam* is actually a variant reading of several manuscripts and also found in 13,050.002cd. The other two might be to some degree explained by the fact that the alternatives do not entirely fit into the standard pattern, in the sense that there are almost no other examples of nouns belonging to the *-an* declension and there is no tetrasyllabic masculine genitive plural form.

Next there are three special cases with unique solutions. All of these are clearly motivated by the fact that the genitive forms of the first names would be disyllabic and so do not fit into the rules just formulated:

113 Theoretically the order of the names could be reversed before the start of the versification process or synonyms could be used, but we take the actual names in the actual order used as our point of departure.

**Q35** 12,169.002cd *pituḥ putreṇa saṃvādaṃ tan nibodha yudhiṣṭhira.*
**Q36** 12,221.003cd *śriyā śakrasya saṃvādaṃ tan nibodha yudhiṣṭhira.*
**Q37** 13,081.002cd *gobhir nṛpeha saṃvādaṃ śriyā bharatasattama.*

Lastly, one exceptional hemistich with a gen. dual has to be noted:

**Q38** 14,020.001cd *daṃpatyoḥ pārtha saṃvādam abhayaṃ nāma nāmataḥ.*

Coming now to the second pāda, the situation of type I is in most instances quite simple. The regular solutions for the names of the second interlocutor depend entirely on the length of the genitive forms and can be presented as follows:

**T41.** *Saṃvāda* template: first pāda

| No. of syll. | Description | Examples |
|---|---|---|
| 2 | name (gen.) + *caiva* + filler** | 12,037.003d *manoś caiva prajāpateḥ* |
| 3 | name (gen.) + *ca* + filler | 05,131.001d *putrasya ca paraṃtapa* |
| 4 | name (gen.) + *ca* + filler | 12,298.003d *janakasya ca bhārata* |
| 5 | name (gen.) + *cobhayoḥ* | 12,123.010d *aṇgāriṣṭhasya cobhayoḥ* |
| 7* | name (gen.) + *ca* | 02,061.058d *muner āṅgirasasya ca* |
| 8 | name (gen.) | 13,038.002d *puṃścalyā pañcacūḍayā* |

* Combinations of name + epithet are treated as one unit.
** "Filler" here includes non-necessary attributes.

The above table accounts for 56 lines. The 4 remaining lines (05,036.001d; 12,136.018d; 12,139.012d; 12,223.002d) need not be discussed for the present purposes. Also the sentences in the second pāda of type II will not be treated.

It seems that complex templates do not play a major role in epic versification. As a rule, the versification process of units that exceed the length of one pāda are more flexible, as will be shown in section 3.7.

## 3.4 Variations

Before coming to additional mechanisms of versification, it will be necessary to discuss groups of formulaic material that bear a certain similarity both to formulaic templates and to the structures to be analysed

in the following sections but should not be confounded with either of them. The discussion will focus on a group of lines that has at least twice been discussed in connection with formulaic language in the Indian epics but in a somewhat different perspective:[114] the standard introduction to battles. Fights and battles are often introduced by a line similar to the following one:

**Q39** 06,050.009ab *tataḥ pravavṛte yuddhaṃ ghorarūpaṃ bhayānakam*

But as a matter of fact the quoted hemistich in exactly the same form occurs only twice. Much more often lines are used that only resemble it. A rough search for only for the first pāda yields the rather long list in T42.[115] To be sure, not all of these hemistichs can be regarded as close parallels, but they certainly show a clear family resemblance. At first sight the situation looks similar to the *saṃvāda* group in the previous section, with one stable word at the end of the pāda and the rest consisting of various elements; but on closer inspection it becomes obvious that the two cases are markedly different. Firstly, with the *saṃvāda* template the possibilities for filling the open slots were quite rigidly regulated; no regulation of that kind is discernible in the above list. At most one can say that normally at least either a particle or a pronoun and a verbal element are present, sometimes also an adjective; but the sheer variety of these elements makes the formulation of any rule futile. Secondly, all of the realisations of the *saṃvada* template are different, which is natural because the very point of a formulaic template for an epic poet is to have one structure that can be used for organising different elements (typically, as in the case of dialogues, the names of persons). In contrast, among the battle introductions we clearly have two main versions (at the top of the list) that are much more frequent than the other ones. Considering these two points it would be certainly wrong to classify groups of similar pādas or verses of the *yuddham* type as templates. Rather one might speak of "variations" on a limited number of "themes", i.e., prototypes — though the reason for these variations are probably variegated, e.g., purposeful literary creations, adaptati-

114 See Vasiľkov 1973, pp. 18–20; Ingalls 1991, pp. 27–28.

115 Included are only those hemistichs with *yuddham* at the end. Besides there is also a number of similar, but thematically more distant lines of the type *tasyāṃ samabhavat putro*.

ons to special contexts or mere memory effects, but this must be investigated for each case individually. So, while it is quite correct to say that *saṃvādam* functions as a kind of central organising element for the whole group of verses connected with it, *yuddham* is a "supporting word"[116] only in the statistical sense of being the most frequent element in the group, but otherwise it is more appropriate to regard whole prototypes as fundamental elements.

**T42.** Battle introductions

| Battle introduction | Freq. | Battle introduction | Freq. |
|---|---|---|---|
| *tataḥ pravavṛte yuddham** | 37 | *sumuhūrtam abhūd yuddham* | 1 |
| *tayoḥ samabhavad yuddham* | 17 | *sumuhūrtaṃ mahad yuddham* | 1 |
| *tataḥ samabhavad yuddham* | 11 | *tad āsīt sumahad yuddham* | 1 |
| *evaṃ tad abhavad yuddham* | 5 | *tasya tair abhavad yuddham* | 1 |
| *tataḥ sutumulaṃ yuddham* | 3 | *tatas tad abhavad yuddham* | 1 |
| *tatrāsīt sumahad yuddham* | 3 | *tato 'bhavan mahad yuddham* | 1 |
| *atitīvram abhūd yuddham* | 2 | *tatrāpi sumahad yuddham* | 1 |
| *tad adbhutam abhūd yuddham* | 2 | *tatrāścaryam abhūd yuddham* | 1 |
| *tathā tad abhavad yuddham* | 2 | *tayoḥ pratibhayaṃ yuddham* | 1 |
| *tayos tad abhavad yuddham* | 2 | *tayoḥ sutumulaṃ yuddham* | 1 |
| *yathā tad abhavad yuddham* | 2 | *tayor dve divase yuddham* | 1 |
| *arjunena samaṃ yuddham* | 1 | *tayos tasya ca tad yuddham* | 1 |
| *evaṃ citram abhūd yuddham* | 1 | *teṣāṃ samabhavad yuddham* | 1 |
| *evam etan mahad yuddham* | 1 | *teṣāṃ tad abhavad yuddham* | 1 |
| *keśākeśy abhavad yuddham* | 1 | *trigartair abhavad yuddham* | 1 |
| *kīdṛśaṃ cābhavad yuddham* | 1 | *yathā caivābhavad yuddham* | 1 |
| *nirmaryādaṃ mahad yuddham* | 1 | *yatrāsya sumahad yuddham* | 1 |
| *saindhavair abhavad yuddham* | 1 | | |

*-*m* at the end of a pāda represents both -*m* and -*ṃ*.

116 See Vasiľkov 1973, p. 19.

## 3.5 Formulaic flexibility

One of the biggest group of nearly synonymous phrases in the *Mbh* are speech introductions[117] with the general schema:

*(A)* said (the following thing) (to *B)*.

From the point of view of formulaic analysis they are particularly interesting because very often they are used together with proper names, i.e. with fixed elements,[118] in the space of one single pāda. In order for this to be possible at all, the formulaic diction must enable the poet to react with considerable flexibility because the speech introduction has to fit to the name in question, both with respect to the number and to the quality of syllables.

The following tables (T43 and T44) give a comprehensive overview of all expressions of this type that do not exceed the length of one pāda or cross a pāda boundary;[119] frequent words or combinations of words that precede or follow a specific expression have been added, and the numbers of occurrences are recorded in parentheses.

Without going into too much detail here, one can certainly say that the set of speech introductions displayed in T43 and T44 possesses clear features of a Parryan system: there are items of different length which thus leave slots for subject or direct object represented by names with a different number of syllables; in some cases both subject and direct object are to be found in comparable frequencies, in other cases one of these two is used much more often or even exclusively. But it must be added that this system is very far from being a rigid one. Firstly, apart from names in the subject or object role, in most instances the slots can be filled with one or more elements of different types, e.g., adverbs, pronouns or particles. Secondly, the system is not entirely "thrifty" in the sense that there are equivalent speech introductions leaving slots of the same type. Exactly how many such doublets should count as "equivalent" is not

117 For the similar, though not identical, *Rm* evidence see BROCKINGTON 1970, pp. 216–219.

118 See above fn. 113.

119 The following cases of inter-pāda combinations can be observed ("|" symbolises the pāda boundary): *vākyam | idam; idaṃ vākyam | abravīt; idaṃ vākyam | uvāca; (praty)uvācedaṃ | vacanam*.

easy to say because in most cases there are at least slight differences. E.g., [12]*vākyam abravīt* and [12]*idam abravīt* must be distinguished in spite of the fact that they are semantically and metrically equivalent because of the important prosodic difference that the first combination starts with a consonant and the second one with a vowel, which can have metrical consequences for preceding words. The closest candidates for real doublets are probably the expressions [12]*vacanam abravīt* and [12]*vākyam uvāca ha*; other such pairs must rather be seen as borderline cases. However, the listed expressions certainly do not form an ideally economic Parryan system, but as has already been observed the formulaic language of the *Mbh* permits a considerable amount of richness or variation in this respect (see above section 3.1). From the standpoint of orthodox Parryists this would imply a non-oral character of the *Mbh* but it is doubtful if the criterion of "thrift" can be used in such a simple way (cf. FRIEDRICH 2007). In view of the many "systemic" features that groups of functionally equivalent or close expressions like the speech introductions in the *Mbh* do nevertheless undoubtably exhibit, one should perhaps regard the aspect of thrift as a secondary one and simply speak of systems with a larger or smaller degree of thrift. The typical Homeric ones would then belong to the former, the *Mahābhāratan* ones to the latter group.

**T43.** Speech introductions (odd pādas)

<table>
<tr><td colspan="8">Syllable</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td colspan="3">abravīt (71)*</td><td>ca (20)</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">so ’bravīt (7)</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3" rowspan="4">uvāca (248)</td><td colspan="2">cainam (23)</td><td colspan="3">3-syll. nom. (13)</td></tr>
<tr><td colspan="2">vākyam (10)</td><td colspan="3">3-syll. nom. (6)</td></tr>
<tr><td colspan="3">vacanam (17)</td><td></td><td></td></tr>
<tr><td colspan="5">ślakṣṇayā vācā (10)</td></tr>
<tr><td colspan="4" rowspan="2">tam uvāca (46)</td><td colspan="4">4-syll. nom. (16)</td></tr>
<tr><td colspan="2">tataḥ (15)<br>tadā (1)</td><td colspan="2">2-syll. nom. (11)</td></tr>
<tr><td colspan="4" rowspan="2">tato ’bravīt (57)</td><td colspan="4">4-syll. nom. (34)</td></tr>
<tr><td colspan="4">4-syll. acc. (4)</td></tr>
<tr><td colspan="4">tam abravīt (22)</td><td colspan="2">tataḥ (5)<br>tadā (3)</td><td colspan="2">2-syll. nom. (8)</td></tr>
<tr><td colspan="4">tān uvāca (12)</td><td colspan="4">4-syll. nom. (9)</td></tr>
<tr><td colspan="5">tam uvācātha (10)</td><td colspan="3">3-syll. nom (9)</td></tr>
<tr><td colspan="5">tataḥ provāca (8)</td><td></td><td></td></tr>
<tr><td colspan="6">uvācedaṃ vacaḥ (7)</td><td></td><td></td></tr>
<tr><td colspan="2">tato (12)</td><td>mām (22)</td><td colspan="3" rowspan="3">abravīt (134)</td><td colspan="2">rajan (13)</td></tr>
<tr><td colspan="2">maivam (8)</td><td>ity (15)</td><td colspan="2">rājā (10)</td></tr>
<tr><td colspan="3">athainam (8)</td><td colspan="2">vākyam (7)</td></tr>
<tr><td colspan="4">4-syll. nom. (15)</td><td>’bravīt (52)</td><td colspan="2">vākyam (6)</td></tr>
</table>

* 8x with [13]*idam vacaḥ.*

**T44.** Speech introductions (even pādas)

<table>
<tr><th colspan="8">Syllable</th></tr>
<tr><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th></tr>
<tr><td colspan="4" rowspan="2">tam uvāca (14)</td><td colspan="4">4-syll. nom. (8)</td></tr>
<tr><td colspan="4">4-syll. acc. (3)</td></tr>
<tr><td colspan="4" rowspan="2">vākyam āha (11)</td><td colspan="4">4-syll. nom. (4)</td></tr>
<tr><td colspan="4">4-syll. acc. (2)</td></tr>
<tr><td colspan="4" rowspan="2">idam āha (11)***</td><td colspan="4">4-syll. nom. (2)</td></tr>
<tr><td colspan="4">4-syll. acc. (3)</td></tr>
<tr><td colspan="4">4-syll. acc. (20)</td><td colspan="4">’bravīd idam (32)</td></tr>
<tr><td colspan="3">(a)bhyetya (4)</td><td colspan="5">vaco ’bravīt (11)</td></tr>
<tr><td colspan="4">tato ’bravīt (8)</td><td colspan="4"></td></tr>
<tr><td colspan="4">4-syll. acc. (23)</td><td colspan="4">uvāca ha (105)</td></tr>
<tr><td colspan="4">jagāda ha (5)**</td><td colspan="4"></td></tr>
<tr><td colspan="4">4-syll. acc. (32)</td><td colspan="4" rowspan="2">idaṃ vacaḥ*</td></tr>
<tr><td colspan="4">4-syll. adj. (24)</td></tr>
<tr><td colspan="3">3-syll. acc. (42)</td><td colspan="5" rowspan="2">vākyam abravīt (107)</td></tr>
<tr><td colspan="3">3-syll. nom. (26)</td></tr>
<tr><td colspan="3">3-syll. acc. (39)</td><td colspan="5" rowspan="2">idam abravīt (87)</td></tr>
<tr><td colspan="3">prahasann (9)</td></tr>
<tr><td colspan="3"></td><td colspan="5">punar abravīt (15)</td></tr>
<tr><td colspan="3">vacanaṃ (9)</td><td colspan="5">cedam abravīt (22)</td></tr>
<tr><td colspan="2">idaṃ (102)</td><td colspan="6" rowspan="2">vacanam abravīt (195)</td></tr>
<tr><td colspan="2">tato (15)</td></tr>
<tr><td colspan="2"></td><td colspan="6">vākyam athābravīt (11)</td></tr>
<tr><td colspan="2"></td><td colspan="6">vākyam uvāca ha (8)</td></tr>
<tr><td colspan="8">punar evedam abravīt (7)</td></tr>
<tr><td colspan="8">vākyaṃ cedam uvāca ha (7)</td></tr>
</table>

* In two thirds of hemistichs preceded by a speech verb in the odd pāda.
** 2x *gāthām,* 1x *ślokam,* hence in these cases rather in the sense of “recite”.
*** 4x *vākyam | idam* (see fn. 119)

## 3.6 Crystallisation and semantic forking

Statistics about the frequencies of certain formulaic structures and the like evidently first of all refer to a static entity: the text established by the editors of the Critical Edition of the *Mbh.* At the same time the verses of this text are the products of a dynamic process of versification, and this process leaves structural traces — at least this is the most natural way to explain the findings presented in the preceding subsections. In the following sections another group of structural features, which are connected to the phenomenon of affinity, are interpreted dynamically from the point of view of versification. We may start with having a look at the continuations which can be found in lines starting with the nominative of the name *duryodhana* followed by the frequent particle *tu:*

**T45.** Continuations of [1]*duryodhanas tu*

| Base phrase | Freq. | Continuation | Freq. |
|---|---|---|---|
| [1]*duryodhanas tu* | 23 | *saṃkruddho* | 3 |
| | | *ta(c\|t)* | 3 |
| | | *samare*$_{vip}$ | 2 |
| | | *saṃprekṣya* | 2 |
| | | *bhīmasya* | 1 |
| | | *daśabhir*$_{vip}$ | 1 |
| | | *dṛṣṭvā* | 1 |
| | | *dviradam*$_{vip}$ | 1 |
| | | *karṇena* | 1 |
| | | *kauravyo* | 1 |
| | | *nṛpatir*$_{vip}$ | 1 |
| | | *pitaraṃ*$_{vip}$ | 1 |
| | | *rājānaṃ* | 1 |
| | | *tāṃ* | 1 |
| | | *tān* | 1 |
| | | *virathaḥ*$_{vip}$ | 1 |
| | | *śibiraṃ*$_{vip}$ | 1 |

Among the continuations we find not only many different words, but also a whole range of different classes of words: nouns and adjectives in several cases, pronouns, and an absolutive. In sum, one may safely say that the set of pādas displayed in T45 is quite far from exhibiting a formulaic structure.

The following table of the same kind, showing the continuations of the line start *tam āpatanta(m|ṃ)* presents a markedly different picture:

**T46.** Continuations of [1]*tam āpatanta*(*m*|*ṃ*)

| Base phrase | Freq. | Continuation | Freq. |
|---|---|---|---|
| [1]*tam āpatanta(m|ṃ)* | 67 | *saṃprekṣya* | 27 |
| | | *sahasā*$_{vip}$ | 17 |
| | | *vegena* | 9 |
| | | *dṛṣṭvaiva* | 2 |
| | | *udvīkṣya* | 1 |
| | | *saṃkruddhaṃ* | 2 |
| | | *saṃrabdhaṃ* | 1 |
| | | *dviradaṃ*$_{vip}$ | 1 |
| | | *mahiṣaṃ*$_{vip}$ | 1 |
| | | *mātaṅgam* | 1 |
| | | *parighaṃ*$_{vip}$ | 1 |
| | | *viśikhaṃ*$_{vip}$ | 1 |
| | | *viśikhaiḥ*$_{vip}$ | 1 |
| | | *pattyaśvaiḥ* | 1 |
| | | *samare*$_{vip}$ | 1 |

Here we clearly see that the affinity of the initial phrase with regard to the first two continuations, *saṃprekṣya* and *sahasā,* is considerable; what is more, the words *dṛṣṭvaiva, udvīkṣya* and *vegena,* that are semantically close to the first and the last of them respectively, can be regarded as variations. Apart from these we have a number of variegated sporadic continuations.

An even higher affinity value (0.69 with regard to *sahasā* as the clearly predominant variant) can be found in the feminine version of the former line start:

**T47.** Continuations of [1]*tām āpatantī(m|ṃ)*

| Base phrase | Freq. | Continuation | Freq. |
|---|---|---|---|
| [1]*tām āpatantī(m|ṃ)* | 32 | *sahasā*$_{vip}$ | 22 |
| | | *saṃprekṣya* | 3 |
| | | *ciccheda* | 2 |
| | | *dṛṣṭvaiva* | 1 |
| | | *jagrāha* | 1 |
| | | *samare*$_{vip}$ | 1 |
| | | *vegena* | 1 |
| | | *vimalām*$_{vip}$ | 1 |

The above three groups of pādas were chosen to illustrate typical situations of weak, middle and strong affinity, because it will be suggested that one of the mechanisms that produced such strongly different affinity patterns was a development leading from the first over the second to the third type. It might be called "crystallisation" because it consists in the strengthening of the association of a basic element with one or more preceding or following elements. When such an association becomes strong and fixed, a new formulaic "crystal" has formed in that "solution" of word elements, i.e., in the living epic language. In order to prove the existence of this hypothetical process one would need to be able to compare several thematically close epic passages that originated at different points in time; unfortunately the nature of the accessible texts makes such an approach practically impossible. Still, crystallisation seems to be the natural outcome of the facts that (1) certain words are likely to be connected because of their semantic content (2) of which only some can be actually combined because of their metrical shape, and (3) the basic psychological mechanisms of association tend to further strengthen connections that are already established. This is not to be understood in such a way that in all cases we have a development from situations like in T45 to such as in T46 and ending in those of the T47 type. Rather this line gives only the general *direction*, the concrete development in each single case depends on many factors, so that a situation like T45 may well be temporarily stable in the sense of representing a dynamic equilibrium. The nature of the evidence makes these deliberations to a certain extent speculative, but it can be assumed with a

measure of probability that some crystallisation process was of importance for the development of the epic formulaic language.

Following this, so to speak, diachronic interpretation of affinity differences, like the ones presented above, a special type that deserves to be highlighted can be discerned. Sometimes the base elements are followed (or preceded) by continuations that lead to sentences of a completely different structure. Here one may speak of "syntactic forking". An example of this phenomenon can be seen in table T48.

The words following [1]*evam ukt(as|ā) tu* that in most cases are trisyllabic and so fill up the pāda, can, from a syntactic point of view, be divided into two main groups: nouns (or pronouns) in the instrumental case which supply the logical subject of the act of speaking, and nouns (or pronouns) in the nominative case giving the logical object. The eleven continuations belonging to neither group or providing both syntactic elements at the same time can be set aside here, though they may be of interest in other contexts. Among the instrumentals the most frequent option (10 words with 34 occ.) is a masculine singular of the *a*-declension which produces the standard metrical pattern (i.e., – –) in syllables 6 and 7, the predominant ones being the names of the main heroes: *pārthena, karṇena, kṛṣṇena*. Apart from these, the two feminine nouns *suśroṇyā* (1x) and *vaidarbhyā* (3x) also give the same metrical pattern. In addition, there is a smaller group of miscellaneous continuations yielding the same syntactic structure but differing in other aspects: adjectives, pronoun and noun combinations, nouns in the plural, and words producing a *vipulā* pattern. The second group, which consists of nominatives, is more homogeneous: here we have $15_{25}$ words yielding a *pāthya* pattern, and $5_{9}$ producing a *vipulā*; in addition there are $2_{5}$ combinations of the type pronoun + noun. Looking at the two branches of the semantic bifurcation separately, it can be noticed that they show slightly different affinity patterns, which is to be expected because there is no reason why the branches should not develop independently. Thus the phenomenon of semantic forking is yet one more feature of the epic formulaic diction that enhances its flexibility and thus helps the poet to express the ideas he has in mind with a considerable amount of freedom.

**T48.** Continuations of [1]*evam ukt(as|ā) tu*

| Continuation | Fr. | Continuation | Fr. | Continuation | Fr. |
|---|---|---|---|---|---|
| Noun | | | | Others | |
| Instrumental | | Nominative | | Adverb | |
| *pārthena* | 8 | *kauntey(aḥ\|o)* | 4 | *savrīḍaṃ* | 1 |
| *karṇena* | 7 | *dharmātmā* | 3 | Vocative | |
| *kṛṣṇena* | 6 | *rādhey(aḥ\|as\|o)* | 3 | *rājendra* | 1 |
| *bhīmena* | 3 | *gāṅgey(aḥ\|as)* | 3 | *kaunteya* | 1 |
| *śakreṇa* | 3 | *dāśārhaḥ* | 2 | Locative | |
| *bhīṣmeṇa* | 2 | *daityendro* | 1 | *samare*$_{vip}$ | 1 |
| *vipreṇa* | 2 | *devendras* | 1 | *Miscellaneous* | |
| *rāmeṇa* | 1 | *deveśo* | 1 | *sā tena* | 2 |
| *śarveṇa* | 1 | *duṣṭātmā* | 1 | *sa mayā* | 1 |
| *dhaumyena* | 1 | *viprendro* | 1 | *rājñā sa* | 3 |
| *putreṇa* | 1 | *gandharvaḥ* | 1 | *tenāsau* | 1 |
| *haṃsena* | 1 | *govindo* | 1 | *taṃ droṇo* | 1 |
| *muninā*$_{vip}$ | 1 | *mārjāro* | 1 | *sā vipraṃ* | 1 |
| *bhṛguṇā*$_{vip}$ | 1 | *nahuṣaḥ* | 1 | | |
| *kalinā*$_{vip}$ | 1 | *saṃkruddhaḥ* | 1 | | |
| *suśroṇyā* (f.) | 1 | *vimanās*$_{vip}$ | 1 | | |
| *vaidarbhyā* (f.) | 4 | *bhagavān*$_{vip}$ | 3 | | |
| *pṛthayā*$_{vip}$ (f.) | 1 | *vidur(aḥ\|o)*$_{vip}$ | 2 | | |
| *gandharvaiḥ* (m. pl.) | 1 | *nṛpati(ḥ\|r)*$_{vip}$ | 2 | | |
| *sahitais*$_{vip}$ (m. pl.) | 1 | *hanumān*$_{vip}$ | 1 | | |
| Pronoun + noun | | | | | |
| *taiḥ śūraiḥ* | 1 | *rājā sa* | 1 | | |
| *tair viprair* | 1 | *sa muni(ḥ\|r)* | 2 | | |
| | | *sā devī* (f.) | 4 | | |
| Total | 49 | | 41 | | 13 |

## 3.7 A stepwise approach to versification

The formulaic structures analysed so far are of a rather rigid type in so far as they are either constructed of given elements or have the form of templates with fixed elements in which slots of a predefined length and type must be filled. Such items are comparatively easy to identify and to handle for the modern scholar because of the very fact that they contain at least some stable surface structure elements; but they do not cover the entire range of "formulaic diction". Reading certain passages of the *Mbh*, e.g., many battle descriptions, a strong impression is gained of a highly formulaic language without always being able to identify recurring structures of the sorts just mentioned. This is because in the *Mbh* certain formulaic mechanisms work in a more flexible way and are therefore hard to capture by only looking at surface structures. So other ways must be tried. In this section a stepwise approach will be applied that is strongly inspired by the Homeric scholar Edzard Visser who worked on verses of the Iliad that describe the killing of one hero by another (Visser 1987). He calls his model "generativ" but at the same time underscoring that it has nothing to do with the approaches of Nagler or Kiparsky (ibid., p. 26). This is probably exaggerated, but at any rate what he does is not generative grammar in the Chomskian sense, so that it seems better to avoid the term altogether. Here the simple adjective "stepwise" will be used, for the general idea of Visser's model is to treat versification in a step-by-step manner. At the beginning of the process stands a vague initial idea that successively "takes shape" and so evolves into a concrete sentence. The first elements whose position has to be determined are those that are both essential and fixed (e.g., proper names if we want to talk about certain persons). Next come elements that are essential, but may be realised by semantically equivalent words. The third group of elements consists of such words that may optionally be added to the essential ones — e.g., in order to characterise a person or to achieve a certain number of syllables — but are not necessary to express the initial idea. The model summarised in the following schema is basically a modified adaptation of the one described in section I.2 of Visser 1987.

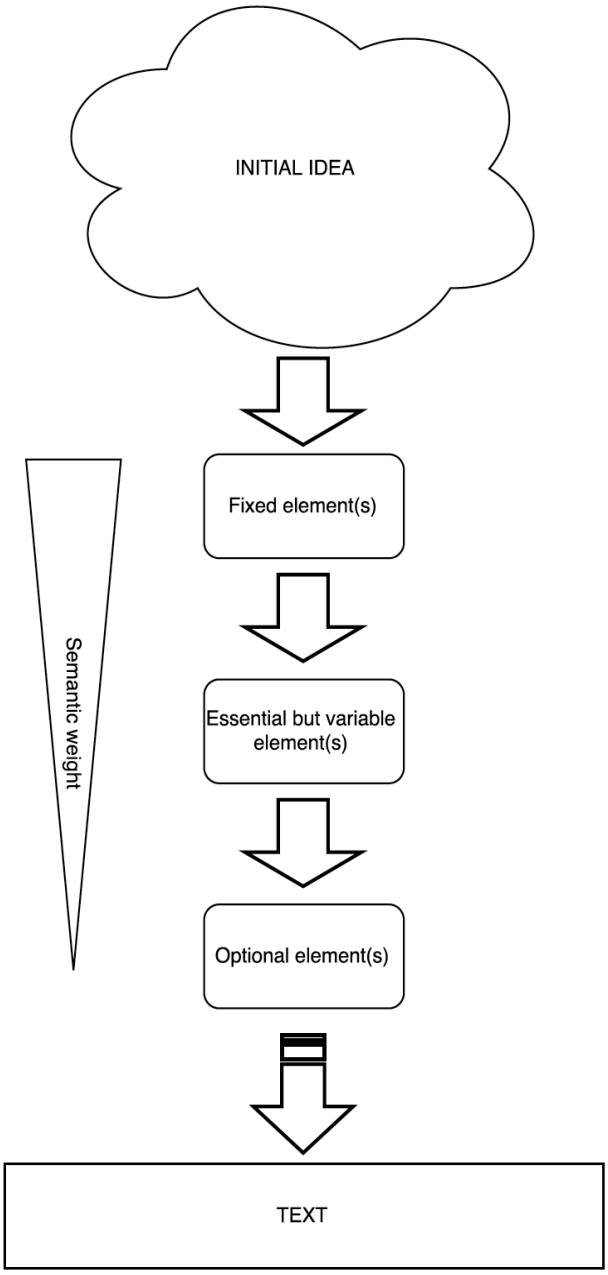


**Fig. 20.** Stepwise model of versification

My addition to Visser's model consists in the notion of "semantic weight", symbolised by the triangle on the left side.[120] As already mentioned above (see fn. 104), this notion is meant to capture the phenomenon that all the elements of a sentence have semantic content, but the weight of this content in a particular context may vary greatly. E.g., in the hemistich,

**Q40** 06,078.014ab *bhāradvājas tu samare matsyaṃ vivyādha patriṇā,*

"In the Battle Bhāradvāja hit Matsya with a feathered arrow",

the names of the attacker and the attacked are of the highest importance, whereas the information that the action takes place "in the battle" carries practically no weight because it is an obvious fact anyway.

### 3.7.1 Epic frames, on the example of *A* HIT *B*

The model as presented is still very general and so of little practical use. It can be applied however when separately investigating concrete groups of verses that are connected by expressing the same or closely similar ideas in such a way that several elements (including the word order) vary in multiple though not completely unregulated ways. As the relation of the initial idea to its poetic realisation bears a certain resemblance to the way frame semantics is used in construction grammars,[121] the whole structure linking the initial idea and its metrically correct realisations will be called an "epic frame". The high degree of variety that is to be found in groups of this kind makes it rather difficult to detect, to analyse and to describe epic frames.

One such an attempt will nevertheless be undertaken in the present section. In particular, an investigation into how the word order in sentences belonging to the frame in question varies depending on other factors. The frame was chosen according to the following criteria:

120 To a certain extent this concept is equivalent to Bakker's and Fabricotti's distinction of nuclear and peripheral semantics (1991).

121 Apart from Visser 1987 and Bakker & Fabricotti 1991 the following studies that apply cognate approaches in formulaic research must also be mentioned: Miller 1987, Buzzone 2011, and Buzzone 2014.

1) The number of the relevant verses must be large enough to allow for meaningful statistics and extrapolations.
2) The idea must be simple and well-defined, yet include a certain number of variations.

The two kinds of action most often performed in epic poems are probably talking and fighting, so it seems to be a good idea to look in this direction. Expressions for speaking are less well suited, because they tend to be rather short and mostly consist of inflexible formulas (see above section 3.5). More useful material can be found in fighting scenes, where the action of shooting is often expressed by sentences extending over a whole śloka that show a considerable amount of flexibility and variation.[122] Therefore the simplest and most common of epic frames concerned with fighting will be concentrated on. In its general form it is used to express the fact that one fighter engaged another with arrows, schematically:

*A* HIT *B*

In a shorthand fashion it will be referred to as "the *A*-HIT-*B* frame". As the use of the singular makes clear, no attacks by or on groups of warriors will be taken into account, nor shots at horses or elephants.

As can easily be seen, in this frame there are three essential elements; in most cases these are syntactically represented by a subject (S), a direct object (O) and a finite verb (V). In addition, in most sentences one or more optional elements are found. The following śloka may serve as a typical example of the kind of verses this analysis has been conducted on:

**Q41** 06,051.009
*dauryodhanis tu saṃkruddhaḥ saubhadraṃ navabhiḥ śaraiḥ /*
*vivyādha samare rājaṃs tad adbhutam ivābhavat //*

122 Cf. VON SIMSON 1974, pp. 152–177 for a discussion of duels from a literary standpoint as "typical scenes".

> "Enraged, the son of Duryodhana (= Lakṣmaṇa) hit the son of Subhadrā (Abhimanyu) with nine arrows, O king, it was like a miracle."

It is no coincidence that similar epic frames also belong to the favourite objects of investigation in studies on Homeric versification because battle scenes are among the most popular topics in both traditions, and the way fights between heroes are depicted is often very stereotyped.[123]

The first step of any analysis based on the model just presented must consist in classifying the elements of the epic frame according to the main categories. (In order to avoid awkward formulations, a somewhat loose language will be adopted with regard to syntactic constituents and elements of the surface structure, e.g., when speaking about "trisyllabic subjects" and the like, but it is hoped that this will not cause any misunderstandings.)

#### 3.7.1.1 Essential and fixed elements

The subject and direct object in *A*-HIT-*B* verses are normally realised by a noun or pronoun in the nominative or accusative case, respectively. So the first choice by the poet must obviously be to decide which heroes will represent the attacker and the target. But very often a second decision is necessary that is based on the fact that one person may usually be referred to by different designations. Arjuna, to give but one example, may be referred to by a pronoun or by the proper name *arjuna*, but also by more than 60 patronymics and nominalised epithets like *pārtha, dhanaṃjaya,* etc., some of which are rare and fit only to specific situations, whereas others are quite common and universally applicable.[124] The reasons for a choice of one among many possible designations cannot always be explained with certainty, but the fact that many of the more often occurring names are highly polarised makes it probable that metrically based versification mechanisms and formulaic patterns play an important role. To give but one example, if we look at two of the most common names for Arjuna, i.e., *arjuna* and *dhanaṃjaya*, their distribution

123 See VISSER 1987, BAKKER & FABRICOTTI 1991, and the studies cited there.

124 See SÖRENSEN 1904, *s.v.* "Arjuna".

over pādas is highly uneven and exactly opposed; accusative and nominative forms of *arjuna* occur 16x in *a*-pādas and only 2x in *b*-pādas of A-HIT-*B* verses, whereas analogue forms of *dhanaṃjaya* are found only once in an *a*-pāda, but 9x in *b*-pādas. These figures strongly suggest that the choice between these two designations of the Pāṇḍava hero is, mostly, not due to different connotations, but to other factors that have to do with the different metrical structure of the words; though not in the direct sense that, e.g., the sandhi form *arjuno* of the nominative could not appear at all in the *b* pāda — because it actually does. To be sure, apart from formal factors there are probably also verses where it was the intention of the author to stress certain aspects of the respective hero which can only be brought out in an interpretation on a case-by-case basis.

But in the context of versification analysis this is not the main point anyway. Rather for this purpose one may simply start from the obvious assumption that in battle descriptions the information of who fights whom is normally the most fundamental one, so that the names containing this information must be a priori be regarded as fixed points of the versification process in relation to all other, more or less secondary elements. Pronouns can in this context be treated as a special class of names, "general names" so to speak.

### 3.7.1.2 Essential and variable elements

The only essential and variable element in our simple epic frame is the finite verb. Several verbs and verb forms are used by the poets, but this variation seems to be only exceptionally prompted by semantic reasons. As a rule they function as contextual synonyms, though generally speaking there are of course semantic differences between the verbs.

The following roots are used in the verses under discussion:

- √*vyadh*, rarely + *ā, abhi, pra*
- √*ṛ*, + *sam*, rarely *abhi*
- √*ard*, + *sam*, rarely *abhi*
- √*taḍ*, + *sam, abhi, vi*
- √*han* + *ā, ni*, much more rarely + *sam, sam-ā, saṃ-ni, abhi*

Those cases where the above verbs mean "to kill" and not just "to hit" were not included in the analysis.[125] This is often the case for unprefixed forms of *√han* and forms of *ni√han* when they are used without information about the weapons used or the place where the victim is hit; also the aorist form *avadhīt* usually refers to a lethal action. In addition there are special expressions for killing: *preṣayad/prāhiṇod/ninye yamasādanam* with the odd-pāda form *prāhiṇon mṛtyulokāya* (see above section 3.1).

Though having a markedly different meaning in itself ("to torment", "to harrass"), the verb

- *√pīḍ*, rarely + *abhi, sam*

will also be treated as a member of the preceding group, because in fighting contexts it acquires the meaning "to torment (with arrows)".

There is another group of verbs that will sometimes appear in the following analyses: one consisting of roots with the general meaning "to shower someone (with arrows)". Though this meaning is clearly different from "to hit" it is in some cases useful to include these "verbs of showering" because they are structurally extremely similar to the verbs of hitting and are used in the same battle contexts in an almost identical way. Here is a list of them:

- *√kṝ*, always + *ava, abhy-ava, pary-ava, sam-ava, sam-ā*
- *√chad*, + *pra, sam, ā*
- *√vṛṣ*, always + *abhi*
- *√ci*, always + *sam-ā*

As just stated, it is assumed that the above verbs, especially those of the first group, function as quasi-synonyms in the context of the *A*-HIT-*B* frame, so that the choice between them is primarily a semantic one but one made in accordance with the requirements of formulaic diction. The usefulness of different equivalent words for a poet becomes apparent in

125 Actually, in most cases hits do not seem to have much effect at all. The question of the (in)effectiveness of arrows is an interesting topic, which cannot be pursued here, however. Some remarks and statistics on this topic can be found in HELLWIG 2010.

the following list of trisyllabic forms of "hitting verbs" together with their metrical patterns. (C and V signify "beginning/ending with a consonant or vowel, respectively" — a crucial feature of a word in the context of versification).

- *vivyādha* $^{C}– \breve{} –^{V}$
- *ānarchat* $^{V}– – \breve{}^{C}$
- *jaghāna* $^{C}\breve{} – \breve{}^{V}$
- *avidhyat* $^{V}\breve{} – \breve{}^{C}$
- *ārpayat* $^{V}– \breve{} \breve{}^{C}$
- *ārdayat* $^{V}– \breve{} \breve{}^{C}$
- *ājaghne* $^{V}– – –^{V}$

Here, we can see that the verbs and verb forms used cover a considerable variety of prosodic patterns, which strengthens the assumption that this multitude of verbs and forms was caused by the metrical milieu in which the authors of the *Mbh* had to work. Moreover, only the very similar forms *ārpayat* and *ārdayat* overlap as to their metrical structure (including the C/V pattern), so this list of verb forms forms an almost ideal Parryan system.

As far as the semantic effect of verbal prefixes are concerned, most of them are quite rare and, therefore, seem to have no systematic significance (*ā-* in *ājaghne* as well as *sam-* in *samarpayat* and *samardayat* being exceptions). It is difficult to determine with certainty if, in a given case, they change the meaning of the base verb strongly enough to break the conceptual synonymy, but my impression is that in the case of rarely used prefixes they often do. This is certainly true for one prefix used more commonly with a range of roots, namely *prati-*. Here it is quite obvious that the resulting verbs may only be used to describe counterstrokes and can function as synonyms of *verba simplicia* only in certain contexts; forms with *prati* were therefore left out of the picture.

It will not be possible to enter into a detailed analysis of how the semantic differences between the verbs listed above might be reflected in some verses. But it is in order to give at least a kind of summary argument in favour of the presupposition of general quasi-synonymy. Here is a list of the frequencies of verb forms belonging to different roots according to their distribution over the four pāda types:

**T49.** Pāda positions of verbs of hitting and showering in the BB

| Verb | *a* | | *b* | | *c* | | *d* | | All pādas | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % |
| √*vyadh* | 35 | 50.7 | 81 | 43.3 | 194 | 39.5 | 160 | 37.5 | 470 | 40 |
| √*han* | 25 | 36.2 | 16 | 8.6 | 175 | 35.6 | 80 | 18.7 | 296 | 25.2 |
| √*ṛ* | 3 | 4.3 | 32 | 17.1 | 22 | 4.5 | 67 | 15.7 | 124 | 10.6 |
| Shower verbs | 3 | 4.3 | 36 | 19.3 | 87 | 17.7 | 75 | 17.6 | 201 | 17.1 |
| √*taḍ* | 1 | 1.4 | 19 | 10.2 | 2 | 0.4 | 28 | 6.6 | 50 | 4.3 |
| √*pīḍ* | 0 | 0 | 3 | 1.6 | 10 | 2 | 16 | 3.7 | 29 | 2.5 |
| All verbs | 67 | 5.9 | 187 | 15.9 | 490 | 41.8 | 426 | 36.4 | 1170 | 100 |

The very fact of marked differences (and preferences) in the distribution of all the groups of verb forms with the exception of those belonging to the root √*vyadh* shows at the very least that the high-level decision of which pāda shall contain the verb does have an influence on the final choice of the verb.

### 3.7.1.3 Optional elements

In sentences exhibiting the *A*-HIT-*B* frame a considerable number of optional elements can be found that sometimes occupy more space than the essential ones. The semantic weight of these additions is mostly rather small, i.e., they are generally only to a limited extent part of the hypothetical initial idea of the poet. The additions may be classified as follows.

*Particles*. The semantic weight of particles cannot be determined in a general way. Whereas some particles are certainly of little weight – like *ha, vai,* or *eva* – others do have specific and important connecting functions. So, e.g., *ca* in an enumeration is normally not optional. Not entirely clear is the status of the particles *tataḥ* and *atha* at the beginning of sentences. They occur frequently, in about one third of *A*-HIT-*B* sentences, and typically signal the beginning of a new action. On the other hand, many comparable sentences start without a particle, so their usage does not seem to be obligatory.

*Information about attacker or target.* Quite often the name of the attacker, the target, or of both, is accompanied by an adjective, a participle, a patronymic or the like. These attributes can roughly be divided into three groups:

- attributes that are more or less exclusively connected to a certain person or the member of a certain group;
- adjectival additions that are used frequently and with different heroes, the prime example being *kruddha*;
- rarely used words.

Generally speaking, the members of the third group tend to have much more semantic weight than those of the other two, especially of the first one.

*Type of missile(s).* As already indicated, the *A*-HIT-*B* frame is restricted to fighting with arrows, as opposed to maces, swords etc. But it must be underscored that in the *Mbh* we often have to deal not with arrows in general, but with specific types of arrows. This may be expressed by special terms, other than the more general *śara* or *bāṇa*, like *nārāca* or *sāyaka*, and by qualifying the arrows with an adjective like *āśuga, viśikha* etc., or by using this adjective as a noun. It can be assumed that in the context of the *A*-HIT-*B* frame most of these expressions are roughly equivalent, but a closer investigation will also show some finer shades.

*Number of missiles.* In addition to the types of missiles their number is also frequently specified. Here we find a wide variety of about 50 expressions (not counting sandhi forms), ranging from one to a thousand, and even to a whole "rain of arrows" *(śaravarṣa)*. These elements make up such a big part of so many *A*-HIT-*B* sentences that a detailed analysis will be devoted to them (see section 3.7.2.2.3).

*Place of hit.* Sometimes the precise area is indicated where an arrow has struck the body of an attacked warrior, e.g., the chest or the arms. The following locatives (or sandhi combinations containing locatives) appear in this function:

- *hṛdi*
- *hṛdaye*
- *jatrudeśe*
- *lalāṭe*
- *stanāntare*
- *marmadeśe*
- *bhujāntare*
- *(sarva)marmasu*
- *marmaṇi*
- *bāhvor urasi*
- *bhruvor madhye*
- *vakṣasi*
- *corasi*

In most cases this information does not seem to carry much semantic weight as normally no effect from this hit on the hero in question is reported; but there are some exceptions to this rule, as we shall see.

*Location.* In many version the location of the fight is mentioned, namely "in battle". Because of the many near-synonyms used and the redundancy of this information in view of the general situation it can be assumed that the following locative forms almost always are mere fillers:

- *samare*
- *(mahā)raṇe*
- *(mahā)mṛdhe*
- *(mah)āhave*
- *saṃyuge*
- *yudhi*
- *yuddhe*
- *saṃkhye*
- *ājau*

*Addressing the listener.* Cases where the listener of a narration is directly addressed with the help of a vocative are ubiquitous in the *Mbh*. As a rule, they are merely fillers, with the additional pragmatic function of reminding the real-world listener of the narrative situation. The following vocatives are the ones occurring in *A*-HIT-*B* sentences:

- *mahārāja*
- *bhārata*
- *rājan*
- *māriṣa*
- *kurunandana*
- *naravyāghra*
- *bharataśreṣṭha*
- *bharatarṣabha*

*Manner of action.* Lastly, there are a number of adverbs carrying the information that the shooting is done in a quick or powerful way, namely:

- *tūrṇam*
- *dṛḍham*
- *rabhasam*
- *bhṛśam*
- *gāḍham*
- *śīghram*
- *drutam*
- *tvaritam*
- *dhairyam*
- *kṣipram*
- *satvaram*

Because these qualities are to a large part inherent in this kind of action and the effects of shots qualified by the above words are, as a rule, not depicted in a special way, it can be assumed that the enumerated additions are of low semantic weight and mostly have the function of fillers. It must be underscored, however, that as a general cautionary rule it should not be taken for granted that optional elements are in *every* instance restricted to their expletive function. Perhaps it is convenient to list the types of optional elements discussed above in a table with short comments and examples:

**T50.** Optional elements in the *A*-HIT-*B* frame

| Element | Comment | Example |
|---|---|---|
| Attribute | The subject (sometimes also the object) may be characterised by adjectives or epithets. | *kruddha*<br>*rathināṃ śreṣṭha* |
| Adverb | The hitting action may be qualified by an adverb denoting intensity. | *śīghram*<br>*bhṛśam* |
| Number of weapons | This is the most popular optional element; it consists of a numeral in the instrumental case. More than 40 different numbers occur. | *ṣaṣṭyā*<br>*pañcaviṃśatyā* |
| Address of listener | A well-known way to close a pāda is to add the name of the listener in the vocative. | *mahārāja*<br>*māriṣa* |
| Point of contact | Sometimes the point where the target's body has been hit is specified. | *hṛdi*<br>*stanāntare* |
| Place of fighting | Quite often in the battle books it is said that an action takes place "in the battle". | *raṇe*<br>*samare* |
| Particles | Particles are commonly used and usually fulfil their connecting (etc.) function in a natural way. | *tu*<br>*api* |

### 3.7.1.4 Sifting the evidence

In the battle books in the *Mbh* there are several cognate epic frames that include the aforementioned elements. Most importantly, extended versions can be found, often running over several lines, where either one person attacks a larger number of opponents one after the other, or several attackers, in what one could call a "sequential attack", shoot at one target in turn. If we count all the verses constructed on the basis of all the epic frames of this type, we can find more than a thousand examples.[126] Even if we restrict ourselves to the simplest form, where only one hitting action and nothing else is expressed, i.e., where neither sequential attacks nor other complications occur, the number of instances exceeds 600.[127]

According to the proposed model the poet has three complementary possibilities to adjust the expression of his initial idea to the prevailing requirements, given that the names of the main protagonists are fixed from the outset. These, and their effects, are here presented in the form of a table:

**T51.** Methods of variation

| Method ... | ... has an influence on | |
|---|---|---|
| | length | metrical structure |
| Choosing between alternative verbs and verb forms | + | + |
| Adding optional elements | + | – |
| Choosing a particular word order | – | + |

126 A list of these verses together with the other databases used for the following investigations can be found at Sellmer 2015.

127 Here and in the following analyses it must be understood that the reported frequencies of certain sentence types and the like are only approximate because — apart from the constant danger of creating inadequate search algorithms and of simply overlooking some relevant instances — sometimes the decision of whether to exclude a sentence because of some rare additional feature is to a certain degree subjective, therefore the figures as a rule contain a margin of about 10% more or less "unclear" examples.

It certainly can be generally assumed that sentences in epic ślokas are constructed in the same way as in prose, unless metrical factors make such a solution difficult or a particular rhetorical or poetic effect is intended. In order to identify the specific laws governing epic versification, it is therefore advisable to look at those cases where metrical requirements are especially difficult to meet. This can most easily be done by adding a third condition to the list of two given above (p. 142):

3) The space, i.e., the number of syllables, in which the idea is expressed should be as small as possible.

Looking concretely at the sentences built according to the epic frame under investigation, we can see that most of them extend over three or four pādas. But 24 or 32 syllables are such a considerable amount of space to express the simple idea of *A* HIT *B,* and offer so many alternative solutions that in most cases a poet of some versatility does not have to introduce many changes compared to the situation of composing in prose (though, strictly speaking, this is impossible to prove in the absence of a comparable prose corpus). Therefore these examples are too long for the purpose of discovering basic structures in epic versification, and we should rather increase the pressure on the poet, as it were, i.e., look for shorter sentences. So, all the instances where a hitting sentence of the described type is put into only two pādas (i.e., one *ardha*-śloka) were chosen.[128] (As a rule, I have also included such sentences that are complete and could stand on their own, even if they appear in the context of a sequential attack or the like.)

### 3.7.1.5 Application of the model: one-liners

Any application of the general model to specific realisations of the chosen epic frame takes as its point of departure the presupposition that the elements of the sentence take concrete shape, as it were, consecutively, so the space of possibilities becomes smaller and smaller with every step. It should be noted that this reasoning entails the assumption that the number of pādas in the sentence to be constructed must be fi-

128 Some "hits" are even condensed into a single pāda, but these are exceptional cases that most often occur after a first pāda that contains an absolutive, like in *gṛhītvā dhanur anyat tu bhīmo vivyādha pāṇḍavam* (07,079.025ab).

xed at the very beginning of the construction process. This assumption is far from obvious, and the very fact that the following data seem to support it must be regarded as quite remarkable.

Accordingly, the strategy has been to start with the amorphous idea *A* HIT *B* and to introduce steps in such a manner that the elements of the model are added one after the other: first the fixed elements, then the essential ones, and at the end the optional ones. The analysis has shown that the steps can best be considered as "decisions" between two alternatives, which, it must be emphasised, should not be imagined to be conscious decisions.

Theoretically, 3! = 6 combinations of the principal elements are possible, and most of them do indeed occur, but only those with the attacker or target in the first position are frequent enough for a quantitative analysis.

The alternative between putting the subject or the direct object first should not be regarded as primarily motivated by metrical requirements because, as a rule, the front position by one of these elements implies that it is to be taken as the theme of the sentence, the other one as the rheme.

For now only sentences that start with the subject will be considered, so that the number of possible permutations boils down to three. In reality, the picture is slightly more complicated because the division of the sentence into two pādas also has to be taken into account, and the distribution of the essential elements between the pādas is often important for the places where optional ones must or can be inserted. The patterns that have to be considered can be seen in the following table:

**T52.** Distribution of subject, object and verb in *A*-HIT-*B* hemistichs

| 1st pāda | 2nd pāda |
|---|---|
| S – O | V |
| S | O – V |
| S – V | O |
| S | V – O |

A list of all 60 verses that form the basis of the following analysis can be found in appendix A8; it was extracted by using a rather restrictive method in order to eliminate any non-standard elements. The recon-

struction presented below is only one of several theoretical possibilities. It is merely designed to model the versification process as straightforwardly as possible, and makes no claim whatsoever to be a representation of the actual thought processes of the poets.

### I. First decision: object in 1st or 2nd pāda

Taking as a point of departure that the subject is located in the first pāda, the primary decision will be the following: whether to put the second essential and fixed element, i.e., the name of the target (underlined), into the first or the second pāda, as in these examples:

**Q42** 07,120.078ab *madrarājas tu <u>kaunteyam</u> avidhyat triṃśatā śaraiḥ*
**Q43** 06,109.004ab *śalyas tu navabhir bāṇair <u>bhīmasenam</u> atāḍayat*

At least in some cases this decision seems to be guided by purely formal aspects, namely by the number of syllables of the subject and/or object. Two such rules with in total four conditions (each followed by an example) can be formulated:[129]

*Rule 1:* The object is located in the first pāda if one of the following conditions applies:

*Cond. 1:* The subject is monosyllabic (i.e., one of the sandhi forms *sa* or *so*).
**Q44** 06,049.036ab
*<u>sa</u> droṇaṃ niśitair bāṇai rājan vivyādha saptabhiḥ*

*Cond. 2:* The object is monosyllabic (i.e., one of the sandhi forms *tam* or *taṃ*).
**Q45** 08,056.021ab
*bhīmasenas tu <u>taṃ</u> kruddho vivyādha triṃśatā śaraiḥ*

129 In view of the limited amount of data, the "rules" formulated in this section should be taken as tentative, and some are rather weak. Exceptions are mentioned and discussed in the footnotes.

*Cond. 3:* The subject and the object are both tetrasyllabic.[130]

**Q46** 07,013.035ab
*senāpatiḥ suśarmāṇaṃ śīghraṃ marmasv atāḍayat*

*Rule 2:* The object is located in the second pāda if the following condition applies:

*Cond. 4:* The subject is disyllabic and the object has three or more syllables:

**Q47** 06,109.004ab
*śalyas tu navabhir bāṇair bhīmasenam atāḍayat*

It must be emphasised very strongly that the above rules are not directly dictated by the metrical requirements of the śloka. This can be easily proven by constructing nearly equivalent, metrically acceptable lines with a different location for the object. Here is an example for each quoted hemistich:

Q44' **sa tato niśitair bāṇair droṇaṃ vivyādha saptabhiḥ*
Q45' **bhīmasenas tu saṃkruddho vivyādha taṃ tribhiḥ śaraiḥ*
Q46' **senāpatir bhruvor madhye suśarmāṇaṃ atāḍayat*
Q47' **śalyas tato bhīmasenaṃ navabhir bāṇair atāḍayat*[131]

Let us now have a closer look at the two main groups.

### Ia. Object in 1st pāda

In cases where the subject and object leave room for a third element in the first pāda, its nature is largely determined by the number of free syllables. Where the total number of syllables for subject and object is ≤ 3, the free slot is taken by a word in the instrumental case that designates the type and/or the number of weapons used. If subject and ob-

130 The one counterexample, *bhīmasenas tataḥ kruddho bhāradvājam avidhyata* (06,065.023ab), can perhaps be explained by the fact that the accusative *bhāradvājam*, which occurs 6 times (5 times in Book VI) is always found in the same metrical position. This preference apparently overrides the rule under discussion.

131 This solution includes a less common *vipulā* cadence in the first pāda, but *bhīmasenaṃ* occurs 17 times in this position (among 163 occurrences overall), hence the constructed hemistich should be quite acceptable.

ject add up to more than three syllables, the remaining space is mostly taken by particles (*ca, tu, atha, tataḥ, tathā* etc.), sometimes also by fillers like *samare* or *raṇe*.

The second pāda standardly consists of the verb plus word(s) for the type and/or the number of weapons in the instrumental. Most of the sentences where no information about the weapons is included in the second pāda are continued in the following pāda and therefore, strictly speaking, do not count as two-pāda sentences.

### Ib. Object in 2nd pāda. Second decision: O – V or V – O?

Coming now to the other main group of hemistichs, where the object is located in the second pāda, we once more have a basic alternative: whether to put the object before the verb, or the converse.

#### First pāda

But first a few words concerning the initial pāda. Putting the object in the second pāda leaves an open slot in the first pāda and thus forces another element to fill this space, which in almost all instances is an optional one because the word order S – V | O is very exceptional.[132] It is interesting to see that, here also, the length of the object — though located only later, in the second pāda — is a crucial factor; this fact clearly shows that the construction of the sentence does not proceed in a linear manner from left to right. We can distinguish two main groups: those with a disyllabic and those with a longer object.

Where we have a disyllabic object, in the majority of instances the first pāda is closed by a filler (vocative, locative, or attribute); e.g.:

**Q48** 06,078.014ab *bhāradvājas tu samare matsyaṃ vivyādha patriṇā*

In almost all remaining cases we find a numeral in the instrumental case, referring to a word denoting weapons at the end of the second pāda, as in:

**Q49** 06,099.009cd *śikhaṇḍī pañcaviṃśatyā bhīṣmaṃ vivyādha sāyakaiḥ*

132 To quote one of the few examples: *so 'bhyavidhyat tato droṇaṃ ṣaṣṭyā śāśvarathadhvajam* (07,101.026ab). Being able to recognise the exceptionality of such lines, which at first glance look completely unremarkable, is a useful by-product of the present analysis, e.g., in the context of textual analysis.

In the cases of a tri-, tetra- or pentasyllabic object, the latter part of the first pāda almost always contains word(s) designating the type and/or the number of weapons used. Curiously, many of these sentences appear in the context of sequential attacks. E.g.,

**Q50** 07,036.015cd *duḥsaho navabhir bāṇair abhimanyum avidhyata,*

is continued by:

**Q51** 07,036.016ab *duḥśāsano dvādaśabhiḥ kṛpaḥ śāradvatas tribhiḥ,*

and the names of other heroes that attack with different numbers of arrows.

### Second pāda

The basic decision in the second pāda consists in putting either the object or the verb first. Once more, the number of syllables for the object plays an important role.

If the object has 2, 4 or 5 syllables, the word order is normally O – V.[133] A different number of free syllables leads to specific solutions, which will be briefly described. Where the object is disyllabic, in almost all cases we find the verb form *vivyādha* followed by a word designating the type and/or the number of weapons used. With tetra- and pentasyllabic objects there is no space for any third element, so different verbs are used: in the former case, twice *avidhyata* and four times *atāḍayat*; in the latter case, twice *ārdayat*.

It could be supposed that, in an analogy to the situation just described the preferred word order for sentences with trisyllabic object should also be O – V, but this is not the case; rather, in all instances the object is placed at the very end (3x *pāṇḍavam*, 2x *sātyakim*). Perhaps this phenomenon is connected with the fact that these sentences are part of descriptions of sequential attacks, but this would need to be verified in a broader context.

133 Similarly to the case mentioned in fn_130, one of the few exceptions — *duḥśāsanaḥ ṣoḍaśabhir vivyādha śinipuṃgavam* (07,096.030cd), — may be explained by the fact that the accusative of *śinipuṃgava* in all of its 11 occurrences is to be found at the end of a pāda.

The following schema (Fig. 21) tries to summarise the major steps of the reconstructed versification process, starting from a yet unformed initial idea, that has been therefore given the amorphous shape of a cloud. The O – S branch is left open for now and needs to be filled by further research. It has been shown that the two decisions coloured in red are heavily and in a complex way influenced by the metrical properties (i.e., length) of the words involved (though other factors, like the usual metrical position of certain words, also play a role).

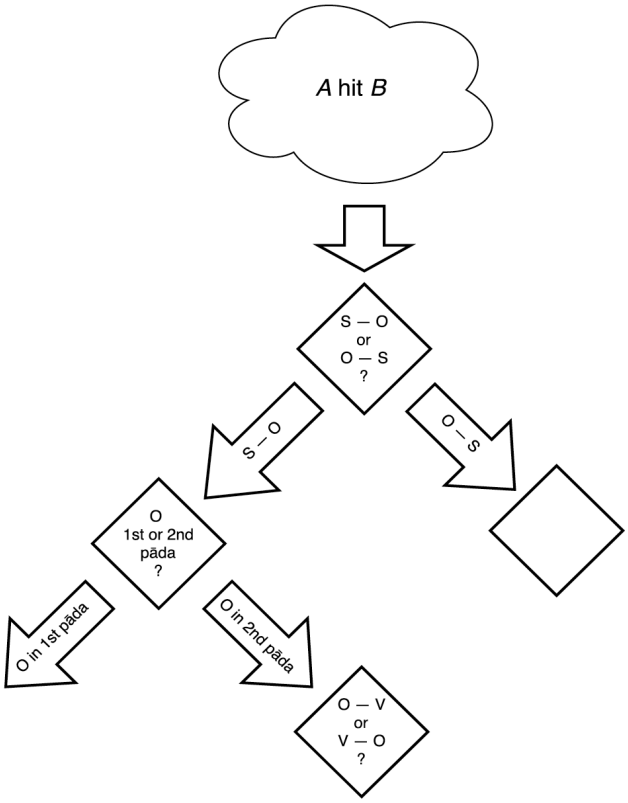


**Fig. 21.** Schema of the decision process in the versification of one-liners belonging to the *A*-hit-*B* frame

It is hoped that the preceding investigations will shed some light on the way in which the authors of the *Mbh* constructed certain types of hemistichs. Saying this, it should be underlined that the main aim of this section has not been to describe this production process for its own sake

but to show that in some cases purely formal features — the numbers of syllables for the subject and the object — are crucial or even decisive for the word order of a sentence, though this is not automatically determined by the metrical exigencies of the śloka. If and to what extent the results may be extrapolated to other types of verses must be checked on a case-by-case basis, but my impression is that some form of the dynamic model employed here can be fruitfully applied to various highly stereotyped groups of hemistichs and ślokas.

### 3.7.2 Variation and regularity in epic frames

As already indicated, a comprehensive rule-based approach to epic versification is only feasible (at least to a certain extent) for a very limited number of lines. Even in longer sentences formed on the basis of the simple *A*-HIT-*B* frame the room for variation is too wide for such a rigid type of analysis. Nevertheless there naturally do exist formulaic structures in these sentences, so an alternative mode of investigation must be tried. In this subsection the method chosen is to present on the one hand major regularities, on the other hand the main ways used by the epic poets to introduce variations in the underlying patterns.

#### 3.7.2.1 Distribution of main constituents over pādas

Perhaps the most obvious pattern is formed by the distribution of the main syntactic constituents over the four pādas of a verse (three-pāda sentences that extend over śloka boundaries are rare and therefore must not be taken into account here). In order to achieve a picture that is as simple as possible, here, only those verses will be analysed in which no additional syntactically relevant elements occur in the same pāda apart from the main constituents; this restriction first of all refers to absolutives, which are quite frequent and whose presence in a sentence fundamentally changes its syntactic structure. For convenience, such "pure" pādas will be referred to as S-pādas, O-pādas and V-pādas, respectively. From the point of view of the poet an approach that allows him to construct his verses pāda by pāda in such a way has obvious advantages: most importantly, a collision of essential elements is excluded, and because each one of these elements (with a small number of exceptions) occupies no more than five syllables, it can comfortably be put in an oc-

tosyllabic pāda, so that the remaining syllables may freely be filled with a less important optional element. As a first step in reconstructing epic versification it is therefore advisable to start with single pādas, because for each pāda there is a separate mini-versification process, as it were. In terms of frames, one could regard frames as nested structures, where inside one master frame (in our case, the *A*-HIT-*B* frame) one or more subframes may be responsible for the lowest level of verse-making.

In order to reduce the material to a manageable size, just like in section 3.7.1.5 only examples of the sequence S – O – V will be dealt with.[134] The ślokas under discussion can be divided into two main groups, depending on the position of the direct object: whether it joins the subject in the first hemistich or the verb in the second one (pāda boundaries are symbolised by "|", the end of a line by "||"):

I.
  a. S|O||V|–
  b. S|O||–|V

II.
  a. –|S||O|V
  b. S|–||O|V

These four solutions will now be analysed in turn, pāda by pāda. Though the analysis starts with verses belonging to the *A*-HIT-*B* frame, in many cases it turns out that the versification patterns are more universal, so that other material will be brought in (as a rule however only from the BB, as this text region is the natural environment of the epic frame under discussion).

134 In her analysis of killing scenes in Homer Bozzone presents an interpretation of different constituent orders as consequences of different discourse strategies (2014, pp. 191–209). An analogous approach to the much richer material of fighting scenes in the *Mbh* may be quite fruitful.

#### 3.7.2.1.1 S|O in pādas *a* and *b*

##### 3.7.2.1.1.1 S-*a*–pādas

S-pādas of the S|O||V|– sentence type, which has 55 members, almost always[135] contain two elements in addition to the subject; one being a particle or a combination of particles, the other one most frequently an adjective or a vocative. Because the last mentioned element, if present, always occupies the final syllables of the pāda, it is possible to distinguish two types of S-pādas, depending on which element takes the first position: the subject (33 pādas, not counting the pādas without a particle) or a particle (18 pādas).

Where the subject takes first place, these particles follow:

**T53.** Particles after subject in 1st pādas of the S|O||V|– type

| Particle | Freq. |
|---|---|
| *tu* | 15 |
| *tataḥ* | 6 |
| *'pi* | 6 |
| *ca* | 2 |
| *tu tataḥ* | 4 |

When a particle starts the sentence, it is most often *tataḥ,* as can be seen from the following table:

**T54.** Particles before subject in 1st pādas of the S|O||V|– type

| Particle | Freq. |
|---|---|
| *tataḥ* | 13 |
| *tathaiva* | 3 |
| *atha* | 1 |
| *tatas tu* | 1 |

The hypothesis might be considered that these particles only play the role of little metrical helpers, to expand the names in a convenient

135 I noticed four exceptions without a particle: 07,109.032; 07,142.022; 08,010.001; 08,018.072.

way, similarly as *vai* and *ha* often are mainly used to fill a line. But in the present case the evidence does not support such an interpretation. Firstly, all the particles appear in situations that fit to their usual functions; *tu* and *api* introduce a new subject, whereas *tataḥ* marks the start of a new action; and no particle is used in such situations where a particular fighting action commences. Secondly, names with the same metrical structure can be found with different particles. Still, it must be noted that they appear on average about twice as often in *A*-HIT-*B* verses than generally in the Battle Books: 18.0% vs. 9.6% vs. for *tu*, and 23.1% vs. 12.1% for *tataḥ*. However, this situation is probably simply due to the fact that in a fighting scene, more often than in other contexts, the narrative focus switches between different heroes (where *tu* comes in handy) and between different actions (where *tataḥ* is a natural choice).

There is however another interesting little question in this context, which arises because of the fact that the position of *tataḥ* is not so rigidly regulated as in the case of the particles *tu* and *api*. The alternation between the two possibilities to put *tataḥ* before or after the subject, which is also visible in our small sample of sentences, can in most cases be explained by a model that presupposes a first step in which subject and particle are simultaneously chosen and put in a metrically acceptable order. To describe this mechanism let us consider all the 534 odd S-pādas in the BB where *tataḥ* occurs either in the first or in the second position. Here we have the following distribution:

*tataḥ* 1st word: 432 (80.9%)
*tataḥ* 2nd word: 92 (19.1%)

The first group represents the standard solution, so it is much more rewarding to analyse the second group because it seems probable that there is some specific rationale behind the postponement of *tataḥ*.

The first thing that strikes the eye is the fact that all names in the nominative preceding *tataḥ* are tetrasyllabic.[136] Looking at their metrical structures we find the following picture (words with vocalic beginning, on which shortly, are excluded):

136 I found only one exception, where the first word is a pronoun: *sa tataḥ puruṣavyāghraḥ sātyakiḥ satyavikramaḥ* (07,095.046ab).

**T55.** Metrical structure of names preceding *tataḥ*

| Metrical structure | Type freq. | Example |
|---|---|---|
| – ⏑ – – | 14 | *dhṛṣṭadyumnas* |
| ⏑ ⏑ – – | 11 | *sahadevas* |
| – – – – | 8 | *bhāradvājas* |
| ⏑ – ⏑ – | 4 | *alambusas* |
| – – ⏑ – | 4 | *duryodhanas* |
| ⏑ – – – | 3 | *śatānīkas* |

In order to find out if there are any formal metrical reasons for the initial position of these names, it is useful to undertake a simulation by combining the above patterns, as second elements, with ⏑ – (resulting from *tataḥ*)[137] as the first one. In this way we obtain a list of potential combinations that have been avoided by putting *tataḥ* behind the name. In order to facilitate the assessment of these patterns, it will be useful to supply a list of regular *vipulā* patterns, with obligatory caesuras indicated by "|":

**T56.** Regular *vipulā* patterns

| | |
|---|---|
| 1 | ⏒ ⏒ ⏒ – ⏑ ⏑ ⏑ ⏒ |
| 2 | ⏒ – ⏑ – – \| – – ⏒ |
| 3a | ⏒ – ⏑ – – ⏑ ⏑ ⏒ |
| 3b | ⏒ – – – \| – ⏑ ⏑ ⏒ |
| 4 | ⏒ ⏒ ⏒ – \| – ⏑ – ⏒ |

The potential patterns can be divided in two groups, depending on the quality of the 3rd syllable, which would become the 5th syllable of a line starting with *tataḥ*. Where it is heavy the resulting patterns would be irregular, with an impossible opening and/or a missing caesura, as can easily be established by comparing them with the above list (the word break after *tataḥ* is indicated by a comma):

137 With the exception of words starting with a vowel other than *a*.

- *⏑ – , – ⏑ – ⏒
- *⏑ – , ⏑ ⏑ – ⏒
- *⏑ – , – – – ⏒
- *⏑ – , ⏑ – – ⏒

In contrast, both occurring patterns with a short 3rd syllable would yield regular *pathyā* sequences:

- *⏑ – , ⏑ – ⏑ ⏒
- *⏑ – , – – ⏑ ⏒

From this comparison it emerges that in most cases the word order found in the text, with *tataḥ* at the start, is the only possible solution — unless a synonymous name would be employed. This certainly would have been feasible in many instances, and the fact that the poet did not make use of this possibility suggests that, at this point of the versification process, *the name of the attacker is fixed at the outset and not the result of a choice among several synonyms* — just as assumed above (3.7.1.1).

It is a different situation with the eight names featuring the patterns ⏑ – ⏑ – and – – ⏑ – that could without any problem appear after *tataḥ*, and, with the exception of *jayadratha*, almost all of them do occur at other places, albeit most rather sporadically, as can be seen from T57.

**T57.** Names occurring before *tataḥ*

| Name | Freq. before *tataḥ* | Metr. pattern | Freq. after *tataḥ* |
|---|---|---|---|
| *ghaṭotkaca* | 5 | ⏑ – ⏑ – | 5 |
| *duryodhana* | 3 | – – ⏑ – | 85 |
| *prāgjyotiṣa* | 2 | – – ⏑ – | 6 |
| *dhanaṃjaya* | 1 | ⏑ – ⏑ – | 7 |
| *duḥśāsana* | 1 | – – ⏑ – | 10 |
| *jayadratha* | 1 | ⏑ – ⏑ – | 0 |
| *vṛkodara* | 1 | ⏑ – ⏑ – | 2 |
| *śāradvata* | 1 | – – ⏑ – | 3 |

No special reason could be detected why these names are occasionally placed before the particle; perhaps it is simply to do with mere variation. Still, it should be noted that the reversed order is remarkably frequent in the case of the half-*rākṣasa* Ghaṭotkaca (50% in terms of relative frequency!) whose name appears also in other verses that show different unusual traits.[138]

Names beginning with a vowel have been ignored so far because they are generally avoided after *tataḥ*, with the exception of *arjuna* (and some other, much rarer names starting in *a-*). actually there are only 20 pādas in the whole BB with the combination *tata* + vowel at the beginning, and among the words following *tata* there is no subject at all. This preference for the front position of vocalic names may be an inherited trait of oral poetry: vowels are prone to cause sandhi changes that alter the prosodic structure of the affected words so putting vocalic words first may be seen as a kind of defensive strategy; the exception *tato 'rjunaḥ* is no counterexample because with 55 occurrences in the *Mbh* it has to be regarded as a stereotyped combination.

Now we can formulate a model for the first step in the production process of an S-*a*-pāda that is valid in S|O||V versions of the *A*-HIT-*B* frame and, apparently, even more generally (barring the exceptions discussed):

1) First of all it must be decided that the aim is to produce a pure S-pāda, so object and verb can be left out of consideration.
2) Next, two decisions are independently taken in one step, which seem to be largely free, i.e., devoid of metrical considerations:
   a. Who is the attacker and which designation should be used?
   b. Is a particle necessary? If yes, which one?
3) The sequence is then determined by the particle:
   a. *tathaiva:* particle must come first;
   b. *tu (tataḥ), api, ca:* particle must come second;
   c. *tataḥ:*

138 The whole *Ghaṭotkacavadhaparvan* seems to have a complex textual history: see VON SIMSON 1974, pp. 205–260.

i. first place, immediately followed by the subject[139] — but only under the condition that the name does not start with a vowel and that an acceptable metrical sequence results from the combination of words,
ii. otherwise *tataḥ* comes second.

To be sure, names could be imagined having metrical patterns that would cause problems for this sequence of decisions, but almost exclusively names with ≤ 4 syllables and a fitting metrical structure occur in our text.[140]

After this main step of determining the position of subject and particle, there often remain some syllables to be filled in the first pāda. Their exact number depends on the combined length of the first two elements and, in our sample, oscillates between 3 and 5. In the case of 4 and 5 syllables, there are often two words that fill the gap, otherwise it is one. In the following list of the most frequent secondary elements compiled in all S-*a*-pādas of the *A*-HIT-*B* frame, sandhi changes have been neutralised:

**T58.** Secondary elements in S-pādas

| Secondary element | Freq. | Secondary element | Freq. |
|---|---|---|---|
| *kruddhaḥ* | 35 | *rājā* | 9 |
| *rājan* | 25 | *mahābāhur* | 4 |
| *saṃkruddhaḥ* | 22 | *maheṣvāso* | 4 |
| *mahārāja* | 21 | *tūrṇaṃ* | 4 |
| *samare* | 19 | | |

As is to be expected, these "secondary elements" are just fillers, like those listed above in table T36 (p. 118 ff.). Accordingly the adjectives are

139 There are generally only a very few examples where another word is inserted between particle and subject in pure S-*a*-pādas of the *A*-hit-*B* frame type. The following verses, which I managed to identify, may therefore be noted as exceptional: 07,143.008; 09,025.011; 08,042.011.

140 In S-pādas of *A*-hit-*B* verses I found only one subject that exceeds 4 syllables: *kuntibhojasutaś cāpi vindaṃ vivyādha sāyakaiḥ* (06,043.072ab). Generally, pentasyllabic and hexasyllabic names do occur in the BB, though not very frequently, and they usually do not belong to any of the main heroes.

mostly generically "warrior-compatible"; exclusive epithets are quite rare, like *hārdikya* in *kṛtavarmā tu hārdikyaḥ* (07,091.004a).[141] One particularly nice example that illustrates the flexibility of the formulaic language of the *Mbh* is formed by the following list of adjectively used participles expressing ever stronger rage:

**Q52** 06,065.023 *bhīmasenas tataḥ kruddho*
**Q53** 06,043.037 *cedirājas tu saṃkruddho*
**Q54** 06,107.002 *mādhavas tu susaṃkruddho*
**Q55** 07,020.009 *vṛkas tu paramakruddho*

This arrangement makes it quite clear that too much should not be read into "last words" of this type. To be sure, taken by themselves these participles denote different grades of rage, but in the present context the fierceness of the rage is simply reciprocally proportional to the number of syllables in the fighting hero's name.

### 3.7.2.1.1.2 O-*b*-pādas

Because an investigation of all ca. 120 pure O-*b*-pādas in *A*-HIT-*B* verses shows that they are in the vast majority of cases constructed independently of the remaining pādas in the respective verse, it is practical to go beyond S|O||V sentences and treat all the mentioned O-*b*-pādas together as one group.

#### Object not at the beginning

First we will discuss the small minority of pādas (ca. 7%) where the object does not appear at the beginning of the pāda. The following nine verses featuring such pādas have been identified: 07,028.014; 07,068.011; 07,092.005; 07,131.091; 07,132.028; 07,141.029; 07,147.011; 08,039.035; 08,067.008.

In all of them the objects are preceded by a word in the instrumental case referring to the weapons used. In three instances these words are part of an instrumental group that forms a kind of bridge between the *a*- and the *b*-pāda:

141 Generally, six times in the BB: 06,061.026; 07,045.019; 07,046.004; 07,091.004; 07,140.005; 07,140.023.

**Q56** 07,092.005
*duryodhanaś ca mahatā śaravarṣeṇa mādhavam /*
*apīḍayad raṇe rājañ śūrāś cānye mahārathāḥ //*

"And Duryodhana harassed Mādhava with a great rain of arrows in the battle, O king, and so did other great heroes and warriors."

**Q57** 07,131.091
*tato ghaṭotkaco bāṇair daśabhir gautamīsutam /*
*jaghānorasi saṃkruddho viṣāgnipratimair dṛḍhaiḥ //*

"Then Ghaṭotkaca, enraged, hit Gautamī's son (= Aśvatthāman) in the chest with ten massive arrows resembling poison and fire."

**Q58** 07,141.029
*tato ghaṭotkaco bāṇair daśabhir drauṇim āhave /*
*jaghānorasi saṃkruddhaḥ kālajvalanasaṃnibhaiḥ //*

"Then Ghaṭotkaca, enraged, hit Droṇa's son (= Aśvatthāman) in the chest with ten arrows resembling the fire of Time."

Such bridges are quite a rare feature among *A*-HIT-*B* verses starting with an S-pāda,[142] so the quoted ślokas are exceptional in a double sense[143]. In five other pādas of this group the designations of the weapons used could not be placed at the end of a *b*-pāda for metrical reasons, so the inversion of elements is understandable.[144]

In the last sentence of the group under discussion a numeral occurs in the *b*-pāda before the object, which is almost unique in *A*-HIT-*B* verses (the only near parallels being the "bridge" verses quoted above, where *daśabhiḥ* refers to *bāṇair* in the respective *a*-pādas):

142 I found only two other comparable verses: 07,031.002 and 07,092.003.

143 It should also be noted that once more the name of Ghaṭotkaca is present here. In addition, 07,141.029 is even more special in that the object is located neither at the beginning nor at the end of the pāda.

144 It must be added that, with the exception of the form *śaravarṣeṇa* (07,028.014b; 08,039.035b), the remaining words do not refer to arrows, but to other weapons (*vāyavāstreṇa* [07,132.028b], *brahmāstreṇa* [08,067.008b] and *tomareṇa* [07,068.011b]), which may explain the slightly unusual features.

**Q59** 07,147.011
*atha droṇo maheṣvāso daśabhiḥ śinipuṃgavam /*
*avidhyat tvaritaṃ kruddhaḥ sarvaśastrabhṛtāṃ varaḥ //*

"And then Droṇa, best among all weapon bearers, enraged, quickly hit the bull of the Śinis (= Sātyaki) with ten arrows ..."

Two explanations, which perhaps are complementary, may be proposed. Firstly, in contrast to the standard *A*-HIT-*B* frame, the combination of a numeral in the instrumental and a noun in the accusative case is quite frequent in verses of the sequential attack type. Now, the verse just quoted has close connections to this type of frame, because the text continues with the information that after Droṇa also other heroes also join the attack:[145]

**Q60** 07,147.012
*karṇaś ca daśabhir bāṇaiḥ putraś ca tava saptabhiḥ /*
*daśabhir vṛṣasenaś ca saubalaś cāpi saptabhiḥ /*
*ete kaurava saṃkrande śaineyaṃ paryavārayan //*

"... Karṇa with ten arrows and your son with seven, and Vṛṣasena with ten and Subala's son with seven — these, O scion of Kuru, surrounded the grandson of Śini in the battle."

In addition to this interpretation that views Q59 as the beginning of a sequential attack, the fact that forms of the epithet *śinipuṃgava* (belonging to Sātyaki) are completely polarised can be pointed to and appear exclusively at this position in a line (8x voc., 16x nom., 11x acc., 2x at the end of a dvandva compound). Cases like the present one are good illustrations of the strength of polarisation that even overrides the standard word order with the object at the beginning of the *b*-pāda even though it would be perfectly possible to construct a *b*-pāda like **śinipuṃgavam aṣṭabhiḥ*.

145 This three-line stanza is exceptional, because it contains the heterotope [3]*kaurava* that occurs only once, whereas the most frequent heterotope of the highly polarised string *kaurava* (0.98 Vy), which starts at syllable 14, is found 62 times.

### Object at the beginning

In the standard case, with the object at the beginning of pāda *b*, one or more words have to be added unless the object fills the whole eight syllables by itself. Which kind of element is chosen to fill the line to a large degree depends on the length of the object. Generally, tetrasyllabic objects are rarely accompanied by an adverbial specifying the weapons used (5 out of 44 pādas),[146] and those with five or more syllables never. In contrast to this situation, about 50% of verses with di- and trisyllabic objects feature an instrumental phrase; in the latter group (comprising 40 stanzas) the number of different solutions is rather small:

**T59.** Instrumental phrases in O-pādas with trisyllabic object

| Instr. phrase | Freq. |
|---|---|
| *navabhiḥ śaraiḥ* | 16 |
| *niśitaiḥ śaraiḥ* | 5 |
| *daśabhiḥ śaraiḥ* | 1 |

The variety of hexasyllabic instrumental clauses is much richer, though in total numbers the group of verses with disyllabic object is the smaller one, with only 11 members:

**T60.** Instrumental phrases in O-pādas with disyllabic object

| Instr. phrase | Freq. | Instr. phrase | Freq. |
|---|---|---|---|
| *bahubhir āśugaiḥ* | 1 | *ṣaṣṭyā (stanāntare)* | 1 |
| *navabhir āyasaiḥ* | 1 | *nayanasāyakaiḥ* | 1 |
| *navabhir āśugaiḥ* | 1 | *śaraśatais tribhiḥ* | 1 |

Where there is no word or phrase referring to weapons we find different elements, mostly typical fillers like generic attributes (*mahāratham* [12x], *amarṣaṇam* [4x], etc.), sometimes also local adverbials specifying the place of the action *([mah]āhave, [mahā]raṇe, mahāmṛdhe)*, the body

146 06,110.034; 07,109.032; 08,032.055; 08,040.009; 08,020.019; 09,026.039. Each of these verses is slightly unusual in other respects also, but there is no point in entering such details here.

part where the arrow hit its target (*stanānatre, mahorasi*), nominative attributes referring to the attacker, or vocatives.[147]

It is difficult to find further regularities. In particular, the decision whether to fill the line with an attribute of the object or with another of the elements mentioned (in accordance with the noted preferences depending on the object's length) appears to be quite free.

### 3.7.2.1.1.3 V-*c*-pādas

In this section only pure V-pādas after pure O-pādas will be treated, because a picture including all V-pādas would be too variegated. First a tabular overview of the verb forms that occur will be given (sandhi neutralised), then particular forms will be discussed.

**T61.** Verbs of hitting in pure V-*c*-*pādas*

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| *vivyādha* (54) | | | | | | *bāṇaiḥ* (10) | |
| *avidhyat* (14) | | | | | | *bāṇaiḥ* (6) | |
| *(jaghāna)* (13, mostly = "to kill") | | | | | | | |
| *ājaghne* (8) | | | | | | | |
| *avidhyata* (3) | | | | | | | |
| *ājaghāna* (37) | | | | -*urasi kruddhaḥ* (15) | | | |
| | *avidhyat* (4) | | | | | | |
| | *ājaghāna* (1) | | | | | | |
| *hṛdi* (4) | | *vivyādha* (6) | | | | | |
| | | *abhyahanat* (3) | | | | | |
| | | | *abhyavivyādha* (2) | | | | |
| | | | | | *vivyādha* (4) | | |
| | | | | | *ānarchat* (4) | | |

147 The two very similar ślokas 07,131.051 and 07,150.049 must be mentioned as exceptions here because in these pādas (which are also the only ones featuring a hexasyllabic object) the information that the targets, the *rākṣasas,* Ghaṭotkaca and his son Añjanaparvan, respectively, are located "in the sky" *(divi)* is essential and hence *divi* cannot be a mere filler.

There are two sources of variation: the verb form itself and its position. As to the position of the verb, it is most often placed at the beginning of the pāda. In the listings just given, there are, however, a few exceptions. Because the respective verses deviate from the standard, it is necessary to investigate closely if any particular reasons can be identified for this state of affairs. In order to structure the discussion, the non-standard pādas will be divided into several small groups.

√*vyadh*. In the first group this verb is preceded by a locative that marks the place where the attacked hero's body is hit, namely the chest:

**Q61** 07,046.022
*sa kosalānāṃ bhartāraṃ rājaputraṃ bṛhadbalam /*
*hṛdi vivyādha bāṇena sa bhinnahṛdayo 'patat //*

"He (= Arjuna) hit Prince Bṛhadbala, Lord of the Kosalas, in the chest with an arrow; pierced in his heart, that one fell."

**Q62** 06,097.039
*gautamo 'pi tvarāyukto mādhavaṃ navabhiḥ śaraiḥ /*
*hṛdi vivyādha saṃkruddhaḥ kaṅkapatrapariccha daiḥ //*

"Enraged, Gautama in turn quickly hit Mādhava in the chest with nine arrows that were furnished with heron feathers."

**Q63** 06,097.012
*alambuso 'pi saṃkruddhaḥ kārṣṇiṃ navabhir āśugaiḥ /*
*hṛdi vivyādha vegena tottrair iva mahādvipam //*

"Enraged, Alambusa in turn hit the son of Kṛṣṇa (= Abhimanyu) with nine swift arrows in the chest, strongly, as if hitting a great elephant with goads."

**Q64** 08,044.054
*kṛtavarmā tato rājann uttamaujasam āhave /*
*hṛdi vivyādha sa tadā rathopastha upāviśat //*

"Then in the battle, O king, Kṛtavarman hit Uttamaujas in the chest; that one collapsed in his chariot."

**Q65** 06,054.015

*bhīmasenas tu saṃkruddho duryodhanam amarṣaṇam /*
*hṛdy avidhyat pṛṣatkena prahasann iva pāṇḍavaḥ //*

"And the enraged Bhīmasena wounded furious Duryodhana in the chest with an arrow, seeming to laugh as he did so" (06,058.016 CSL; tr. Cherniak, mod.).

Here the place of the hit suggests its seriousness, which can be inferred from the fact that in four cases severe effects are explicitly mentioned: in Q61 and Q64 in the respective *d*-pādas; as to Q65, the following verse tells us that Duryodhana collapses in his chariot and faints; in the case of Q62 the effect of the attack seems to be less drastic, but the continuing stanza still informs us that Sātyaki is "strongly hit" (*bhṛśaṃ viddho*); only in Q63 there is no mention of the target being particularly affected, but this may be due to the reason that the attacked warrior is no less than Arjuna himself, or that fights with *rākṣasas* tend to have exceptional features on the linguistic level also (see the case of Ghaṭotkaca). It can be seen that in the examples discussed the word *hṛdi* adds an important aspect to the description of the attack. In the following two verses *vivyādha* is preceded by other words.

**Q66** 08,011.007

*tato drauṇiṃ raṇe bhīmo yatamānaṃ parākramī /*
*tribhir vivyādha nārācair lalāṭe vismayann iva //*

"A little flummoxed, Bhīma showed courage in the battle and pierced Droṇa's persistent son in the forehead with three arrows" (08,015.001 CSL; tr. Bowles).

The addition of *tribhiḥ* in the first, privileged slot of 08,011.007c may be explained by the circumstance that according to the preceding verses Aśvatthāman manages to fix *one* arrow (concretely, a *nārāca*) in Bhīmas forehead, so that Bhīma's feat to achieve the same thing with *three* ar-

rows of the same kind can be seen as an act of successful retaliation showing the superior prowess of the Pāṇḍava hero.

**Q67** 08,018.072
*kṛtavarmā mahārāja pārṣataṃ niśitaiḥ śaraiḥ /*
*raṇe vivyādha saptatyā svarṇapuṅkhaiḥ śilāśitaiḥ //*

"In that battle, great king, Kṛtavarman pounded Pṛṣata's grandson with seventy stone-sharpened arrows with golden nocks" (08,026.034 CSL; tr. Bowles).

Here, I can see no reason why the addition of the, rather superfluous, information that the shooting is taking place "in battle" should be important enough to change the standard word order.[148] Perhaps a certain echo effect may play a role here, because the hetorotope [3]*vivyādha* + numeral in the instrumental plural can be found twice in the preceding 330 lines (08,017.033c: *viddhvā vivyādha saptatyā*; 08,017.059c: *karṇaṃ vivyādha viṃśatyā*).[149]

Next we have to deal with a couple of verses where *vivyādha* occurs at the end of the *c*-pāda. In two cases it is preceded by designations of arrows in the instrumental singular (underlined), and in both instances the effect of their impact is significant: Nakula collapses and loses consciousness; Durviṣaha falls dead from his chariot.

**Q68** 07,144.006-7
*syālas tu tava saṃkruddho mādrīputraṃ hasann iva /*
*karṇinaikena vivyādha hṛdaye niśitena ha //*

"Enraged, your brother-in-law hit Mādrī's son with one barbed arrow in the chest, with a sharp one, seeming to laugh."

148 Bowles apparently saw a similar problem because he chose to add the demonstrative pronoun "that" without any basis in the Sanskrit text.

149 Generally [3]*vivyādha* (47x) is most often found after disyllabic objects (17x), after the absolutive *viddhvā* (5x), or after the particle *punar* (11x).

**Q69** 09,025.016

*tato yatantam aparam abhivīkṣya sutaṃ tava /*
*bhallena yudhi vivyādha bhīmo durviṣahaṃ raṇe /*
*sa papāta hato vāhāt paśyatāṃ sarvadhanvinām //*

"Then, when he noticed that your son put on another arrow, Bhīma hit Durviṣaha with an arrow in the battle; that one fell dead from his chariot while all bow-men were watching."

So, in a similar way as with Q61–Q65 the addition in the first slot seems to have the function of signalling the seriousness of the attack, whose seriousness is also implied by the fact that special kinds of arrows *(bhalla, karṇin)* are used that often have a stronger impact than standard ones (*śara, bāṇa*). It might seem paradoxical that in the quoted verses the singular is used, whereas very often a considerable number of arrows are shot at a warrior without any special effect. But in fact it is quite a regular feature of epic battle descriptions that single shots are particularly effective; perhaps one can interpret this as a kind of litotes. Before closing the discussion of the quoted verses it is necessary to underscore that not only does the type of the missile and the fact that only one of it is used function as signals of a severe attack, but also the word order inversion as such.

**T62.** Polarisation tables of *bhallena* and *vivyādha*

| *bhallena* | |
|---|---|
| St. syll. | Freq. |
| 1 | 5 |
| 3 | 3 |
| 4 | 1 |
| 6 | 76 |
| 9 | 8 |
| 11 | 2 |

| *vivyādha* | |
|---|---|
| St. syll. | Freq. |
| 1 | 115 |
| 2 | 1 |
| 3 | 42 |
| 6 | 28 |
| 9 | 74 |
| 10 | 2 |
| 11 | 126 |

This can be shown in the second example where a *c*-pāda like **vivyādha yudhi bhallena* would not only have been possible, but much more standard on three accounts: because of the usual word order and becau-

se of the polarisation patterns of both *bhallena* and *vivyādha,* where the hetorotopes starting at the 6th and 1st syllable, respectively, are actually quite frequent, as can be seen from the tables under T62.[150]

In the next example we find an adjective at the beginning of the *c*-pāda that qualifies the "winged arrows" (*patatribhiḥ*) at the end of the first hemistich as "swift like birds".

**Q70** 07,109.032
*sa bhīmas tribhir āyastaḥ sūtaputraṃ patatribhiḥ /*
*suparṇavegair vivyādha sārathiṃ cāsya saptabhiḥ //*

"Bhīma exerted himself and hit the bard's son with three winged arrows swift as birds, and his charioteer with another seven."

That we have a carefully constructed verse before us — as opposed to one of the standard variety — can be suspected from the fact that the adjective *suparṇavega* is a *hapax legomenon* in the *Mbh*, no stock attribute. The addition of this *bahuvrīhi* compound does not only enhance the poetic quality of the stanza, but also marks the attack as particularly severe by underscoring the swiftness of the arrows. The following verse then shows that the attack was effective, because Karṇa is "afflicted" (*vihvala*) and leaves the fray.

Another non-standard addition is to be found in Q71, where the information is added that Karṇa fights Bhīma to protect his son Suṣeṇa:

**Q71** 08,032.055
*punaḥ karṇas trisaptatyā bhīmasenaṃ ratheṣubhiḥ /*
*putraṃ parīpsan vivyādha krūraṃ krūrair jighāṃsayā //*

"Protecting his son and with the intention of killing him, Karṇa again wounded fierce Bhīmasena with seventy-three fierce arrows" (08,048.032 CSL; tr. Bowles).

This verse has a couple of features in addition to the word order in the *c*-pāda that betray its non-standard nature. Firstly the heterotope

150 This argument is a purely technical one. Interestingly, there is not a single line of the type *vivyādha* ⏑ ⏒ *bhallena.*

[3]*parīpsan* is an exceptional one, because it appears only once, whereas the most frequent heterotope [9]*parīpsan* occurs 8 times (the remaining ones along with their respective frequencies: [1]*p.* — 1, [5]*p.* — 3). Secondly, the *figura etymologica* in the *d*-pāda is certainly not very original, but also not common, at least in the *Mbh.*[151] Lastly, the word order is full of distant references (*trisaptatyā — ratheṣubhiḥ — krūrair, bhīmasenaṃ — krūraṃ*), which is rather unusual for the epic diction in general and for fighting scenes in particular.

In the last verse of the present group the information that Karṇa's son Vṛṣasena is hit by 60 arrows is inserted at the beginning of the *c*-pāda:

**Q72** 07,143.014

*yajñasenas tu samare karṇaputraṃ mahāratham /*
*ṣaṣṭyā śarāṇāṃ vivyādha bāhvor urasi cānagha //*

"Yajñasena, in turn, hit Karṇa's son, the great warrior, with sixty arrows on the arms and the chest, O blameless one."

While it is obvious that, given the phrase *ṣaṣṭyā śarāṇāṃ*, *vivyādha* could not stand at the beginning of the pāda for metrical reasons, it is less clear why the number of sixty was chosen. One can only suppose that it might be regarded as a signal of intensity, though this assumption is only weakly confirmed by the following stanza, where no strong effects are mentioned, Vṛṣasena only gets "very angry" (*saṃkruddho*) and fights back.

*√han.* Coming to pādas with other forms than unprefixed ones of √*vyadh,* there is only one case where the verb form *ājaghāna*, which is very frequent in *A*-HIT-*B* verses, does not appear at the beginning of the *c*-pāda (see listing above):

151 The closest parallel can be found in *strīṣu klībān niyuñjīta krūrān krūreṣu karmasu* (03,149.046cd); to this may be added: *krūrasvabhāvaṃ krūrāyāḥ* (01,059.031a) and *rākṣasaṃ krūrakarmāṇaṃ krūrakarmā ghaṭotkacaḥ* (06,043.039ab — please note that again Ghaṭotkaca appears in an unusual context). Similar verses occur thrice in the *Rm* (4,002.014cd; 6,031.005cd; 6,101.024cd) and in several Purāṇas.

**Q73** 06,060.018
*saṃdhatta viśikhaṃ ghoraṃ kālamṛtyusamaprabham /*
*tenājaghāna saṃkruddho bhīmasenaṃ stanāntare //*

"He put on an unfeathered arrow, a terrible one, resembling Time and Death, and with that one, enraged, he struck Bhīmasena on the chest."

Probably this verse should not be considered an example of the *A-HIT-B* frame at all, because it describes no "routine" shooting, so to speak, but the firing of a single, special arrow in some detail. This is a typical situation at critical points in a fight and regularly occurs in the Battle Books; the corresponding frame or frames would certainly merit a separate investigation, but this must be left to future research. Just like in many of the previous examples the effect of the shot is made explicit in the following stanza: Bhīma collapses in his chariot and loses consciousness.

The next groups of verses differ from the preceding ones in that they feature verb forms that do not appear at the beginning of a pāda at all: *abhivivyādha*, *abhyahanat*, and *ānarchat*. The first of these forms occurs in two verses of the *Ghaṭotkacavadhaparvan*, which are almost identical but for the names of the protagonists:

**Q74** 07,150.049 (≈ 07,131.051)
*tato māyāvinaṃ karṇo bhīmasenasutaṃ divi /*
*mārgaṇair abhivivyādha ghanaṃ sūrya ivāṃśubhiḥ //*

"Then Karṇa struck the son of Bhīmasena, versed in magic powers, in the sky with arrows, like the sun hits a dense cloud with his rays."

Indeed, these are (apart from 08,017.006, where elephants are the targets) the only places where the perfect form *abhivivyādha* occurs; the imperfect *abhyavidhyat* can be found six times, but only in even pādas. Also [1]*mārgaṇair* is a very rare hetorotope, which does not occur outside the quoted lines; perhaps it appears in order to produce an alliteration to *māyāvinaṃ* in pāda *a*. In view of the fact that both components of the

*c*-pāda are so infrequent one can only say that the whole pāda is quite extraordinary, fitting to the extraordinary nature of a duel, in which a man fights against a flying *rākṣasa* — a fact that is also reflected by the word *divi* that in a unique way replaces the frequent filler *raṇe* (see fn. 147).

The next two stanzas[152] feature the verb form *abhyahanat*, which (in different sandhi variants) occurs 20 times in the *Mbh*.[153] The first one closely precedes Q66, and indeed belongs to the same battle scene; Aśvatthāman manages to fix an arrow in Bhīma's forehead, before the Pāṇḍava strikes back:

**Q75** 08,011.005

*śaraiḥ śarāṃs tato drauṇiḥ saṃvārya yudhi pāṇḍavam /*
*lalāṭe 'bhyahanad rājan nārācena smayann iva //*

"After repelling those arrows with his arrows in that fight, O king, Droṇas son sneered and struck the Pāṇḍava on the forehead with an iron arrow" (08,015.005 CSL; tr. Bowles, mod.).

Because the hits on the forehead are an important feature of this duel, it is understandable why the locative *lalāṭe* occupies the first slot. The reasons for the choice of the verb are less clear, however, but one can be quite certain that the poet consciously settled on this rather unusual form.[154]

152 One verse that is quite similar to these two, but does not fully qualify as belonging to the *A*-hit-*B* frame because the objects are the vital spots not a person, may quoted here: *tasya droṇo dhanuś chittvā viddhvā cainaṃ śilīmukhaiḥ / marmāṇy abhyahanad bhūyaḥ sa vyathāṃ paramām agāt //* (07,165.026).

153 Interestingly, the corresponding perfect form *abhijaghāna* is completely absent in the *Mbh*, though with regard to the unprefixed forms *jaghāna* and *ahanat* the frequency ratio is 176/14.

154 In nine pādas, forms of *abhyahanat* or of the plural form *abhyahanan* occur that start at the third syllable of either odd or even pādas. And in the following pādas we find sandhi forms with elision of the *a* at the beginning of the word that, consequently, start at the fourth syllable, just as in Q75: 04,056.024a; 08,059.010a; 09,022.062a; 03,230.030c; 03,231.005c; 04,056.009c. It is a noteworthy fact that the majority of the latter group are located outside the Battle Books.

The last *A*-HIT-*B* verse showing the form *abhyahanat* is found in the IX[th] book, in the final duel between Sahadeva and Śakuni, shortly before the latter is beheaded:

**Q76** 09,027.045
*sa saubalam abhidrutya gṛdhrapatraiḥ śilāśitaiḥ /*
*bhṛśam abhyahanat kruddhas tottrair iva mahādvipam //*

"He then violently struck him with vulture-feathered and stone-sharpened arrows, as if hitting a great elephant with goads" (09,028.046 CSL; tr. Meiland).

Though the effects of the hits are not dwelt upon in the following verse, it seems clear that these shots are not of the average kind, but immediately precede a lethal attack, and so the verb is fittingly qualified by *bhṛśam,* "strongly". With 43 occurrences the adverb is not rare in this metrical position, but Q76 is the only example where it is directly followed by an *A*-HIT-*B* verb, so the whole pāda is certainly quite a non-standard construction, which is appropriate for the situation in which the life of one of the great villains of the *Mbh* is about to end.

Eventually, we have to discuss the pāda *śarair bahubhir ānarchat* (sandhi neutralised), which occurs five times: 06,043.036; 06,043.065; 06,058.028 (with a dual object); 06,068.025; 06,084.018. It may suffice to quote one of these verses in full:

**Q77** 06,043.065
*śrutakarmā tataḥ kruddhaḥ kāmbojānāṃ mahāratham /*
*śarair bahubhir ānarchad dārayann iva sarvaśaḥ //*

"Then Śrutakarman in a rage plastered the great warrior of the Kāmbojas with numerous arrows, wounding him everywhere" (06,045.068 CSL; tr. Cherniak).

These lines are different form the preceding ones in several respects. Firstly, the verb form *ānarchat* is almost completely polarised (though theoretically different positions in the line would be possible): [6]*ānarchat* (or one of its sandhi variants) occurs 16 times, [9]*ānarchat* only once (06,048.041b). Secondly, in terms of its distribution in the *Mbh*, [6]*ān-*

*archat* is quite localised: 13 out of 18 occurrences (including the plural form *ānarchan*) are found in Book VI.[155] As to the impact of the hits referred to by *ānarchat*, in the context of the five occurrences in question, no severe effects are mentioned. These facts suggest that the use of $^{6}$*ānarchat* in general, and of the formulaic combination *śarair bahubhir ānarchat* in particular, probably should not be regarded as a conscious shift in the standard word order, but as a possible variation that originally was in the possession, so to speak, of one author or one tradition.

#### 3.7.2.1.1.4 Last *pādas*

The S|O||V structures of the present type feature a verb in the *c*-pāda and therefore contain a full sentence extending over three pādas. But in *anuṣṭubh*s there is a fourth pāda, and so it is in order to have a look at how these eight syllables are filled. As the last pāda comes after the verb of the main sentence here, the sequence of the elements in the first three pādas is, as a rule, of no importance for it. Therefore, we may broaden our basis and include all 275 *A*-HIT-*B* stanzas (also with shower verbs) in which all the elements S, O, and V occur in the first three pādas, regardless of their sequence.

*Instrumental phrase.* In most cases the last pādas form an extension of the sentence contained in the first three pādas, but in various ways. In about one third of our sentences the *d*-pāda is occupied by words in the instrumental case (occasionally accompanied by an attribute of the subject or object, or another short element), mostly an adjective or noun that specifies the weapons mentioned in one of the previous pādas. To give just one typical example:

**Q78** 09,011.051
*dharmarājo 'pi saṃkruddho madrarājaṃ mahāyaśāḥ /*
*vivyādha niśitair bāṇaiḥ kaṅkabarhiṇavājitaiḥ //*

155 The remaining occurrences are: 03,269.011; 07,067.036; 08,010.017; 08,018.005; 09,025.011.

> "The glorious Kind of Righteousness, however, furiously pierced the king of the Madras with his sharp arrows, which were feathered with heron and peacock plumes"
> (09,012.051 CSL; tr. Meiland).

In only eight ślokas of the S|O||V type does information about weapons not appear in the first three pādas, and in six of these an appropriate element is added in the *d*-pāda.[156] This fact clearly indicates that an element representing the attacking weapon(s) is a standard constituent of an *A*-HIT-*B* śloka, whose absence therefore determines the type of the content for the last pāda to a great degree.

Apart from these cases, the poets seem to be quite free as to the content of the *d*-pāda. In the present context, it will be therefore enough to give examples for the main types of additions:

*Present participle and other verbal elements.* In about 25 cases the sentence in the first three pādas is extended by a phrase based on a present active or (in only four cases) middle participle of two or three syllables referring to the subject. The rest of the phrase is filled by elements that are too varied to be classified, but it may be noted that in almost half of the pādas the participle is followed by the particle *iva*[157]. Almost always the participle occurs at the beginning of the pāda, as in pāda *d* of Q77: *dārayann iva sarvaśaḥ*. The few exceptions from this rule can be easily explained. The participle in *pitur vadham anusmaran* (07,171.041d) is highly polarised (43 times [13]*anusmaran*, only once [1]*anusmaran [*03,195.005c*]*). The similar combinations of participle + *iva* in *jatrudeśe hasann iva* (06,065.022d), *lalāṭe vismayann iva* (08,011.007d) and *punar anyaiḥ smayann iva* (07,013.033d) may be regarded as shorter formulaic elements with a filler function — at the end of a line, the combinations *hasann iva* and *smayann iva* occur 35 and 19 times, respectively, in the *Mbh*, *vismayann iva* only twice, but it is probably only a longer variant of *smayann iva*.

156 Without instrumental adjunct: 06,112.039; 06,043.048; with adjunct in *pāda d:* 07,082.026; 08,010.001; 06,060.045; 06,107.036; 06,060.007; 06,114.041.

157 The particle *iva* is notoriously difficult to translate in such usages. The frequently used phrase "as it were" does not make much sense here. Brereton comes to the following conclusion in his analysis of *iva* in Vedic prose: "[W]ith verbs and verbal expressions, *iva* affirms that the action is true but that its realization or its extent is uncertain" (1997, p. 446).

Another type of verbal element, which occurs with a much lower frequency (5x), are absolutives. The absolutive phrases are of the same kind as those found frequently in other pādas.

In addition, three cases should be mentioned of a *genitivus absolutus* construction, all of a very popular type ⟨gen. sg. + *paśyataḥ*⟩ which occurs 67 times in the *Mbh* at the end of a hemistich, e.g., *sarvalokasya paśyataḥ* (06,060.002d).

*Place of hit.* Also in *d*-pādas which feature information about the body part where the hit took place the respective locative is normally found in the initial position, like in the following cases:

**T63.** Hit body parts in *d-pādas*

| Body part | Freq |
|---|---|
| [9]*jatrudeśe* | 3 |
| [9]*bahvor urasi ca* | 2 |
| [9]*hṛdaye* | 1 |
| [9]*lalāṭe* | 1 |

Of the three exceptions — [13]*stanāntare* (06,069.003d), [13]*mahorasi* (07,091.030d) and [12]*sarvamarmasu* (08,018.050d) — the first two are due to the fact that because of their iambic prosodic structure these locatives cannot occupy the first syllables of an even pāda.

For an example of this pāda type see Q72 above; another one mentions the part of the body that is most frequent in the present group of pādas, namely the "region of the collar bone":

**Q79** 08,056.016
*sātyakis tu tataḥ karṇaṃ viṃśatyā niśitaiḥ śaraiḥ /*
*atāḍayad raṇe śūro jatrudeśe narottamaḥ //*

"In that battle the champion Sātyaki, a superb man, struck Karṇa around the collar-bone with twenty sharp arrows" (08,078.017 CSL; tr. Bowles).

As we saw above, adding information about the affected part of the body in the *c*-pāda often suggests that the attack is particularly dange-

rous, because, as a rule, in the following lines its severe effects on the target are described. A similar regularity can be observed only in two of the verses under discussion: in Q66 where *lalāṭe* marks the beginning of one of the stereotypical poetic descriptions of a hero with arrows fixed in his forehead, and in Q68 where Nakula is wounded so severely that he collapses. But in this case the seriousness of the attack is already implied by the fact that "one barbed arrow" is used instead of a larger number (see above p. 175).

*Attribute of the subject.* In this rather small group of 11 stanzas additional information is given on the subject of the sentence. A further classification is not feasible due to the variety of solutions, but generally it is interesting to note that we have only one completely generic attribute — *sarvaśastrabhṛtāṃ varaḥ* (07,147.011) — while all the other *d*-pādas are constructed more specifically with the preceding pādas in mind; as in the following stanza, where the adjective *bhīmakarman* which in itself is not specific, is in this particular case is obviously rhetorically motivated by the preceding name of the target:

**Q80** 07,104.021
*athānyad dhanur ādāya sajyaṃ kṛtvā ca sūtajaḥ /*
*vivyādha samare bhīmaṃ bhīmakarmā mahārathaḥ //*

"Taking another bow and furnishing it with a sinew, the charioteer's son, this great warrior of dreadful deeds, hit Bhīma in the battle."

*Attribute of the object.* For *d*-pādas containing attributes of the object the remarks made with reference to the preceding group also apply, so one example may suffice:

**Q81** 07,083.015
*ārṣyaśṛṅgiṃ tato bhīmo navabhir niśitaiḥ śaraiḥ /*
*vivyādha prahasan rājan rākṣasendram amarṣaṇam //*

"With a mocking laugh Bhīma pierced the wrathful demon king with nine of his whetted shafts" (07,083.015 CSL; tr. Pilikian).

*New sentence*. In quite a few of the analysed verses the *d*-pāda forms a complete short sentence (often with implicit subject) in which an action is expressed that mostly follows as a consequence from the shooting, in five cases also a general comment by the narrator in the form of the frequent formulaic repetition *tad adbhutam ivābhavat* (77x in the *Mbh*). Also, the short sentence in the following example that reports the attacking hero's challenge to a fleeing enemy is generally quite popular (28x in the *Mbh*):

**Q82** 07,141.043

*atha duryodhano rājā bhīmaṃ vivyādha patribhiḥ /*
*pañcabhir bharataśreṣṭha tiṣṭha tiṣṭheti cābravīt //*

"Then king Duryodhana hit Bhīma with five feathered arrows, best of the Bharatas, and shouted, 'Stand! Stand your ground!'"

*Simile*. In general an extremely frequent content of odd pādas in the *Mbh* are phrases containing a simile,[158] so it is no wonder that as many as 30 of them can be found in the present collection of stanzas. A discussion of these similes from a literary point of view is outside the scope of this book, so it may suffice to point to the examples in Q74 and Q76.

*Second object or subject.* Verses where a second object or subject are introduced in the *d*-pāda must be considered borderline cases of the present selection. Most properly, they probably should be treated as, so to speak, minimal versions of sequential attacks, such as will be discussed shortly (3.7.2.2.2). In examples like Q70 the charioteer is added as a second target (which happens no less than 33 times in the *Mbh*); in the following stanza Sahadeva joins his twin brother in the attack:

**Q83** 08,040.009

*nakulas tu tataḥ kruddhas tava putraṃ trisaptabhiḥ /*
*jaghāna samare rājan sahadevaś ca pañcabhiḥ //*

158 For listings and discussions of similes in general see SHARMA 1966, ch. I; for simile formulas, see GRINCER 1974, pp. 45–46. A detailed survey of similes in Book VIII can be found in VASIĽKOV & NEVELEVA 1988 (see also VASIĽKOV 1995, p. 254–255).

"Enraged, Nakula struck your son with thrice seven arrows, O king, and Sahadeva did the same with five."

*Miscellaneous and mixed types.* There is a small number of *d*-pādas that do not fit into any of the above categories or fit into more than one. There is no need for a detailed listing, but one verse that features a combination of the latter group may be quoted where the last pāda contains both an attribute of the subject and of the object:

**Q84** 09,011.047
*tataḥ śalyo mahārāja dharmarājaṃ yudhiṣṭhiram /*
*vivyādha niśitair bāṇair hantukāmo mahāratham //*

"Śalya then pierced Yudhiṣṭhira the son of Righteousness with his sharp arrows, desiring to kill that great warrior"
(09,012.047 CSL; tr. Meiland).

### 3.7.2.1.2 O|V in pādas *c* and *d*

The next group of verses to be dealt with now comprises those that feature pure O- and V-pādas as the third and fourth pāda of a verse. Depending on the position of the subject, we can distinguish between two subgroups:

- S|–||O|V (24 ślokas)
- –|S||O|V (17 ślokas)

#### 3.7.2.1.2.1 S|– in pādas *a* and *b*

A preliminary check showed that *ab*-hemistichs of the S|O type — irrespective of whether the second hemistich features the sequence O|V or V|O, contains objects in the plural, etc. — are generally quite homogeneous, so that is it advisable to treat all such instances as one group (with ca. 130 members).

As far as elements other than the subject in pāda *a* are concerned the situation is basically the same as described above in section 3.7.2.1.1.1, therefore we can focus on the content of the second pāda. The largest groups in terms of syntactic elements are:

*Absolutives (20%).* In these cases various absolutives add information about a second action prior to the shot, e.g.:

**Q85** 06,087.029ab *evam uktvā tu haiḍimbo mahad visphārya kārmukam*
**Q86** 08,017.034ab *duḥśāsanas tadā rājaṃś chittvā cāpaṃ mahāhave*

*Instrumental adjuncts (40%).* The most frequent elements in *b*-pādas of the present type are instrumental adjuncts that are mostly composed of a noun denoting some type of arrow and an adjective referring to it. Many different combinations occur which would have to be addressed in the broader context of weapon types, which cannot be done here; so a few examples may suffice:

**Q87** 06,097.011b *niśitaiḥ sāyakais tribhiḥ*
**Q88** 08,042.029b *śaraiḥ saṃnataparvabhiḥ*
**Q89** 07,091.030b *mārgaṇair bhārasādhanaiḥ*

*Others.* In addition to the ones just discussed we find a variety of elements that do not lend themselves to categorisation; it can nevertheless be said that their common denominator lies in the function of completing the phrase started in the first pāda, as in the following lines:

**Q90** 08,009.026ab *sātyakiḥ samare viddhaḥ kekayena mahātmanā*
**Q91** 06,102.040ab *tato bhīṣmaḥ kuruśreṣṭhaḥ siṃhavad vinadan muhuḥ*

### 3.7.2.1.2.2 –|S in pādas *a* and *b*

Just as in the previous section all hemistichs of the this type will be included in the analysis, regardless of the sequence of verb and object in the second half of the verse.

In about 90% of the *b*-pādas (76 out of 85) the subject is located at the beginning; the rest of the pāda is then filled by a non-essential element, mostly an attribute (e.g., 11 times *mahārathaḥ).* The 15 or so verses with the subject at the end of the second pāda do not form a uniform group, being a collection of ślokas that for the most part deviate in various ways from average *A*-HIT-*B* sentences. Let us only draw attention to the following, seemingly unremarkable verse:

**Q92** 06,065.015
*saṃmuhyati tadā sainye tvaramāṇo dhanaṃjayaḥ /*
*bhīṣmaṃ śarasahasreṇa vivyādha raṇamūrdhani //*

"Then, while the army was perplexed, Arjuna hit Bhīṣma with a thousand arrows in the front of the battle."

Here we find the only present participle form of the verb *saṃ√muh* in the whole *Mbh* (whereas its past perfect participle *saṃmūḍha* occurs 25 times); in addition, an *ablativus absolutus* in the first pāda is not a very common choice.

As far as the first pāda is concerned, in about half of the cases an absolutive can be found, the stock phrase *athānyad dhanur ādāya* alone occurring 21 times (with minor variants). Much more unusual and therefore from the point of view of versification more interesting is the following verse:

**Q93** 08,040.049
*athāparān mahārāja sūtaputraḥ pratāpavān /*
*jaghāna bahusāhasrān yodhān yuddhaviśāradaḥ //*

"Then, great king, the charioteer's glorious son killed other warriors in the many thousands, the battle-hardened man"
(08,056.047 CSL; tr. Bowles, mod.).

The mutual distance of the three underlined syntactically combined words is quite unusual for the style of the *Mbh*. Therefore it could be very rewarding to systematically collect verses like this one and those quoted in fn. 139.

### 3.7.2.1.2.3 O-c-pādas

A look at the evidence shows that for the structure of the last two pādas containing object and verb it is irrelevant where in the first half the subject is placed — what is more, even without a subject in the first hemistich the structure of the O- and V-pādas does not differ systematically; we can therefore discuss all 55 examples of this kind in *A*-HIT-*B* verses, not just where we have a complete sentence in one line.

This group of pādas is more homogeneous than most others. In as many as 40 of them can be found a combination of the object with one or two instrumentals referring to the weapons used and, in all but four exceptions,[159] containing a numeral or equivalent expression (see below section 3.7.2.2.3) such as:

**Q94** 08,045.008c *vāsudevaṃ tribhir bāṇair*
**Q95** 07,067.040c *vāsaviṃ navabhir bāṇair*
**Q96** 06,065.015c *bhīṣmaṃ śarasahasreṇa*

In only four instances is the sequence of object and instrumental group reversed.[160] In three cases this can be explained by the metrical structure of the names concerned, their polarisation or by the use of unusual types of arrows, but one case is truly exceptional, because as in Q71 (p. 176) we have an instance of *Sperrung*:

**Q97** 06,057.018c *tribhiḥ śāradvataṃ bāṇair.*

In 15 pādas there is no instrumental group, but here, in all but one very unusual case (06,079.032), there are instrumentals in other pādas (mostly the fourth). Differently from the findings in the S|O||V type (3.7.2.1.1.2), there seems to be no formal rule for the absence of an instrumental phrase in the O-pāda. It is notable, however, that 73% or 11 out of 15 examples without such a phrase are to be found in Book VI.

### 3.7.2.1.2.4 V-*d*-pādas

A preliminary analysis of all 426 *d*-pādas in the Battle Books in which a verb of hitting occurs (so not only of those belonging to the basic A-HIT-B frame) showed that the shape of the *d*-pādas is, as a rule, influenced by the preceding pādas, especially by its respective *c*-pādas. Due to the wide variety of elements and sequences to be found in the first three pādas, a comprehensive treatment would be a major and rather impractical task that, at any rate, will not be attempted here. So only the V-*d*-pādas oc-

159 07,028.036; 07,031.058; 07,110.037; 09,026.032.
160 06,057.018; 08,015.019; 09,011.030; 09,020.016.

curring after the O-*c*-pādas discussed in the preceding section will be taken into account.

The most important factor for the shape of the last two pādas is the instrumental phrase. For the poets, information about the weapons used in the attack seems to have been an almost indispensable element of the *A*-HIT-*B* frame. As a consequence, in most cases where this information does not appear in the first line of a stanza, it is supplied in the second one. As we have seen, the standard solution for ||O|V lines, to be found in 40 of 55 hemistichs, is an instrumental group in pāda *c*. In these cases all the essential elements other than the verb and the quasi-essential instrumental phrase are already present in the first three pādas, so that the poet has maximal freedom as regards the syllables in pāda *d* that remain to be filled out in addition to the verb. Therefore it is interesting to observe that in 21 pādas a locative denoting the place where the hit took place is added, specifically:

- *bāhvor urasi cār(d|p)ayat* (10x)
- *vivyādha hṛdaye bhṛśam* (3x)
- *ājaghāna stanāntare* (2x)
- *abhyavidhyat stanāntare* (2x)
- *sarvamarmasv atāḍayat* (2x)
- *bhruvor madhye vyatāḍayat* (08,044.017d)
- *jatrudeśe samārdayat* (08,017.063d)
- *dakṣiṇe bhuje* (08,045.008d).

In 11 pādas a word in the instrumental case referring to or denoting weapons is added, thus establishing a bridge structure (see p. 168 above)[161] or *Sperrung*, as in the following examples (underlined):

**Q98** 06,114.043
*tataḥ prahasya bībhatsur vyākṣipan gāṇḍivaṃ dhanuḥ /*
*gāṅgeyaṃ <u>pañcaviṃśatyā kṣudrakāṇāṃ</u> samarpayat //*

"Then, laughing out, Arjuna raised his bow Gāṇḍiva and hit Gaṅgā's son with fifty small arrows."

161 A particularly long bridge is to be found in *duryodhanas tu <u>daśabhir gārdhrapatraiḥ</u>*
*<u>śilāśitaiḥ</u> / bhīmasenaṃ maheṣvāsaṃ <u>rukmapuṅkhaiḥ</u> samarpayat* // (06,069.016).

**Q99** 06,080.007

*ketuṃ nipatitaṃ dṛṣṭvā śrutāyuḥ sa tu pārthivaḥ /*
*pāṇḍavaṃ viśikhais tīkṣṇai rājan vivyādha saptabhiḥ //*

"Seeing that the banner had fallen, Śrutāyus, that lord of the earth, hit the Pāṇḍava with seven sharp arrows, O king."

In the rest of the *d*-pādas with an instrumental phrase in pāda *c* there are (mostly) fillers and some individual solutions.

Coming to verses with no words referring to the weapons used, either in pāda *c* or in the preceding ones, this information is always added in pāda *d* (with the one exception already mentioned of 06,079.032). In the following verse and in three others this is done with the help of the template °*vivyādha* ⏑ ⏑ – *śaraiḥ*, which overall occurs 30 times in the *Mbh*:

**Q100** 06,112.033

*so 'nyat kārmukam ādāya rājaputro bṛhadbalaḥ /*
*phālguniṃ samare kruddho vivyādha bahubhiḥ śaraiḥ //*

"Enraged, taking another bow, Prince Bṛhadbala hit Arjuna with many arrows in the battle."

The above description of the evidence does not allow for the formulation of any strict rules. The most that can be said is that the type of line featuring information about the weapons in pāda *c* and about the place of the hit in pāda *d* is a kind of standard and that the absence of an instrumental phrase in pāda *c* (and the preceding pādas) prompts its addition in pāda *d*. The constructions using bridges and *Sperrung* indicate that, at least as far as these lines are concerned, the frame behind it has an extension of at least two pādas.

Looking at the verb forms that appear in pāda *d*, the strong connection of certain verbs with certain locatives of body part expressions is striking. This is not only a feature of the subgroup of V-*d*-pādas under discussion because checking all V-*d*-pādas in the Battle Books in which these locatives occur we find some quite rigid correlations: see T64.

**T64.** Combinations of verb and body part loc. in V-*d*-pādas of the BB

| V-*d*-pāda | Freq. | V-*d*-pāda | Freq. |
|---|---|---|---|
| *bāhvor urasi cār(d\|p)ayat* | 20 | *marmadeśe samardayat* | 1 |
| *ājaghāna stanāntare* | 10 | *marmaṇy āśu jaghāna ha* | 1 |
| *sarvamarmasv atāḍayat* | 6 | *punar vivyādha corasi* | 1 |
| *vivyādha hṛdaye bhṛśam (1x dṛḍham)* | 5 | *rājan vivyādha vakṣasi* | 1 |
| *abhyavidhyat stanāntare* | 3 | *taṃ vivyādha stanāntare* | 1 |
| *bhṛśaṃ marmaṇy atāḍayat* | 2 | *abhyahan dakṣiṇe bhuje* | 1 |
| *(bhṛśaṃ\|gāḍhaṃ) vivyādha marmaṇi* | 2 | *avidhyad dakṣiṇe bhuje* | 1 |
| *lalāṭe samavidhyata* | 2 | *avidhyata bhujāntare* | 1 |
| *lalāṭe tribhir ārpayat* | 1 | *bhruvor madhye samārdayat* | 1 |
| *lalāṭe vai samarpayat* | 1 | *bhruvor madhye vyatāḍayat* | 1 |

**T65.** Verbs of hitting and showering in pure V-*d*-pādas

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|
| *vivyādha* (48) | | | | | | śaraiḥ (25) | |
| *avidhyat* (5) | | | | | | | |
| *(jaghāna)* (7, mostly = "to kill") | | | | | | | |
| *abhyavidhyat* (4) | | | | | | | |
| *ājaghāna* (16) | | | | stanāntare (10) | | | |
| *avidhyata* (2) | | | | | | | |
| *prāvidhyata* (1) | | | | | | | |
| *pīḍayām āsa* (4) | | | | | | | |
| punar (15) | | *vivyādha* (24) | | | saptabhiḥ (15) | | |
| rājan (6) | | | | | | | |
| | | | *ārdayat* (1) | | | | |
| | | | *samatāḍayat* (2) | | | | |
| | | | *samavidhyata* (2) | | | | |
| | | | | *avidhyata* (1) | | | |
| sarvamarmasv (6) | | | | *atāḍayat* (17) | | | |
| | | | | *vyatāḍayat* (1) | | | |
| | | | | *sam(a\|ā)r(d\|p)ayat* (23) | | | |
| bāhvor urasi ca- (20) | | | | | *(a\|ā)r(d\|p)ayat* (23) | | |

It therefore looks as though at least for the more frequent expressions is is better not to regard them as a combination of two independent elements (verb + body part locative) but as fixed formulaic repetitions.

Coming now to the overview table T65 of all relevant verb forms in pure O-*d*-pādas and comparing them with those listed above in T61 (p. 171), one can clearly see the effect of the, so to speak, "technical" shifting of the verb phrase from pāda *c* to *d*. On a small scale it is thus possible to study the reasons for the semantic levelling of verbs of hitting in general and the uneven distributions recorded in table T49 (p. 147).

### 3.7.2.2 Additions and variations

The verses discussed so far represent the basic patterns of simple *A*-HIT-*B* verses that, however, account for less than one third of all verses where a verb of hitting occurs. It would be pointless to record all occurring frames and subframes; instead some chosen aspects will be explored. First, the addition of small verbal phrases to the main sentence; second, the modification of the basic *A*-HIT-*B* frame, leading to another, cognate kind of epic frame; and third, the multitude of expressions for the used weapons used that result from variations in type and number.

#### 3.7.2.2.1 Absolutives and present participles

Two types of verb forms are mainly used to insert verbal phrases with the maximum length of a pāda into sentences formed with verbs of hitting: absolutives and present active participles.

##### 3.7.2.2.1.1 Absolutive phrases

Absolutives are one of the standard means in Sanskrit to expand a sentence, so it is only to be expected that they also appear in *A*-HIT-*B* frame sentences. In fact more than one third of the verses formed with a verb of hitting (435 verses) contain one or two absolutives (393 and 41 occurrences, respectively); and in one verse (06,116.022), a three-liner, we even encounter three absolutives. Here is a list of the most frequent absolutive forms in these stanzas; in addition the remarkably high number of about 80 absolutives that occur only once should be noted.

**T66.** Frequent absolutives in verses containing a verb of hitting

| Absolutive | Freq. | Absolutive | Freq. |
|---|---|---|---|
| *viddhvā* | 72 | *kṛtvā* | 15 |
| *ādāya* | 48 | *uktvā* | 14 |
| *chittvā* | 44 | *āsādya* | 12 |
| *dṛṣṭvā* | 23 | *samāsādya* | 10 |
| *hatvā* | 16 | *saṃvārya* | 9 |

In the present context it will suffice to deal with those absolutives that occur with a certain frequency and which may establish more or less fixed structures. In particular, we will restrict our discussion to such absolutives that occur in verses containing a verb of hitting non-proportionally much more often than in other parts of the Battle Books, i.e., specifically the first three items on the above list:

- *viddhvā*
- *ādāya*
- *chittvā.*

Every pāda type from *a–d* will be examined in turn, but only the most frequent phrases can be discussed.

a-*pādas*. The following three types of absolutive phrases are the most common ones in *a*-pādas:

- *athānyad dhanur ādāya* (54x, with variant: *tato 'nyad)*[162]
- *tasya* + S + *dhanuś chittvā* (11x)
- O + other elements + *viddhvā*

The first one, quite characteristic of *A*-HIT-*B* verses, is a proper formulaic repetition. Its original context is a situation where one bow of a hero has been destroyed, and who, therefore, is forced to take another one in order to continue the fight. This new action is introduced by the usual particle *atha*, and the whole phrase takes up one full pāda, so that

162 There is a sister expression with a synonym, *so 'nyat kārmukam ādāya*, which occurs (with slight variants) 19 times in the Battle Books, but only once in Book VII.

the main sentence can start in the second pāda with a subject phrase, which (with only a few exceptions)[163] comprises an attribute in addition to a substantive and so has pāda length (e.g., *sātyakiḥ satyavikramaḥ*). In most cases the verb is located in the *c*-pāda, often together with the object, but no rules concerning the distribution of object, verb, and instrumental adverbial over the second half of the śloka are distinguishable, so it seems that the absolutive phrase is a rather isolated element that may conveniently be used to open a verse, but does not form part of any larger stable pattern. To quote one typical example:

**Q101** 06,073.064
*athānyad dhanur ādāya pārṣataḥ paravīrahā /*
*droṇaṃ vivyādha saptatyā rukmapuṅkhaiḥ śilāśitaiḥ //*

"Taking another bow, Dhṛṣṭadyumna the killer of enemy heroes hit Droṇa with seventy gold-knocked, stone-whetted shafts."

The second expression with an absolutive, which belongs to the template type, refers to a similar situation as the first one, but from the view of the warrior (mostly Arjuna) who has just managed to cut the bow of his enemy. In terms of word order, the big difference to the expression discussed first consists in the fact that the subject is located in the same pāda. This leaves plenty of space to distribute the remaining elements of the sentence over the other three pādas, and indeed we find — in stark contrast to the stereotyped beginning — a great variety of very different continuations. Thus a random example must suffice here:

**Q102** 08,017.057
*tasya karṇo dhanuś chittvā svarṇapuṅkhaiḥ śilāśitaiḥ /*
*triṃśatā parameṣvāsaḥ śaraiḥ pāṇḍavam ārdayat //*

"Karṇa, a superb archer, splintered his bow and pummelled the Pāṇḍava with thirty stone-sharpened arrows with golden nocks" (08,024.010 CSL, tr. Bowles).

163 06,109.029b; 07,024.012b; 07,137.017b.

Phrases with *viddhvā*, the third item on our list, are almost exclusively used in different types of sequential events and will therefore be exemplified in the next section.

b-*pādas.* The type of absolutive phrase most frequently occurring in the second pāda of the sentences under discussion can be found after a first pāda containing both subject (mostly in initial position) and object; it starts with *viddhvā* and is completed by a numeral and a substantivised adjective designating the kind of weapon, both in the instrumental plural, as in the following example:

**Q103** 07,142.002
*sahadevas tu rādheyaṃ viddhvā navabhir āśugaiḥ /*
*punar vivyādha daśabhir niśitair nataparvabhiḥ //*

"Having hit Rādhā's son with nine fast shafts, Sahadeva hit him once more with ten flat-jointed arrows."

Those combinations of these elements that occur are listed in the following table (frequencies in parentheses):[164]

**T67.** Combinations of *viddhvā* with *āśughaiḥ* and *āyasaiḥ*

| | | |
|---|---|---|
| [9]*viddhvā* | *daśabhir* | *āśugaiḥ* (2) |
| | *navabhir* | *āyasaiḥ* (2) |
| | | *āśugaiḥ* (3) |
| | *pañcabhir* | *āyasaiḥ* (5) |
| | | *āśugaiḥ* (6) |
| | *saptabhir* | *āśugaiḥ* (6) |
| | | *āyasaiḥ* (1) |

In the second half of the śloka different solutions occur, but the continuation *punar vivyādha* + NUMERAL (present in the example given above) can be observed five times, which may be compared to a similar *c*-pāda pattern, but more on this in a moment. In a certain sense, this can be treated as the shortest version of a sequential attack (see next

164 In sentences outside the *A*-HIT-*B* frame we find in addition *bahubhir āyasaiḥ* and *saptabhir āyasaiḥ* (but only once, in 08,017.065) .

section): attacking the same enemy twice in a row, with a different number of arrows.

A less common pattern where *viddhvā* occurs in the middle position, after a disyllabic object, may be seen as a variation of the first type. To quote just one example:

**Q104** 08,039.011
*sātyakiḥ pañcaviṃśatyā drauṇiṃ viddhvā śilāmukhaiḥ /*
*punar vivyādha nārācaiḥ saptabhiḥ svarṇabhūṣitaiḥ//*

"After wounding Droṇa's son with twenty-five stone-tipped arrows, Sātyaki wounded him again with seven gilded iron arrows" (≈ 08,055.012 CSL; tr. Bowles, mod.).

*c-pādas.* Just as in the *b*-pāda, also in the *c*-pāda of verses containing a verb of hitting *viddhvā* is the most frequent absolutive; it predominantly (17 times) appears at the end of the pāda, but quite frequently (10 times) also at its beginning, as may be illustrated by the following verses:

**Q105** 09,021.023
*athānyaṃ ratham āsthāya dharmarājo yudhiṣṭhiraḥ /*
*śakuniṃ navabhir viddhvā punar vivyādha pañcabhiḥ //*

"Standing on this new chariot, Yudhiṣṭhira, the son of Righteousness, pierced Śakuni with nine arrows and then again with five more" (09,022.023 CSL; tr. Meiland).

**Q106** 07,013.033
*sātyakiḥ kṛtavarmāṇaṃ nārācena stanāntare /*
*viddhvā vivyādha saptatyā punar anyaiḥ smayann iva //*

"Sātyaki pierced Kṛtavarman in the centre of his chest with an iron arrow then struck him with seventy more and all the while wore a mocking smile" (07,014.035 CSL; tr. Pilikian).

In the former case *viddhvā* is commonly preceded by the object and an instrumental adverbial, almost always a numeral. As far as the other pādas are concerned, the subject is mostly located in the *b*-pāda, the

main verb in the last pāda. Here also, we mainly have to do with sequential attacks, which will be discussed in a moment.

d-*pādas.* As absolutive phrases usually precede the main verb, it is to be expected that only comparatively few of them will be found in the last pāda: 18 in all the verses under scrutiny. None of them, moreover, is frequent enough to establish any kind of pattern.

#### 3.7.2.2.1.2 Present participle phrases

Present participles are found in just about 10% (129 occ.) of stanzas formed with a verb of hitting. They are more frequent in even pādas, especially in *d*-pādas (see above p. 182 f.), and appear both at the beginning and at the end, but only seldom in the middle.

The most popular participles are *prahasan* (22x) and *smayan* (16x), which — as many other participles — fulfil a quasi-adverbial function. Several examples have already been cited: see Q65, Q66, Q75, and Q106.

Apart from these quite popular expressions there are many single, original solutions, which in total make up more than 50% of the occurrences. Just as in the quoted verse, the vast majority of present participles form short additions of 2–5 syllables in length (including *iva*), quite rarely (< 10%) are accompanied by an object (like in *samrakṣan sātyakiṃ rājan* [06,065.023c]) and are not involved in larger formulaic structures

### 3.7.2.2.2 Sequential attacks

The generic term "sequential attack" will be used to denote a type of pāda sequences (of different lengths, from two to several lines) where several attacking actions are described that follow quickly one after the other.[165] In the strict sense, each element of the sequence takes no more than one pāda, and only sometimes is an additional pāda, e.g., containing the main verb, inserted; mixed types, where pāda-length phrases are combined with one-liners of the type discussed in section 3.7.1.5, also occur, but will be ignored here.

165 Cf. von Simson's (strongly negatively valued) analysis of types I and II from a literary perspective (1974, pp. 177–181).

Four main types of sequential attack can be distinguished (only short examples will be given):

I. Several enemies in turn attack one hero, each one with a specified number of arrows: 37 ślokas (6 of which are three liners).

**Q107** 06,051.007
*ārjuniṃ tu tatas tūrṇaṃ drauṇir vivyādha patriṇā /*
*śalyo dvādaśabhiś caiva kṛpaś ca niśitais tribhiḥ //*

(Following on Q108:) "Then Droṇa's son pierced the son of Arjuna with a feathered arrow. Śalya also wounded him with ten arrows, and Kṛpa with three sharp arrows"
(06,055.007 CSL; tr. Cherniak).

II. One hero attacks several enemies in turn, each time with a specified number of arrows: 64 ślokas.

**Q108** 06,051.006
*sa śalyaṃ pañcaviṃśatyā kṛpaṃ ca navabhiḥ śaraiḥ /*
*aśvatthāmānam aṣṭābhir vivyādha puruṣarṣabha //*

(Preceding Q107:) "That bull-like man wounded Śalya with twenty-five arrows, Kṛpa with nine and Aśvatthāman with eight"
(06,055.006 CSL; tr. Cherniak).

III. One hero attacks one enemy with a succession of "salvoes", each one consisting of a specified number of arrows (see Q103).

IV. The destruction of several entities closely connected to an opponent: his bow, his charioteer, his chariot-pole, his banner, and his horses (see below p. 211).

**Q109** 08,055.053–055
*tad apāsya dhanuś chinnaṃ saubaleyaḥ pratāpavān /*
*anyad ādatta vegena dhanur bhallāṃś ca ṣoḍaśa //*
*tais tasya tu mahārāja bhallaiḥ saṃnataparvabhiḥ /*
*caturbhiḥ sārathiṃ hy ārcchad bhīmaṃ pañcabhir eva ca //*

*dhvajam ekena ciccheda chatraṃ dvābhyāṃ viśāṃ pate /*
*caturbhiś caturo vāhān vivyādha subalātmajaḥ //*

"Discarding his split bow, Subala's glorious son quickly grabbed another bow and sixteen broad-headed arrows. With two of those smooth-jointed broad-headed arrows he attacked his driver, great king, and with seven Bhīma. With one he cut down his banner and with two his parasol, lord of people, and with four that son of Subala ran through his four horses"
(08,077.055–057 CSL, tr. Bowles).

Here we will focus on the first two types, specifically on those pādas that contain both essential elements: (1) an instrumental adjunct consisting of a numeral (and sometimes also a noun specifying the type of weapon) in the instrumental case (= $Ad_{Instr}$); (2) the subject or direct object, depending on the type (I or II) of sequential attack. The usual order is S—$Ad_{Instr}$ for type I and O—$Ad_{Instr}$ for type II.

Taking, as before, the hero's name to be fixed from the beginning, there are two main options for variation:

- order of elements
- number of weapons.

As a further, minor possibility one may regard the addition of particles, mostly *ca* or *tu*. The usage of numerals will be taken up in the next section. As far as the order of the main constituents is concerned, it can generally be said that in all pāda types the standard word order is subject + instrumental adjunct (for type I) or object + instrumental adjunct (for type II); though there are some exceptions which generally follow the patterns that can be observed in pādas containing both a subject or object and an instrumental adverbial in the form of a numeral.

#### 3.7.2.2.2.1 Many on one

As just stated, the usual order for the constituents in pādas of this type is S—$Ad_{Instr}$, but there are some exceptions, whose number varies considerably depending on the pāda type, as can be seen in the following table:

**T68.** Inverse word order in many-on-one sequential attacks

| Pāda type | Freq. |
|---|---|
| *a*-pāda | 3 |
| *b*-pāda | 1 |
| *c*-pāda | 6 |
| *d*-pāda | 2 |

Of these, the exceptions in pādas *b* and *d* can easily be explained by the metrical structure of the heroes' names: *ghaṭotkacaḥ*, *duryodhanaḥ* and *duḥśāsanaḥ,* at the beginning of a pāda and followed by one of the commonly used numerals in all sandhi forms yield the sequence $^{2}– \breve{} –$, which is impossible at the beginning of an even pāda, so inversions like *saptabhiś ca ghaṭotkacaḥ* (07,090.012b) are forced (similarly, 07,036.018d and 07,145.016d).

The cases with inversion in the odd pādas are not quite so clear. There is no problem to explain the changed word order where the trisyllabic nouns *nakula* (2x) and *śakuni* occur; these cannot stand after *taṃ* because two short syllables in second and third position ($^{2}\breve{} \breve{}$) are not allowed. In those instances with tetrasyllabic names, in contrast, no formal reason for the rare word order can be seen. Consider the following example:

**Q110** 07,120.079
*caturbhiḥ sindhurājaś ca vṛṣasenaś ca saptabhiḥ /*
*pṛthak pṛthaṅ mahārāja kṛṣṇapārthāv avidhyatām //*

"The Sindhu king with four and Vṛṣasena with seven arrows each — so these two hit Kṛṣṇa and Pṛthā's son."

Here one could simply change the number of verses and put a numeral like *viṃśatyā* after S + particle, in our example: **sindhurājaś ca viṃśatyā.*

Looking at other features we may sometimes classify a line as rather exceptional on other counts also; e.g., in the cited verse we find the only occurrence of *caturbhiḥ* in sequential attacks and a rare dual. But in most of the remaining cases no other signs of exceptionality seem to be evident other than the inversion itself, so in odd pādas, especially in

*c*-pādas, it should probably be regarded as a more or less freely available means of occasional variation; in contrast, inversion in even pādas seems to occur only (or mostly) as a reaction to metrical exigencies.

#### 3.7.2.2.2.2 One on many

In this type of sequential attack the standard order of constituents is O—$Ad_{Instr}$, but a few exceptions can be found that are worthy of discussion. The pattern is a bit different from the one just observed:

**T69.** Inverse word order in one-on-many sequential attacks

| Pāda type | Freq. |
|---|---|
| *a*-pāda | 1 |
| *b*-pāda | 11 |
| *c*-pāda | 4 |
| *d*-pāda | 4 |

The one exception in the *a*-pāda is dubious for different reasons. It occurs in a passage that is not a standard sequential shooting, but enumerates several feats by Droṇa:

**Q111** 07,020.043–044
*śikhaṇḍinaṃ dvādaśabhir viṃśatyā cottamaujasam /*
*vasudānaṃ ca bhallena preṣayad yamasādanam //*
*aśītyā kṣatravarmāṇaṃ ṣaḍviṃśatyā sudakṣiṇam /*
*kṣatradevaṃ tu bhallena rathanīḍād apāharat //*

"Twelve arrows [he sent] at Śikhaṇḍin and twenty at Uttamaujas and with a barbed tip he ushered Vasudana into Death's realm. Eighty [found] Kṣatradharman and six and twenty Sudakṣina and with another hooked shaft he knocked Kṣatradeva from the seat of his car"
(07,021.055–056 CSL; tr. Pilikian [brackets added]).

The first śloka features the obvious problem that the verbal expression "sent to Yama's abode" cannot also refer to Śikhaṇḍin, because this hero will be killed by Aśvatthāman only much later (10,008.060–61), and

Uttamaujas continues to play a role in the battle as well; so it seems that in the first half we have to understand a verb of hitting, such as added by Pilikian in his translation. Analogously, this might also be true for the first line of the second verse, so that Kṣatravarman and Sudakṣiṇa would be hit by 80 and 26 arrows, respectively, whereas only Kṣatradeva is knocked off his chariot by a single shot. Still, this amounts to a slightly awkward and unusual construction. In addition, one might add two other peculiarities of this passage: firstly, the formulaic expression *bhallena rathanīḍād apāharat* (varian: 2x *apātayat*) in all seven remaining examples does not refer to a hero, but to a charioteer; secondly, only in these two lines (out of 69 occurrences) is [6]*bhallena* combined with a name. In view of these facts the inversion of instrumental element and object appears as just another exceptional feature.[166] From a metrical point of view *kṣatravarmāṇam* might well have been placed at the beginning of the pāda, though then it would have to be combined with a different numeral, e.g., *kṣatravarmāṇam ekena* (as in 06,045,10a).

In the *b*-pāda we have a remarkable number of ten inversions. Six of them can easily be explained by the metrical structure of the names involved *(sudakṣiṇam, vṛkodaram, bṛhadbalam, śikhaṇḍinam, janārdanam, viviṃśatim)*, because they are tetrasyllabic and feature an iambic structure in the first three syllables. From this it follows that in order to appear at the beginning of an even pāda their fourth syllable must be short, because an opening of the form [9]⏑ – ⏑ – is not permitted in even pādas and this in turn, taking account of sandhi, would entail the following numeral form having to start with a vowel and feature [13]⏑ – ⏑ as the metrical structure of its first three syllables — but no such numeral form occurs in the whole *Mbh*.

With the two inversions featuring a pentasyllabic noun form (2x *viṃśatyā cottamaujasam)* the situation is similar: here a numeral form would be required that starts with a vowel and whose first two syllables had the metrical structure [14]– ⏑. In this case, there is at least one word that would fit the bill: *aṣṭabhiḥ*. It is even used to solve a similar problem, because in three of its six occurrences (once as the variant *aṣṭābhiḥ*) we

166 It is not surprising that the critical apparatus shows the passage to be rather problematic; among other things, it is completely or partly omitted in several manuscripts.

find it in the combination *[9]kṛtavarmāṇam aṣṭabhiḥ*.[167] Nevertheless, the inversions can certainly be regarded as motivated by the very limited choice.

As far as the three trisyllabic names *sātyaki, duḥsaya, and sūtaja* are concerned, no special reason for the exceptional word order could be discerned.[168]

Just as in the one-on-many type, there is no metrical reason for the inversions in pāda *c*, so a stylistic motivation has to be assumed.

In *d*-pādas, we find three tetrasyllabic names with an iambic structure (2x *śikhaṇḍin, uttamaujas*) that raise the same versification problems as just explained in connection with *b*-pādas. The fourth exception occurs in 08,012.028d:

**Q112** 08,012.027–028

*tasyārjunaḥ susaṃkruddhas tribhir bhallaiḥ śarāsanam /*
*cicchedāthānyad ādatta drauṇir ghorataraṃ dhanuḥ //*
*sajyaṃ kṛtvā nimeṣāt tad vivyādhārjunakeśavau /*
*tribhiḥ śarair vāsudevaṃ sahasreṇa ca pāṇḍavam //*

> "Furious, Arjuna splintered his bow with three broad arrows. Droṇa's son grabbed another, more terrible bow and, stringing it in an instant, pelted Arjuna and Keśava again — Vāsudeva with three hundred arrows and the Pāṇḍava with a thousand" (08,016.032 CSL, tr. Bowles).

This stanza is unusual in at least two respects: first, what is depicted is not a sequential, but rather a double attack; second, it features the only appearance of the exorbitant number of 1000 arrows, which is normally used with verbs of showering, in similar contexts.

To sum up this analysis of non-standard word orders in sequential attacks, it was possible to establish that most exceptions occur due to the metrical structure of the names involved; examples of apparently free, stylistically motivated variation are comparatively rare and can mostly be found in *c*-pādas.

167 06,045.034d; 06,109.008b; 06,109.030d.

168 07,020.045b; 07,096.035b; 08,033.018b. In fact, *duḥsaha* appears at the standard position in 07,092.007b.

#### 3.7.2.2.3 Types and numbers of arrows

Even in the purposefully restricted selection of the verses discussed so far it has become quite clear how versatile the epic versification technique is. Apart from shuffling the words around both inside and across pādas, this is chiefly due to the vast amount of optional elements the poet may add if there are some syllables left — and there almost always are. The largest group of these elements has not been discussed so far: words, specifically, nouns, adjectives and numerals, referring to weapons. From a syntactic and semantic perspective these elements are optional, in the sense that in a verb of shooting or hitting the use of a suitable weapon is implied, but as a matter of fact they occur in almost 90% of sentences formed with these verbs, so that they can be considered as "near-essential" elements. A comprehensive treatment of all of these elements and their use would require a separate study; but it should suffice for the present purposes (and may be useful for future ones) to collect all the relevant items for the first time and to identify certain structures related to versification. The power of variation in the arrow vocabulary has two roots that will be discussed in turn because, as will be seen, their mutual relationship is quite strong: the multitude of arrow types employed and the fact that they are used in large variable numbers.

##### 3.7.2.2.3.1 Types of arrows

It must be underscored that actual differences between different types of arrows — as to shape, material, construction, etc. — are not at stake here. There certainly is a tendency in the *Mbh* to treat at least some arrow designations as contextual synonyms, but this cannot be regarded as a general rule. Here only formal aspects of their use will be recorded and discussed. This will be done only on the basis of occurrences in the Battle Books because an explorative analysis showed that the use of the same words often differs considerably between this part of the *Mbh* and other textual regions.

It will be helpful to first give a list of the most frequent words denoting arrows or other missiles, along with the frequency of their forms in the instrumental case (separately for singular and plural) and in the genitive plural when dependent on a numeral in the instrumental plural.

(A distinction into singular and plural was made because of the different prosodic properties of both forms; but it is also important regarding semantic aspects, as a tendency to be used in the singular implies a special, heavy kind of arrow.) Some adjectives frequently accompanying the nouns under discussion, and sometimes acting as nouns themselves, have also been included.

The full list (accessible at SELLMER 2015) contains no less than 160 words with 3,300 occurrences in the Battle Books. In order to at least see how the most important of them are used in versification the four following tables, each for one pāda type, have been prepared. They show the verse position of the most common expressions for arrows in the instrumental case with frequencies in parentheses. If certain other words regularly occur together with a given heterotope, they are shown together with their frequencies in the appropriate slots. Numerous bits of information are contained in these tables that might be worthy of closer investigation, but now only the major points will be addressed.As usual, the metrical differences between odd and even pādas clearly leave their mark. Comparing the words that occur at the end of the respective two pāda classes we find different sets of instrumental forms.

Because of the many forms involved it is difficult to say exactly which of them are "parallel" in Grincer's sense, but [7]*bāṇaiḥ* and [15]*śaraiḥ*, [6]*śīladhautaiḥ* and [14]*śilāśitaiḥ,* and the combinations [5]*śaraiḥ tīkṣṇaiḥ* and [13]*śitaiḥ śaraiḥ* should be quite clear cases; in a certain sense one might also say that the two *sets* of expressions occurring in the cadences of odd and even pādas, respectively, are parallel in a general sense. Another picture shows itself in the opening syllables of both pāda classes: here, most words occur both in odd and in even pādas with comparable frequencies, but with some exceptions. Many common combinations of certain arrow words at certain positions with certain numbers and adjectives can be found, some extending over a whole pāda, but most forming shorter units; other nouns, in contrast, like [14]*sāyakaiḥ* or [1/9/6]*nārācaiḥ* mostly stand alone.

**T70.** Arrows and other missiles

| Arrow word | Freq. | | Arrow word | Freq. | |
|---|---|---|---|---|---|
| | pl. | sg. | | pl. | sg. |
| *śara* | 900 | 12 | *mahāvega* | 26 | 0 |
| *bāṇa* | 320 | 15 | *nataparvan* | 26 | 0 |
| *niśita* | 232 | 16 | *kaṅkapatrin* | 19 | 0 |
| *sāyaka* | 125 | 3 | *mārgaṇa* | 19 | 0 |
| *śita* | 119 | 7 | *śilīmukha* | 19 | 0 |
| *tīkṣṇa* | 98 | 10 | *svarṇapuṅkha* | 15 | 0 |
| *saṃnataparvan* | 89 | 0 | *tomara* | 15 | 5 |
| *nārāca* | 72 | 31 | *suniśita* | 14 | 0 |
| *bhalla* | 68 | 88 | *marmabhedin* | 13 | 0 |
| *viśikha* | 57 | 0 | *vatsadanta* | 13 | 0 |
| *āśuga* | 46 | 0 | *āśīviṣopama* | 12 | 0 |
| *ajihmaga* | 41 | 0 | *hemapuṅkha* | 11 | 0 |
| *śilāśita* | 34 | 0 | *parameṣu* | 9 | 0 |
| *iṣu* | 32 | 0 | *kaṅkabarhiṇavājita* | 8 | 0 |
| *āyasa* | 30 | 0 | *sāyakottama* | 8 | 0 |
| *astra* | 28 | 10 | *sutejana* | 8 | 0 |
| *patrin* | 28 | 0 | *śilādhauta* | 8 | 0 |
| *rukmapuṅkha* | 28 | 2 | *suvarṇapuṅkha* | 8 | 0 |

**T71.** Types of arrows, BB *(pādas a + c)*

| Pāda *a* | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| *śaraiḥ* (16) | | | | | | | |
| *astraiḥ* (10) | astrāṇi saṃvārya (9) | | | | | | |
| *nārācaiḥ* (5) | | | | | | | |
| *kṣurapraiḥ* (2) | | | | | | | |
| *iṣubhiḥ* (2) | | | | | | | |
| *kṣurapreṇa* (3) | | | | | | | |
| | | | *śaravarṣeṇa* (18) | | | | |
| | | | *parameṣubhiḥ* (6) | | | | |
| | | | *viśikhaiḥ* (10) | | | | tīkṣṇaiḥ (4) |
| | | | | *śaraiḥ* (50) | | | tīkṣṇaiḥ (11) ghoraiḥ (8) |
| | | | | | *viśikhaiḥ* (8) | | |
| suvarṇapuṅkaiḥ (4) | | | | | *iṣubhiḥ* (9) | | |
| rathākṣamātraiḥ (4) | | | | | | | |
| | | | | | (-)*nārācaiḥ* (5+10) | | |
| | | ekena (3) | | | *bāṇena* (3) | | |
| ath(a) tat(aḥ) | (a)pareṇa (16) | | | | *bhallena* (29) | | |
| sārathiṃ cāsya (5) | | | | | | | |
| | | | daśabhiḥ (3) | | | | *bhallaiḥ* (9) |
| | | | | tribhiḥ (18) | | | *bāṇaiḥ* (112) |
| | | | (su)(ni)śitaiḥ (23) | | | | |
| | | | daśabhiḥ (10) | | | | |
| | | | bahubhiḥ (7) | | | | |
| | | | navabhiḥ (4) | | | | |

| Pāda *c* | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| *śaraiḥ* (81) | anekasāhasraiḥ (13) | | | | | | |
| | pañcaśatā (4) | | | | | | |
| *nārācaiḥ* (16) | arkaraśmyābhaiḥ (3) | | | | | | |
| *iṣubhiḥ* (7) | | | | | | | |
| *bhallena* (6) | | | | | | | |
| *nārāceṇa* (8) | sutīkṣṇena (6) | | | | | | |
| *kṣurapreṇa* (16) | sutīkṣnena (8) | | | | | | |
| *ardhacandreṇa* (9) | ciccheda (6) | | | | | | |
| *śaravarṣeṇa* (6) | mahatā (6) | | | | | | |
| 5/9/10/90 (11) | *sāyakaiḥ* (27) | | | | | | tīkṣnaiḥ (8) |
| vivyādh(a\|uḥ) (5) | | | | | | | |
| | *viśikhaiḥ* (15) | | | | | | tīkṣṇaiḥ (10) |
| | *mārgaṇaiḥ* (3) | | | | | | |
| mahatā (13) | *śaravarṣeṇa* (30) | | | | | | |
| svarṇa- (3) | puṅkhaiḥ 4 | *śilādhautaiḥ* (5) | | | | | |
| | | *śareṇa-* (2) | | | | | |
| | | | | *śaraiḥ* (65) | | | tīkṣṇaiḥ (13) |
| | | | | | | | ghoraiḥ (6) |
| | | | parama- (3) | | *iṣubhiḥ* (6) | | |
| dhanuḥ 10 | ciccheda (16) | | | | *bhallena* (40) | | |
| sārathiṃ cāsya (10) | | | | | | | |
| | | | | | *(-)nārācaiḥ* (5+7) | | |
| | | | | | *bāṇena* (6) | | |
| | | | | | *viśikhaiḥ* (7) | | |
| | | | daśabhiḥ (3) | | | | *bhallaiḥ* (19) |
| | | | (ni)śitaiḥ (7) | | | | |
| | | | | tribhiḥ (24) | | | *bāṇaiḥ* (155) |
| | | | (ni)śitaiḥ (49) | | | | |
| | | | navabhiḥ (9) | | | | |
| | | | daśabhiḥ (13) | | | | |
| | | | pañcabhiḥ (8) | | | | |

**T72.** Types of arrows, BB *(pādas b + d)*

| *Pāda b* | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| *śaraiḥ* (90) | | saṃnataparvabhiḥ (37) | | | | | |
| *bāṇaiḥ* (12) | | (saṃ)nataparvabhiḥ (5) | | | | | |
| *bhallaiḥ* (9) | | saṃnataparvabhiḥ (6) | | | | | |
| *astraiḥ* (5) | | | | | | | |
| *sāyakaiḥ* (5) | | | nataparvabhiḥ (2) | | | | |
| *nārācaiḥ* (16) | | | | | | | |
| *mārgaṇaiḥ* (4) | | | | | | | |
| *bhallena* (7) | | | | | | | |
| *śareṇa* (10) | | | (a)nataparvaṇā (10) | | | | |
| *nārācena* (18) | | | | stanāntare (4) | | | |
| *kṣurapreṇa* (11) | | | | mahā- (6) [diff. words!] | | | |
| *[a: num.] kṣudrakāṇām* (4) | | | | samarp(d)ayat (3) | | | |
| *[a: num.] nārācānām* (5) | | | | sama(ā)rp(d)ayat (3) | | | |
| *śaravarṣeṇa* (13) | | | | | | | |
| | | *bāṇaiḥ* (7) | | | | | |
| | | *bhallaiḥ* (7) | | | | | |
| | | | *viśikhaiḥ* (5) | | tribhiḥ (4) | | |
| | | | *sāyakottamaiḥ* (3) | | | | |
| navabhiḥ (6) | | | *nataparvabhiḥ* (14) | | | | |
| | | | | *śilīmukhaiḥ* (10) | | | |
| svarṇa- (5) | | -puṅkaiḥ (11) | | *(śilā)śitaiḥ* (19) | | | |
| tribhis tribhiḥ (7) | | | | *ajihmagaiḥ* (28) | | | |
| sumuktena (3) | | | | *patatriṇa* (3) | | | |
| | | vivyādha (6) | | *patriṇā* (16) | | | |
| | | kaṅka- (5) | | *(-)patribhiḥ* (11) | | | |
| viddhvā (17) | | pañcabhiḥ (13) | | *āśugaiḥ* (36) *āyasaiḥ* (18) | | | |
| | | navabhiḥ (9) | | | | | |
| | | | | *(-)sāyakaiḥ* (31+14) | | | |
| | | | | śitaiḥ (24) | | *-śaraiḥ* (237) | |
| | | | | tribhiḥ (18) | | | |
| | | | niśitaiḥ (67) | | | | |
| | | | navabhiḥ (29) | | | | |
| | | | daśabhiḥ (17) | | | | |

| *Pāda d* | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| *śaraiḥ* (79) | | saṃnataparvabhiḥ (29) | | | | | |
| *bhallaiḥ* (8) | | saṃnataparvabhiḥ (4) | | | | | |
| *bāṇaiḥ* (4) | | | | | | | |
| *nārācaiḥ* (15) | | | | | | | |
| *sāyakaiḥ* (6) | | | | | | | |
| *mārgaṇaiḥ* (5) | | | | | | | |
| *bhallena* (10) | | | (a)pāharat (6) | | | | |
| *kṣurapreṇa* (9) | | | | | | | |
| *nārācena* (9) | | | | paraṃtapa- (3) | | | |
| *[c: 25] kṣudrakāṇām* (4) | | | | samarpayat (3) | | | |
| *[c: 4x num.] nārācānām* (6) | | | | samārpayat (2) | | | |
| | | *bāṇaiḥ* (11) | | | | | |
| divyaiḥ (5) | | *astraiḥ* (6) | | | | | |
| | | | *sāyakaiḥ* (7) | | | | |
| | | | *viśikhaiḥ* (5) | | śitaiḥ (3) | | |
| | | | *sāyakottamaiḥ* (4) | | | | |
| | | | *marmabhedibhiḥ* (9) | | | | |
| | | | *kaṅkapatribhiḥ* (12) | | | | |
| navabhiḥ (4) | | | *nataparvabhiḥ* (11) | | | | |
| | | | | *śilīmukhaiḥ* (7) | | | |
| hema- (4) | | -puṅkaiḥ (11) | | *śilāśitaiḥ* (13) | | | |
| tribhis tribhiḥ (3) | | | | *ajihmagaiḥ* (12) | | | |
| | | ekena (3) | | | *patriṇā* (8) | | |
| | | | kaṅka- (11) | | *-patribhiḥ* (27) | | |
| | | | | | *(c)āśugaiḥ* (10) | | |
| | | | | | *āyasaiḥ* (12) | | |
| chādayām (5) | | | āsa (16) | | *sāyakaiḥ* (32) | | |
| | | | | | *(-)mārgaṇaiḥ* (5) | | |
| | | | | śitaiḥ (25) | | *śaraiḥ* (202) | |
| | | | | tribhiḥ (18) | | | |
| | | | niśitaiḥ (61) | | | | |
| | | | navabhiḥ (9) | | | | |
| | | | daśabhiḥ (20) | | | | |

#### 3.7.2.2.3.2 Numbers of arrows

Because the present topic is the use of numerals in the versification of fighting scenes, once more material from the Battle Books will be used exclusively. Basically, only forms in the instrumental case will be considered because numerals in fighting contexts are usually used to convey the information that hero *A* attacked, wounded or killed hero *B with such-and-such a number of* such-and-such weapons, or rather arrows of such-and-such a type, because weapons that are used in numbers higher than one at a time are generally arrows of some kind. About 1470 instrumental forms of numerals were found and of these an amazing 96% referred to weapons, i.e., generally to some type of arrow because other weapons are mostly used one at a time and so do not even need to to be accompanied by the numeral *eka*. The 4% or so of numerals in the instrumental case not referring to weapons do not obscure the picture because by and large they occupy the same metrical positions as the majority and do not form any frequent stock phrases.[169]

Readers of any passage in the *Mbh* that describes intensive fighting cannot fail to be struck by the amount of information regarding the numbers of arrows used and to ask what the reasons for such a peculiar mode of expression are. Now, in the light of the general model of versification presented it should be obvious that one important factor is the useful role such variable elements provide for the poet — this will become clearly visible on the tables to be presented and discussed in a moment. Also the desire for variation and embellishment certainly plays a role. But still, a modern reader must wonder if there is any particular rationale behind at least some of these numbers. Several hypothetical possibilities have to be assessed.

Firstly, it might be thought that an increase in the number of arrows is correlated to the intensity of fighting in general. By and large this seems not to be the case, but as far as the (metonymical) number 1000 *(sahasra)* is concerned, there are noticeable density peaks at several

169 One case has to be mentioned where a numeral behaves in a special way. The heterotope [2]*caturbhir* which never occurs together with arrows — though other heterotopes of the numeral *catur* in the instrumental case are very frequent in battle scenes — can be found in the following verse (and, outside the Battle Books, in 03,158.008) referring to warriors: *sa caturbhir maheṣvāsaiḥ pāṇḍavānāṃ mahārathaiḥ / vṛtas tān yodhayām āsa madrarājaḥ pratāpavān //* (09,012.031).

points of the battle where mass actions are described (e.g., 07,17–07,31 and 07,67–07,70).[170]

Secondly, with regard to numbers smaller than 100, which are typically used in fights between individual heroes, it could be assumed that a greater number of arrows implies a stronger effect or at least is a sign of the prowess of particular warrior. But neither of these points can be confirmed on a textual basis. We find great heroes like Arjuna or Karṇa shooting three or five arrows and in the same contexts much lesser warriors who shower their opponents with twenty or fifty of them. As far as the impact of the shots is concerned, a direct connection with the number of arrows is not discernible, at most a kind of reciprocal relation because, as already noted (p. 175), shots of single arrows are particularly dangerous.

Lastly, especially with smaller numbers, a certain number of arrows may correspond to a specific number of targets. This approach cannot serve as a general explanation either but in some cases it is possible to find a direct correlation of the type *x* arrows — *x* targets. Most often this is true for the number four: out of 44 occurrences of the form *caturbhiḥ* (or some sandhi variant) in battle contexts, 34 are related to the four horses drawing the chariot (or, much more seldom, to a group of four heroes), as in Q109.

More seldom, but still in about 1/3 of all cases where two arrows are employed, they are directed at exactly two targets, i.e., at two warriors or at both arms of one opponent (06,101.031; 07,078.029; 08,033.015; 08,040.011; 08,040.104; 09,009.034; 09,015.063; 09,016.061).

Of the other numbers only samples have been checked, but no direct correspondences of the above type could be ascertained, with the exception of one rather small, but interesting class of verses which are basically a special case of sequential attacks of type IV (cf. above p. 199). In these a target is attacked together with other things, animals or persons that belong to him, typically one or more items on the following list:

- horses *(aśva)*
- elephants *(gaja, dvipa)*
- charioteer *(sūta, sārathi, yantṛ)*
- bow *(dhanus)*

170 Cf. Hellwig 2010, p. 9–11, where similar phenomena in the *Rm* are discussed.

- banner *(dhvaja, ketu)*
- parasol *(chatra)*
- chariot *(ratha)*

In some of these attacks the number of arrows is specified, and in a further subgroup, which is of interest here, this number is correlated to the number of targets, a clear example being the stanza quoted above, Q109. Further examples of a one-to-one correlation are the verses 07,047.007 and 07,088.020 (both 6 arrows — 6 targets). Other passages are less clear. Some ratios can be explained as the result of basic multiplication; so, in 07,067.066 we have 14 arrows and 7 targets, and in 06,060.030 it is 70 arrows and 7 targets. But there is a small group of stanzas where such simple operations do not work and the reader is left to wonder if the poet just did not bother to construct an appropriate correlation, if he made a mistake in his calculations, or if there is a problem with the established text. The following examples were identified: 07,040.002 (10 arrows, 8 targets); 07,040.002 (20 arrows, 7 targets); 07,101.026 (60 arrows, 7 targets); and 08,032.049 (10 arrows, 1 warrior + 4 horses + 1 charioteer + 1 banner + *x* weapons [*sâśva-sūta-dhvajâyudham*], which would only fit if it could be assumed *x* = 3).

After these detailed discussions now it is time for the big picture. The following tables T73 and T74 show (in the same manner as in the tables of arrows, T71 and T72) the heterotopes of instrumental forms of numerals that occur with a minimal joint frequency of ca. 4 in all pāda types in the Battle Books. For a better overview, words almost or completely restricted to one pāda class are printed in bold face. Sporadic heterotopes have been left out though of course they are potentially interesting due to their very rarity. The rarest of them are therefore given here as a small list of exceptions:

- [1]*caturdaśabhir* (07,109.028c)
- [4]*pañcadaśabhir* (07,096.031a)
- [11]*ṣaṣṭibhir* (08,018.063b)
- [9]*pañcaṣaṣṭyā* (06,110.034b)
- [5]*dvisaptatyā* (07,028.015c)

In this context attention may also be drawn to the fact that there are very few occurrences of numerals that start at the second syllable, specifically, three instances of *caturdaśabhiḥ*, which appear in relatively close vicinity (07,067.066a; 07,072.031a; 07,078.003a) and so probably belong to the personal style of one author.

Another way to present the same information (though in a more detailed way, for all four pāda types) has been attempted in Fig. 22, where the size of the numbers representing the heterotopes is proportionate to their frequency.

The situation that the tables exhibit is in many respects similar to the one of the arrow heterotopes. The words appearing in the first syllables of both pāda classes are by and large the same, though there are some words appearing mostly in certain pāda types, especially in even pādas (whereas from the point of view of their prosodic structure occurrences in the first syllables of odd pādas would be perfectly possible). Looking at the evidence from the point of view of Parryan systems (see above section 3.1), it can plausibly be assumed that the semantic differences between the numbers (at least) 3–10 in most sentences are unsubstantial. Under this condition the observation is once more confirmed that the metrical systems of the *Mbh* are not entirely thrifty, namely by the parallel usage of completely equivalent metrically forms, like *navabhiḥ* and *daśabhiḥ* or *pañcabhiḥ* and *saptabhiḥ*.

**T73.** Numerals in the BB (pādas *a* + *c)*

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| *dvābhyām* (16) | | dvābhyām (4) | | | | | |
| *tribhiḥ* (19) | | tribhiḥ (4) | | | | | |
| *ṣaḍbhiḥ* (6) | | | | | | | |
| *ṣaṣṭyā* (6) | | | | | | | |
| *ekena* (8) | | | | | | | |
| *caturbhiḥ* (14) | | | caturaḥ (4) | | | | |
| *pañcabhiḥ* (19) | | | pañcabhiḥ (6) | | | bāṇaiḥ (5) | |
| *saptabhiḥ* (3) | | | | | | | |
| *aṣṭ(a\|ā)bhiḥ* (7) | | | | | | | |
| *navabhiḥ* (6) | | | | | | | |
| *daśabhiḥ* (18) | | | daśabhiḥ (8) | | | bāṇaiḥ (3) | |
| ***triṃśatā* (4)** | | | niśitaiḥ (2) | | | bāṇaiḥ (2) | |
| *pañcāśadbhiḥ* (3) | | | | | | | |
| ***aśītyā* (6)** | | | | | | | |
| *triṣaṣṭyā* (2) | | | | | | | |
| *navatyā* (6) | | | | | | | |
| *śatena* (3) | | | | | | | |
| *śaravrātaiḥ* (2) | | | | | | | |
| *śaravarṣeṇa* (9) | | | mahatā (8) | | | | |
| tam (3) | *caturdaśabhiḥ* (3) | | | | | | |
| dvābhyām (4) | | *dvābhyām* (4) | | | | | |
| tribhis (4) | | *tribhiḥ* (7) | | śaraiḥ (3) | | | |
| dhvajam (12)<br>dhanuḥ (5) | | *ekena* (26) | | | ciccheda (9)<br>vivyādha (9) | | |
| | | *dvādaśabhiḥ* (5) | | | | viddhvā (3) | |
| śaraiḥ (4) | | *pañcāśatā* (13) | | | | | |
| | | *dvātriṃśatā* (2) | | | | | |
| śaraiḥ (14) | | *anekasahasraiḥ* (23) | | | | | |
| trisyllabic name (8) | | | *tribhiḥ* (13) | | ānar(c)chat (7) | | |
| trisyllabic name (12)<br>pañcabhiḥ (6)<br>ekaikam (7) | | | *pañcabhiḥ* (32) | | | bāṇaiḥ (12)<br>viddhvā (14) | |
| | disyll. name (4) | | | | | | |
| trisyllabic name (6) | | | *navabhiḥ* (24) | | | bāṇaiḥ (13) | |
| | disyll. name (6) | | | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| trisyllabic name (17)<br>vivyādha (9)<br>daśabhiḥ (8) | | | *daśabhiḥ* (60) | | | bāṇaiḥ (24)<br>viddhvā (9) | |
| | disyll. name (5) | | | | | | |
| trisyllabic name (2) | | | *triṃśatā* (4) | | | bāṇaiḥ | |
| | | | ***saptadaśabhiḥ* (3)** | | | | |
| trisyllabic name (21)<br>athainam (8) | | | ***pañcaviṃśatyā* (47)** | | | | |
| | disyll. name (9) | | | | | | |
| | | | ***saptasaptatyā* (4)** | | | | |
| mahatā (17)<br>trisyllabic name (7) | | | ***śaravarṣeṇa* (48)** | | | | |
| tetrasyllabic name (24) | | | | *tribhiḥ* (70) | | bāṇaiḥ (44)<br>viddhvā (15) | |
| tetrasyllabic name (2) | | | | ***triṣaṣṭyā* (2)** | | | |
| tetrasyllabic name (12) | | | | ***dvādaśabhiḥ* (14)** | | | |
| tetrasyllabic name (6) | | | | ***catuḥṣaṣṭyā* (19)** | | | |
| tetrasyllabic name (7) | | | | ***trisaptatyā* (18)** | | | |
| tetrasyllabic name (4) | | | | ***śatenājau* (6)** | | | |
| tetrasyllabic name (3) | | | | ***śatenaiva* (7)** | | | |
| | | | | ***śaraśataiḥ* (4)** | | | |
| | | | | ***sahasreṇa* (6)** | | | |
| | | | | ***śaravrātaiḥ* (22)** | | | |
| | | | | | ***ekena* (5)** | | |
| tetrasyllabic name (6) | | | | ca (7) | ***navabhiḥ* (12)** | | |
| vivyādha (5) | | | cainam (5) | | ***daśabhiḥ* (22)** | | |
| tetrasyllabic name (5) | | | | ca (5) | | | |
| tetrasyllabic name (19) | | | | ca/tu | ***vimśatyā* (38)** | | |
| punaḥ | | vivyādha (10) | | | | | |
| | | vivyādha (15) | | | ***saptatyā* (31)** | | |
| tetrasyllabic name (12) | | | | ca (13) | | | |
| | | | | | | ***ṣaḍbhiḥ* (11)** | |
| | | | | | | ***'ṣṭābhiḥ* (2)** | |
| | | | trisyllabic name (9) | | | ***ṣaṣṭyā* (16)** | |

**T74.** Numerals in the BB (pādas *b* + *d*)

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|
| *dvābhyām* (9) | | dvābhyām (6) | | | | | |
| *tribhiḥ* (57) | | tribhiḥ (18)<br>eva (8) | | ajihmagaiḥ (11) | | | |
| *ṣaḍbhiḥ* (6) | | | | | | | |
| *ṣaṣṭyā* (4) | | | | | | | |
| *ekena* (4) | | | | | | | |
| *caturbhiḥ* (30) | | | caturo hayān (11) | | | | |
| *pañcabhiḥ* (22) | | | pañcabhiḥ (7) | | | śaraiḥ (7) | |
| *saptabhiḥ* (7) | | | | | | | |
| *aṣṭ(a\|ā)bhiḥ* (4) | | | | | | | |
| *navabhiḥ* (25) | | | nataparvabhiḥ (10)<br>niśitaiḥ (10) | | | | |
| *daśabhiḥ* (32) | | | daśabhiḥ (9)<br>niśitaiḥ (5) | | | śaraiḥ (13) | |
| ***viṃśatyā* (8)** | | | niśitaiḥ (3) | | | | |
| *triṃśatā* (6) | | | | | | | |
| ***saptatyā* (5)** | | | | | | | |
| *navatyā* (10) | | | nataparvaṇām (5)<br>niśitaiḥ śaraiḥ (5) | | | | |
| ***ṣaḍviṃśatyā* (6)** | | | | sam(a\|ā)rpayat (4) | | | |
| ***trisaptatyā* (6)** | | | | śilīmukhaiḥ (3) | | | |
| dvābhyām (6) | | *dvābhyām* (8) | | | | | |
| tribhiḥ (18) | | *tribhiḥ* (23) | | ajihmagaiḥ (12) | | | |
| | | ***ṣaḍbhiḥ* (5)** | | ajihmagaiḥ (2) | | | |
| | | ***ṣaṣṭyā* (5)** | | | | | |
| | | *ekena* (9) | | | patriṇā (3)<br>cicchide (3) | | |
| viddhvā (10) | | *pañcabhiḥ* (18) | | | āśugaiḥ (8)<br>āyasaiḥ (6) | | |
| viddhvā (7) | | ***saptabhiḥ* (10)** | | | āśugaiḥ (7)<br>āyasaiḥ (2) | | |
| ṣaḍbhiḥ (2) | | ***aṣṭ(a\|ā)bhiḥ* (3)** | | | eva ca (2) | | |
| viddhvā (4) | | *navabhiḥ* (9) | | | āśugaiḥ (6)<br>āyasaiḥ (3) | | |
| viddhvā (2) | | *daśabhiḥ* (3) | | | āśugaiḥ (3) | | |

<table>
<tr><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th></tr>
<tr><td colspan="3"></td><td colspan="2">tribhiḥ (5)</td><td></td><td></td><td></td></tr>
<tr><td colspan="3"></td><td colspan="2">ṣaḍbhiḥ (4)</td><td colspan="3">āyasaiḥ (2)<br>āśugaiḥ (1)</td></tr>
<tr><td colspan="3">pañcabhiḥ (7)</td><td colspan="3">pañcabhiḥ (12)</td><td colspan="2">śaraiḥ (10)</td></tr>
<tr><td colspan="3">trisyllabic names (24)<br>[incl.: sātyaki[rm] (7)]</td><td colspan="3" rowspan="2">navabhiḥ (41)</td><td colspan="2" rowspan="2">śaraiḥ (39)</td></tr>
<tr><td>disyll. name (8)</td><td>ca (10)</td></tr>
<tr><td colspan="3">daśabhiḥ (11)<br>vivyādha (11)</td><td colspan="3" rowspan="2">daśabhiḥ (47)</td><td colspan="2" rowspan="2">śaraiḥ (40)</td></tr>
<tr><td>disyll. name (6)</td><td>ca (8)</td></tr>
<tr><td colspan="3">vivyādha (3)<br>avidhyat (2)</td><td colspan="3">triṃśatā (5)</td><td colspan="2">śaraiḥ (5)</td></tr>
<tr><td colspan="3">sārathim (6)</td><td>ca (13)</td><td colspan="3">tribhiḥ (61)</td><td colspan="2">śaraiḥ (36)<br>tribhiḥ (18)</td></tr>
<tr><td colspan="4">vivyādhainam (2)</td><td colspan="4">trisaptabhiḥ (4)</td></tr>
<tr><td colspan="4">tetrasyllabic name (16)</td><td>ca (26)</td><td colspan="3" rowspan="2">pañcabhiḥ (46)</td></tr>
<tr><td colspan="2">punaḥ (7)</td><td colspan="2">vivyādha (16)</td></tr>
<tr><td colspan="4">tetrasyllabic name (31)</td><td>ca (35)</td><td colspan="3" rowspan="2">saptabhiḥ (73)</td></tr>
<tr><td colspan="2">punaḥ (11)</td><td colspan="2">vivyādha (24)</td></tr>
<tr><td></td><td></td><td></td><td></td><td>tribhiḥ (18)</td><td colspan="3" rowspan="2">tribhiḥ (50)</td></tr>
<tr><td></td><td></td><td></td><td colspan="2">viśikhaiḥ (6)<br>niśitaiḥ (6)</td></tr>
</table>

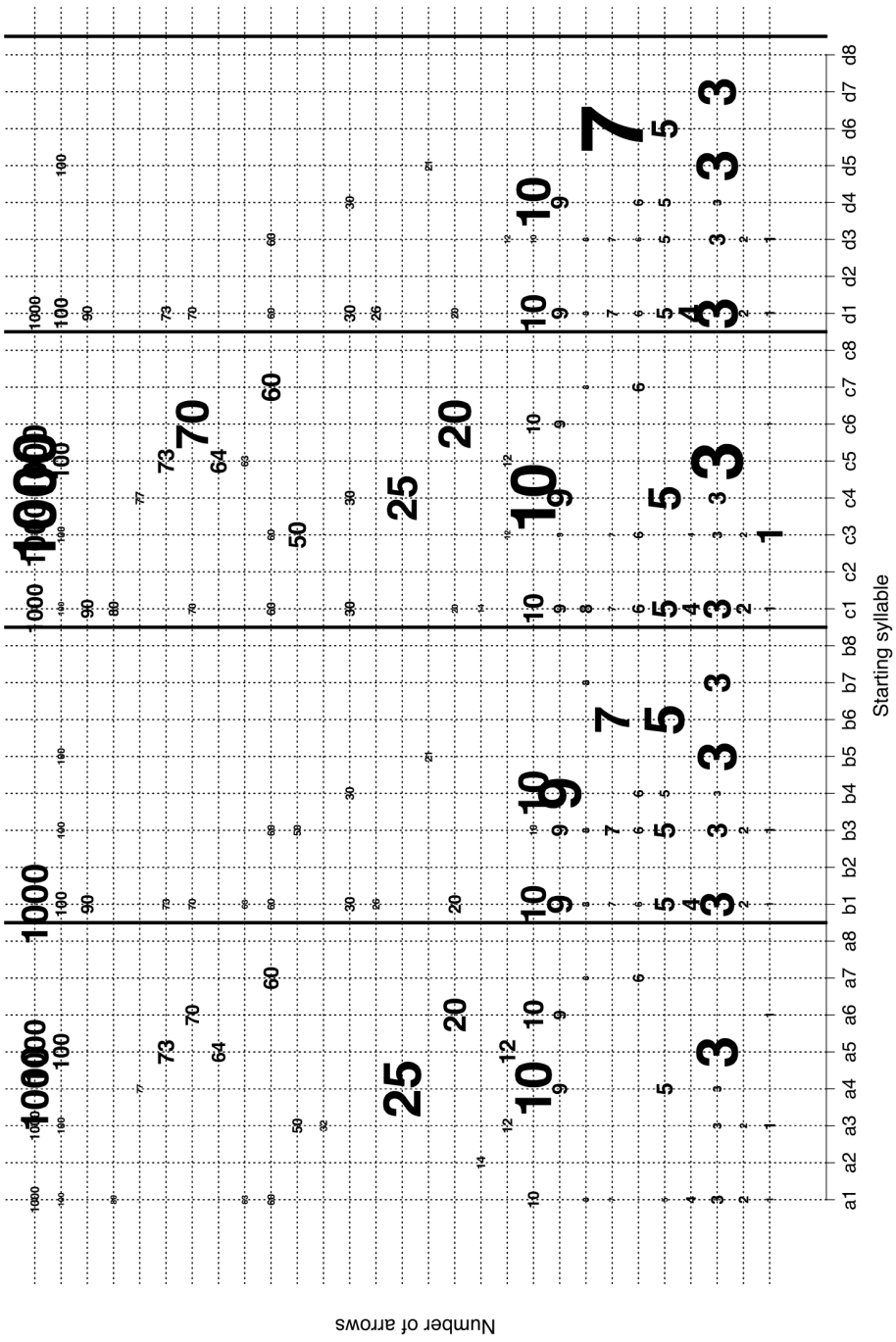


**Fig. 22.** Numbers of arrows in the BB: verse position overview

# 4
# CONCLUSIONS AND PERSPECTIVES

The investigations in this book were undertaken in the optimistic spirit that it might be possible — with the help of the computer and informed by discussions in classical philology and oral poetry research — to deepen our understanding of the formulaic diction in the *Mbh* and ultimately also of Epic Sanskrit as the language that is at the same time the product and the precondition of epic poetry.

Our survey of repetitions started with those of śloka and half-śloka length which in many respects turned out to be quite similar. For the majority of them it could be shown that strong localisation points to a stylistic repetition, whereas those that are more widely distributed often belong to a gnomic type. Among the hemistichs, secondary ones were distinguished from primary ones with the help of a frequency analysis of their constituent pādas. In passing it was demonstrated that network diagrams of text units that share ślokas or hemistichs might be a starting point of research dealing with the text structure of the *Mbh*.

The analysis of pāda repetitions focussed on pādas that were classified as relatively independent on the basis of low affinity to neighbouring pādas. The more frequent ones among them could according to their distribution over the whole text, be quite neatly distinguished into a local, a regional, and a global type. In addition, their syntactic roles and narrative functions were discussed. The calculation of isolation values proved to be a particularly useful tool for the detection of pādas that are embedded in the epic language very deeply or unusually superficially. The most frequent pādas of the latter type turned out to be stylistic repetitions. As the smallest units to be analysed, sub-pāda repetitions that possess a certain degree of individuality were identified and two lists compiled of left-anchored and right-anchored ones.

In the chapter that followed several more abstract, structural aspects of formulaic diction were discussed. The analysis of "parallel formulas" already started by Grincer was complemented by additional data and formulated in terms of Parryan systems. Important fillers were listed and their usage was analysed from several angles. Certain peculiar

features about this very numerous class of words which emerged in theses investigations deserve further study. Formulaic templates, i.e., structures with fixed elements and slots to be filled by variable ones were divided into a frequent simple and a rare complex type. The filling mechanism for the latter kind showed a remarkably high level of regularity. In contrast, a superficially similar group of pādas, battle introductions, did not display such regular transformations but rather completely free variation on the basis of a small group of prototypes. Next, speech introductions were interpreted as a Parryan system; a collection of all the members of this sizeable group in a metrical table proved the immense flexibility of formulaic diction in the *Mbh*. A possible development of this language as a kind of crystallisation process was exemplified in a speculative manner with the help of different affinity distributions. In some special cases of syntactic ambiguity the crystallisation may "fork" and take two different directions simultaneously.

The making of whole sentences was the topic of the last section. According to a "generative" model, taken over from the Homeric scholar Edzard Visser, versification is a stepwise process that starts from an initial idea and then leads to a concretisation of the sentence elements in a definite order; from the essential, through the variable, to the optional. This model proved to be perfectly adequate for hemistichs of the *A*-HIT-*B* type whose construction process could be analysed into single steps in a rigorous manner. For longer structures it was also a useful descriptive tool, but here a quasi-deterministic reconstruction of the versification process proved to be no longer possible. The last part of the versification analysis focussed on the most important variable components in *A*-HIT-*B* frames: words for arrows and numerals. The results from a comprehensive survey of these elements was once more a combination of numerous regularities and even more numerous possibilities for variation.

It is a bit difficult to draw conclusions from such a wealth of individual observations. On close inspection the material showed much more diversity than was initially expected — but at the same time it was possible to discover many unforeseen regularities. As anticipated in the introduction, all major approaches in formulaic research could be fruitfully employed in analysing the *Mbh* material. Consequently, no attempt has been made to construct a unified theory of Sanskrit epic versification,

but some characteristic features will be noted that emerged as a result of these investigations.

Attempts to assess the relative importance of different formulaic mechanisms on the diction of the *Mbh* must partly rely on general impressions because concrete figures are only available for certain aspects; but even if we had a statistical overview, the importance of a phenomenon is not a direct function of its frequency.

Repetitions of more than pāda length do not have a formulaic function at all in most cases, but are literary devices, like refrains, etc. It is a question of definition if hemistichs and ślokas of the gnomic kind should be regarded as elements of the epic language; genetically they are probably not, and often they can only be identified by checking quantitative linguistic features. Repeated pādas certainly are an important part of formulaic diction, and very useful for the poets, but in spite of their comparatively great number they should not be seen as the most fundamental component. With repetitions of sub-pāda length it is often doubtful if they can be treated as stable and independent elements; in addition, many of them are not exclusive to the epic language. Fillers, on the other hand, are certainly both typical and very frequent, but it is clear they only play an auxiliary role.

As to the structural components of formulaic diction, it is difficult to estimate their number and frequency because they are not so easily identifiable as repetitions of surface structure elements. My impression is that the number (both in terms of types and tokens) of complex templates and groups of prototype variations is quite limited. More important are simple templates and Parryan systems, though probably the mini-systems of parallel expressions in odd and even pādas make up the biggest group among the latter ones. But the most important formulaic structure are, in my estimation, epic frames regulating and guiding versification in a stepwise manner through difficult terrain. It must be admitted, however, that this aspect of epic formulaic diction is still very insufficiently researched; the treatment of the *A*-HIT-*B* frame in the present study can barely be more than a proof of concept.

Coming to the general characteristics of formulaic diction in the *Mbh*, one must surely underscore its flexibility and richness. Paradoxically, the elastic nature of the epic versification technique becomes fully visi-

ble only in highly formulaic contexts such as the verses of the *A*-HIT-*B* frame. At least three important factors contributing to this flexibility can be identified:

1) Firstly, the pāda as the basic unit of versification is often filled with only one constituent; this strategy enables a step-by-step approach in which the single pādas are constructed independently according to pāda-specific sub-frames. This explains why flexibility breaks down and versification takes on a fairly deterministic shape as soon as the clause-to-be-constructed becomes so short that it forces two or more constituents to share one pāda.
2) Secondly, to fill a pāda in accordance with the metrical rules is made easier by the structure of the *anuṣṭubh,* with its largely free first half. In the practice of the epic poets this feature is regularly exploited by putting essential, and therefore potentially problematic, words at the beginning and adding fillers of little semantic weight at the end, especially in even pādas.
3) Thirdly, epic frames can also be seen as contributing to flexibility. By prioritising the essential elements, they create, as it were, room for relative freedom of choice with regard to non-essential ones.

So much for the results — both concrete and more impressionistic — of the investigations presented. But in the course of the preceding analyses a number of databases were constructed and several software tools and analytical concepts (like polarisation values, heterotopes, affinity and isolation values, regional distribution, etc.) were developed or adapted to the special requirements of the *Mbh* that can also be regarded as substantial products. Thanks to their nature they can easily be accessed via the internet, be modified and be put to use in future research. Apart from more detailed and sophisticated studies of the *Mbh* itself, it could be a rather fruitful approach to use the results, tools and concepts of the present project for comparisons: first of all with the *Rm*, of course, but also with texts like the *Buddhacarita*, the *Purāṇas* or the *Kathāsaritsāgara*.

As an afterthought, I would like to point to a potentially useful flip side, as it were, of investigations like the one just presented. By finding and

systematically describing regularities we become able to discover irregularities (as pointed out several times in passing), and this has at least two practical outcomes that may be exploited in future studies of a more detailed, in-depth kind:

1) Non-standard solutions are sometimes chosen because an element that normally has low semantic weight becomes a crucial part of the meaning, and to realise that fact allows us to understand the respective verse in a more adequate way;
2) verses that strongly deviate from the standard patterns may be of some importance for editing, textual history, etc.

# APPENDICES

**A1.** Manually selected text units (MSTUs)

| No. | Length | 1st line (runn. no.) | 1st line *(CE)* | No. | Length | 1st line (runn. no.) | 1st line *(CE)* |
|---|---|---|---|---|---|---|---|
| 1 | 823 | 1 | 01,001.000 | 29 | 1072 | 33129 | 03,224.001 |
| 2 | 2282 | 824 | 01,003.139 | 30 | 536 | 34201 | 03,244.001 |
| 3 | 1023 | 3106 | 01,053.027 | 31 | 1480 | 34737 | 03,257.001 |
| 4 | 615 | 4129 | 01,062.001 | 32 | 540 | 36217 | 03,277.001 |
| 5 | 919 | 4744 | 01,070.001 | 33 | 952 | 36757 | 03,284.001 |
| 6 | 914 | 5663 | 01,090.001 | 34 | 1164 | 37709 | 04,001.001 |
| 7 | 1609 | 6577 | 01,101.001 | 35 | 945 | 38873 | 04,024.001 |
| 8 | 1519 | 8186 | 01,124.001 | 36 | 1353 | 39818 | 04,041.001 |
| 9 | 393 | 9705 | 01,153.001 | 37 | 1096 | 41171 | 05,003.001 |
| 10 | 743 | 10098 | 01,160.001 | 38 | 1070 | 42267 | 05,023.001 |
| 11 | 507 | 10841 | 01,174.001 | 39 | 1171 | 43337 | 05,046.001 |
| 12 | 455 | 11348 | 01,192.001 | 40 | 1684 | 44508 | 05,070.001 |
| 13 | 1593 | 11803 | 01,200.001 | 41 | 1304 | 46192 | 05,094.001 |
| 14 | 874 | 13396 | 02,001.001 | 42 | 1170 | 47496 | 05,122.001 |
| 15 | 842 | 14270 | 02,012.001 | 43 | 1040 | 48666 | 05,138.001 |
| 16 | 1184 | 15112 | 02,023.001 | 44 | 904 | 49706 | 05,153.001 |
| 17 | 1658 | 16296 | 02,043.001 | 45 | 1519 | 50610 | 05,170.001 |
| 18 | 741 | 17954 | 03,001.001 | 46 | 950 | 52129 | 06,001.001 |
| 19 | 2685 | 18695 | 03,013.001 | 47 | 542 | 53079 | 06,014.001 |
| 20 | 1859 | 21380 | 03,050.001 | 48 | 1290 | 53621 | 06,023.001 |
| 21 | 1703 | 23239 | 03,079.001 | 49 | 845 | 54911 | 06,041.001 |
| 22 | 799 | 24942 | 03,093.001 | 50 | 1320 | 55756 | 06,048.001 |
| 23 | 1149 | 25741 | 03,110.001 | 51 | 1194 | 57076 | 06,061.001 |
| 24 | 889 | 26890 | 03,140.001 | 52 | 1782 | 58270 | 06,076.001 |
| 25 | 1955 | 27779 | 03,153.001 | 53 | 1025 | 60052 | 06,095.001 |
| 26 | 1471 | 29734 | 03,179.001 | 54 | 1711 | 61077 | 06,104.001 |
| 27 | 774 | 31205 | 03,198.001 | 55 | 1193 | 62788 | 07,001.001 |
| 28 | 1150 | 31979 | 03,207.001 | 56 | 1414 | 63981 | 07,016.001 |

**A1.** Manually selected text units (contd.)

| No. | Length | 1st line (runn. no.) | 1st line *(CE)* | No. | Length | 1st line (runn. no.) | 1st line *(CE)* |
|---|---|---|---|---|---|---|---|
| 57 | 1020 | 65395 | 07,032.001 | 86 | 775 | 94737 | 11,016.001 |
| 58 | 993 | 66415 | 07,050.001 | 87 | 831 | 95512 | 12,001.001 |
| 59 | 1265 | 67408 | 07,061.001 | 88 | 796 | 96343 | 12,015.001 |
| 60 | 902 | 68673 | 07,074.001 | 89 | 765 | 97139 | 12,029.001 |
| 61 | 1056 | 69575 | 07,085.001 | 90 | 729 | 97904 | 12,037.001 |
| 62 | 716 | 70631 | 07,095.001 | 91 | 160 | 98633 | 12,049.001 |
| 63 | 1318 | 71347 | 07,102.001 | 92 | 881 | 98793 | 12,050.001 |
| 64 | 958 | 72665 | 07,116.001 | 93 | 1339 | 99674 | 12,060.001 |
| 65 | 1083 | 73623 | 07,125.001 | 94 | 1116 | 101013 | 12,082.001 |
| 66 | 955 | 74706 | 07,135.001 | 95 | 883 | 102129 | 12,099.001 |
| 67 | 1184 | 75661 | 07,146.001 | 96 | 704 | 103012 | 12,112.001 |
| 68 | 1080 | 76845 | 07,159.001 | 97 | 600 | 103716 | 12,122.001 |
| 69 | 1071 | 77925 | 07,166.001 | 98 | 1273 | 104316 | 12,129.001 |
| 70 | 768 | 78996 | 08,001.001 | 99 | 376 | 105589 | 12,141.001 |
| 71 | 1282 | 79764 | 08,008.001 | 100 | 1467 | 105965 | 12,149.001 |
| 72 | 1356 | 81046 | 08,020.001 | 101 | 1193 | 107432 | 12,168.001 |
| 73 | 931 | 82402 | 08,031.001 | 102 | 866 | 108625 | 12,188.001 |
| 74 | 899 | 83333 | 08,039.001 | 103 | 1574 | 109491 | 12,203.001 |
| 75 | 1535 | 84232 | 08,046.001 | 104 | 1281 | 111065 | 12,224.001 |
| 76 | 691 | 85767 | 09,001.001 | 105 | 1206 | 112346 | 12,249.001 |
| 77 | 1052 | 86458 | 09,008.001 | 106 | 1072 | 113552 | 12,264.001 |
| 78 | 1052 | 87510 | 09,018.001 | 107 | 1526 | 114624 | 12,279.001 |
| 79 | 741 | 88562 | 09,028.001 | 108 | 1124 | 116150 | 12,298.001 |
| 80 | 888 | 89303 | 09,034.001 | 109 | 977 | 117274 | 12,310.001 |
| 81 | 1182 | 90191 | 09,043.001 | 110 | 1008 | 118251 | 12,321.001 |
| 82 | 1097 | 91373 | 09,054.001 | 111 | 1323 | 119259 | 12,330.001 |
| 83 | 1060 | 92470 | 10,001.001 | 112 | 964 | 120582 | 13,001.001 |
| 84 | 499 | 93530 | 10,010.001 | 113 | 1217 | 121546 | 13,012.001 |
| 85 | 708 | 94029 | 11,001.001 | 114 | 1028 | 122763 | 13,019.001 |

**A1.** Manually selected text units (contd.)

| No. | Length | 1st line (runn. no.) | 1st line *(CE)* | No. | Length | 1st line (runn. no.) | 1st line *(CE)* |
|---|---|---|---|---|---|---|---|
| 115 | 1286 | 123791 | 13,031.001 | 124 | 652 | 133334 | 14,001.001 |
| 116 | 623 | 125077 | 13,050.001 | 125 | 976 | 133986 | 14,016.001 |
| 117 | 957 | 125700 | 13,058.001 | 126 | 1016 | 134962 | 14,035.001 |
| 118 | 1163 | 126657 | 13,071.001 | 127 | 870 | 135978 | 14,051.001 |
| 119 | 1035 | 127820 | 13,087.001 | 128 | 1891 | 136848 | 14,065.001 |
| 120 | 1097 | 128855 | 13,102.001 | 129 | 1102 | 138739 | 15,001.001 |
| 121 | 960 | 129952 | 13,112.001 | 130 | 1014 | 139841 | 15,028.001 |
| 122 | 1358 | 130912 | 13,126.001 | 131 | 1086 | 140855 | 16,001.001 |
| 123 | 1064 | 132270 | 13,137.001 | | | | |

**A2.** Word break patterns (odd pādas)

| WBP | Freq. | WBP | Freq. | WBP | Freq. | WBP | Freq. |
|---|---|---|---|---|---|---|---|
| 3_6 | 11391 | 3_5_6 | 1006 | 6_7 | 185 | 1_4_5_7 | 35 |
| 4 | 9828 | 1_2_4 | 966 | 1_5_6 | 149 | 1_2_3_4 | 34 |
| 2_6 | 7708 | 2_4_7 | 911 | 2_4_6_7 | 142 | 1_2_4_6_7 | 33 |
| 3 | 7599 | 2_5_6 | 900 | 1_4_7 | 135 | 1_3_4_7 | 33 |
| 4_6 | 7081 | 1_2_6 | 856 | 1_5_7 | 121 | 1_3_4_5_6 | 30 |
| 2_4 | 6658 | 3_5_7 | 817 | 1_3_6_7 | 115 | 3_5_6_7 | 30 |
| 5 | 6022 | 1_2_5 | 758 | 1_2_4_5 | 111 | 2_5_6_7 | 26 |
| 2_5 | 5680 | 2_5_7 | 721 | 1_3_5_6 | 105 | 1_2_3_5_6 | 25 |
| 3_5 | 5561 | 5_7 | 696 | 1_2_5_6 | 101 | 1_2_3_7 | 19 |
| 6 | 5051 | 2_4_5_7 | 679 | 1_3_5_7 | 100 | 2_3_4_5_7 | 16 |
| 0 | 4897 | 1_6 | 675 | 1_2_3_5 | 95 | 2_3_4_6_7 | 15 |
| 2_4_6 | 4386 | 1_2_4_6 | 659 | 3_4_5_6 | 90 | 1_2_3_4_7 | 14 |
| 2_3_6 | 3876 | 3_4_7 | 570 | 2_3_6_7 | 87 | 1_2_3_5_7 | 14 |
| 4_5 | 3874 | 4_5_7 | 519 | 1_2_4_7 | 85 | 1_3_4_5_7 | 14 |
| 2 | 3870 | 2_3_7 | 511 | 1_3_4_5 | 78 | 1_2_3_4_5 | 13 |
| 3_7 | 2839 | 1_2 | 440 | 1_2_6_7 | 76 | 1_3_4_6_7 | 12 |
| 1_3_6 | 2687 | 1 | 423 | 1_2_5_7 | 75 | 2_4_5_6_7 | 10 |
| 3_4 | 2640 | 2_3_4 | 410 | 1_2_7 | 68 | 1_3_5_6_7 | 9 |
| 3_4_6 | 2482 | 3_6_7 | 400 | 3_4_6_7 | 67 | 2_3_4_5_6 | 7 |
| 2_3 | 1907 | 2_4_5_6 | 395 | 2_3_4_5 | 64 | 3_4_5_6_7 | 7 |
| 1_3 | 1777 | 3_4_5 | 373 | 1_4_5_6 | 62 | 2_3_5_6_7 | 6 |
| 2_4_5 | 1643 | 1_2_3_6 | 364 | 1_7 | 62 | 1_2_3_4_5_6 | 5 |
| 2_3_5 | 1566 | 1_3_7 | 336 | 3_4_5_7 | 57 | 1_2_3_4_6_7 | 3 |
| 4_7 | 1510 | 4_6_7 | 317 | 1_2_4_5_7 | 48 | 1_2_3_4_5_7 | 2 |
| 1_4 | 1501 | 1_3_4 | 291 | 1_4_6_7 | 46 | 1_2_5_6_7 | 2 |
| 1_5 | 1411 | 1_3_4_6 | 275 | 5_6_7 | 41 | 2_3_4_5_6_7 | 2 |
| 7 | 1266 | 2_3_4_6 | 271 | 1_2_3_4_6 | 40 | 1_2_4_5_6_7 | 1 |
| 5_6 | 1190 | 1_4_5 | 256 | 4_5_6_7 | 40 | 1_3_4_5_6_7 | 1 |
| 2_7 | 1056 | 2_3_5_6 | 226 | 1_2_3_6_7 | 39 | 1_4_5_6_7 | 1 |
| 1_4_6 | 1044 | 2_3_5_7 | 196 | 1_2_4_5_6 | 38 | 1_5_6_7 | 1 |
| 1_3_5 | 1026 | 2_6_7 | 192 | 2_3_4_7 | 38 | | |
| 4_5_6 | 1013 | 1_2_3 | 186 | 1_6_7 | 37 | | |

**A3.** Word break patterns (even pādas)

| WBP | Freq. | WBP | Freq. | WBP | Freq. | WBP | Freq. |
|---|---|---|---|---|---|---|---|
| 4 | 17722 | 1_2_5 | 624 | 1_2_3_5 | 111 | 1_7 | 14 |
| 3 | 16911 | 2_7 | 624 | 1_3_4_6 | 109 | 1_2_6_7 | 10 |
| 2_4 | 10798 | 1_5 | 610 | 4_6_7 | 104 | 2_3_4_6_7 | 10 |
| 3_6 | 9303 | 5_6 | 527 | 1_2_4_5 | 87 | 4_5_6_7 | 9 |
| 0 | 8010 | 2_3_4 | 470 | 1_3_5_6 | 76 | 1_4_6_7 | 8 |
| 3_5 | 6894 | 2_5_7 | 470 | 1_4_7 | 76 | 5_6_7 | 8 |
| 2_5 | 6283 | 3_5_7 | 457 | 2_4_6_7 | 71 | 1_2_3_7 | 7 |
| 2 | 5803 | 3_4_7 | 451 | 4_5_7 | 69 | 1_2_7 | 7 |
| 2_6 | 5726 | 1_4_6 | 421 | 2_3_5_7 | 67 | 2_3_4_5_6 | 7 |
| 3_4 | 4735 | 1_2_6 | 395 | 1_2_5_6 | 64 | 3_5_6_7 | 7 |
| 5 | 4665 | 3_4_5 | 383 | 3_4_5_6 | 60 | 1_2_3_4_7 | 6 |
| 4_6 | 4224 | 4_5_6 | 351 | 2_4_5_7 | 57 | 1_2_4_6_7 | 6 |
| 6 | 3917 | 5_7 | 343 | 1_2_3_4 | 55 | 1_2_4_5_7 | 5 |
| 4_5 | 3292 | 3_6_7 | 336 | 1_3_5_7 | 55 | 1_2_3_5_7 | 4 |
| 2_4_6 | 2742 | 1_2_4_6 | 330 | 1_3_6_7 | 55 | 2_4_5_6_7 | 4 |
| 2_3 | 2252 | 1_3_4 | 330 | 2_3_6_7 | 47 | 1_2_3_4_5 | 3 |
| 2_4_5 | 1799 | 1_2 | 272 | 2_3_4_5 | 42 | 1_2_3_6_7 | 3 |
| 1_3 | 1787 | 1_6 | 258 | 1_2_4_7 | 35 | 1_3_4_5_7 | 3 |
| 2_3_6 | 1742 | 2_6_7 | 250 | 1_3_4_7 | 33 | 1_5_6_7 | 3 |
| 3_7 | 1352 | 1_2_3 | 213 | 1_5_7 | 33 | 1_6_7 | 3 |
| 3_4_6 | 1259 | 1_4_5 | 213 | 1_4_5_6 | 32 | 1_2_5_6_7 | 2 |
| 4_7 | 1162 | 1 | 187 | 3_4_6_7 | 30 | 1_3_4_6_7 | 2 |
| 1_4 | 1138 | 2_4_5_6 | 173 | 2_3_4_7 | 27 | 1_4_5_6_7 | 2 |
| 1_3_6 | 1119 | 2_3_7 | 163 | 3_4_5_7 | 24 | 1_2_3_4_5_6 | 1 |
| 2_3_5 | 1051 | 6_7 | 142 | 2_5_6_7 | 22 | 1_2_3_4_5_6_7 | 1 |
| 1_2_4 | 992 | 1_3_7 | 133 | 1_2_4_5_6 | 20 | 1_3_5_6_7 | 1 |
| 2_4_7 | 765 | 2_3_5_6 | 128 | 1_4_5_7 | 18 | 2_3_4_5_7 | 1 |
| 1_3_5 | 727 | 1_3_4_5 | 124 | 1_3_4_5_6 | 17 | 2_3_5_6_7 | 1 |
| 7 | 696 | 1_5_6 | 124 | 1_2_5_7 | 16 | 3_4_5_6_7 | 1 |
| 3_5_6 | 689 | 1_2_3_6 | 122 | 1_2_3_4_6 | 15 | | |
| 2_5_6 | 681 | 2_3_4_6 | 112 | 1_2_3_5_6 | 14 | | |

**A4.** Vidura's "gnomic hub"

| Verse | Vidura | Elsewhere |
|---|---|---|
| *traya evādhanā rājan bhāryā dāsas tathā sutaḥ /*<br>*yat te samadhigacchanti yasya te tasya tad dhanam //* | 05,033.057 | 01,077.022 |
| *arakṣitāraṃ rājānaṃ bhāryāṃ cāpriyavādinīm /*<br>*grāmakāmaṃ ca gopālaṃ vanakāmaṃ ca nāpitam //* | 05,033.068 | 12,057.045 |
| *ṣaṇṇām ātmani nityānām aiśvaryaṃ yo 'dhigacchati /*<br>*na sa pāpaiḥ kuto 'narthair yujyate vijitendriyaḥ //* | 05,033.070 | 03,202.020 |
| *etayopamayā dhīraḥ saṃnameta balīyase /*<br>*indrāya sa praṇamate namate yo balīyase //* | 05,034.035 | 12,067.011 |
| *ātmānam eva prathamaṃ deśarūpeṇa yo jayet /*<br>*tato 'mātyān amitrāṃś ca na moghaṃ vijigīṣate //* | 05,034.055 | 05,127.028 |
| *vaśyendriyaṃ jitāmātyaṃ dhṛtadaṇḍaṃ vikāriṣu /*<br>*parīkṣyakāriṇaṃ dhīram atyantaṃ śrīr niṣevate //* | 05,034.056 | 05,127.029 |
| *yasmai devāḥ prayacchanti puruṣāya parābhavam /*<br>*buddhiṃ tasyāpakarṣanti so 'pācīnāni paśyati //* | 05,034.078 | 02,072.008 |
| *buddhau kaluṣabhūtāyāṃ vināśe pratyupasthite /*<br>*anayo nayasaṃkāśo hṛdayān nāpasarpati //* | 05,034.079 | 02,072.009 |
| *buddhiśreṣṭhāni karmāṇi bāhumadhyāni bhārata /*<br>*tāni jaṅghājaghanyāni bhārapratyavarāṇi ca //* | 05,035.065 | 12,113.018 |
| *tṛṇāni bhūmir udakaṃ vāk caturthī ca sūnṛtā /*<br>*satām etāni geheṣu nocchidyante kadā cana //* | 05,036.032 | 03,002.052 |
| *dhūmāyante vyapetāni jvalanti sahitāni ca /*<br>*dhṛtarāṣṭrolmukānīva jñātayo bharatarṣabha //* | 05,036.058 | 05,062.019 |
| *ūrdhvaṃ prāṇā hy utkrāmanti yūnaḥ sthavira āyati /*<br>*pratyutthānābhivādābhyāṃ punas tān pratipadyate //* | 05,038.001 | 13,107.032 |
| *na buddhir dhanalābhāya na jāḍyam asamṛddhaye /*<br>*lokaparyāyavṛttāntaṃ prājño jānāti netaraḥ //* | 05,038.030 | 12,168.021 |
| *dhṛtyā śiśnodaraṃ rakṣet pāṇipādaṃ ca cakṣuṣā /*<br>*cakṣuḥśrotre ca manasā mano vācaṃ ca karmaṇā //* | 05,040.022 | 12,232.006 |

**A5.** High-frequency primary hemistichs

| Hemistich | FrH | MD | Fr1P | Fr2P |
|---|---|---|---|---|
| *amādyad indraḥ somena dakṣiṇābhir dvijātayaḥ* | 4 | 17,395 | 4 | 4 |
| *na hi tṛpyāmi pūrveṣāṃ śṛṇvānaś caritaṃ mahat* | 4 | 118,68 | 4 | 4 |
| *sukhasyānantaraṃ duḥkhaṃ duḥkhasyānantaraṃ sukham* | 4 | 9,187 | 5 | 4 |
| *yajasva vājimedhena vidhivad dakṣiṇāvatā* | 4 | 3,233 | 5 | 4 |
| *tam udyatagadaṃ dṛṣṭvā kailāsam iva śṛṅgiṇam* | 4 | 2,737 | 6 | 5 |
| *utthitāny agaṇeyāni kabandhāni samantataḥ* | 4 | 11,396 | 4 | 5 |
| *abhīṣāhāḥ śūrasenāḥ śibayo 'tha vasātayaḥ* | 7 | 3,421 | 7 | 9 |
| *ekataś ca dvitaś caiva tritaś caiva maharṣayaḥ* | 4 | 9,029 | 6 | 4 |
| *pāṇḍureṇātapatreṇa dhriyamāṇena mūrdhani* | 8 | 10,417 | 10 | 8 |
| *pṛthivī vāyur ākāśam āpo jyotiś ca pañcamam* | 10 | 1,899 | 11 | 10 |
| *atrāpy udāharantīmam itihāsaṃ purātanam* | 110 | 214 | 110 | 134 |
| *mā tāta sāhasaṃ kārṣīr mama pūrvaparigrahaḥ* | 4 | 36 | 4 | 6 |
| *uta śalya vijānīhi hanta bhūyo bravīmi te* | 4 | 18 | 4 | 5 |
| *etad rājan dhanaṃ mahyaṃ tena dīvyāmy ahaṃ tvayā* | 10 | 8 | 11 | 13 |
| *yat tvaṃ me hṛdayāj jāto vayaḥ svaṃ na prayacchasi* | 4 | 8 | 4 | 4 |
| *na tadā bhavitā tretā na kṛtaṃ dvāparaṃ na ca* | 5 | 4 | 5 | 6 |
| *yoginas taṃ prapaśyanti bhagavantaṃ sanātanam* | 20 | 3 | 20 | 21 |
| *etad rūpam udānasya paramaṃ brāhmaṇā viduḥ* | 7 | 2 | 8 | 7 |
| *sṛjantaḥ pādapās tatra vyāpya tiṣṭhanti tad vanam* | 5 | 2 | 5 | 5 |
| *teṣāṃ māṃ māninīṃ bhāryāṃ sūtaputraḥ padāvadhīt* | 5 | 2 | 5 | 5 |
| *viśvakarman namas te 'stu viśvātman viśvasaṃbhava* | 4 | 296 | 5 | 4 |
| *duryodhanabalaṃ sarvaṃ punar āsīt parāṅmukham* | 4 | 204 | 5 | 5 |
| *prāpnoti brahmaṇaḥ sthānaṃ yat paraṃ prakṛter dhruvam* | 4 | 44 | 4 | 5 |

FrH — frequency of the hemistich
MD — median distance
Fr1P — frequency of the first pāda
Fr2P — frequency of the second pāda

**A6.** Pāda multiplets with freq. > 10 and top-2 affinity < 0.2

| Pāda | Freq. | TA | T2A | P. *a–d* |
|---|---|---|---|---|
| *etasminn eva kāle tu* | 51 | 0.020 | 0.039 | *a* |
| *athānyad dhanur ādāya* | 47 | 0.043 | 0.085 | *a* |
| *tasya tad vacanaṃ śrutvā* | 47 | 0.043 | 0.064 | *a* |
| *tato duryodhano rājā* | 47 | 0.043 | 0.085 | *a* |
| *tato yudhiṣṭhiro rājā* | 46 | 0.043 | 0.065 | *a* |
| *etat te sarvam ākhyātaṃ* | 29 | 0.138 | 0.172 | *a* |
| *ete cānye ca bahavo* | 29 | 0.069 | 0.138 | *a* |
| *tam āpatantaṃ saṃpreksya* | 27 | 0.074 | 0.111 | *a* |
| *tatrādbhutam apaśyāma* | 27 | 0.037 | 0.074 | *a* |
| *evam uktaḥ pratyuvāca* | 23 | 0.087 | 0.130 | *a* |
| *tām āpatantīṃ sahasā* | 22 | 0.045 | 0.091 | *a* |
| *tato gaccheta rājendra* | 22 | 0.091 | 0.182 | *a* |
| *atra te vartayiṣyāmi* | 21 | 0.143 | 0.190 | *a* |
| *tato gaccheta dharmajña* | 20 | 0.050 | 0.100 | *a* |
| *hanta te kathayiṣyāmi* | 17 | 0.118 | 0.176 | *a* |
| *kasya cit tv atha kālasya* | 17 | 0.059 | 0.118 | *a* |
| *tam āpatantaṃ sahasā* | 17 | 0.118 | 0.176 | *a* |
| *tayoḥ samabhavad yuddhaṃ* | 17 | 0.059 | 0.118 | *a* |
| *tataḥ kruddho mahārāja* | 16 | 0.125 | 0.188 | *a* |
| *etac chrutvā tu vacanaṃ* | 15 | 0.067 | 0.133 | *a* |
| *vindānuvindāv āvantyau* | 15 | 0.067 | 0.133 | *a* |
| *ete cānye ca bahavaḥ* | 14 | 0.071 | 0.143 | *a* |
| *evam uktvā mahārāja* | 14 | 0.071 | 0.143 | *a* |
| *so 'nyat kārmukam ādāya* | 13 | 0.077 | 0.154 | *a* |
| *etāvad uktvā vacanaṃ* | 11 | 0.091 | 0.182 | *a* |
| *dharmarājo yudhiṣṭhiraḥ* | 62 | 0.032 | 0.048 | *b* |
| *śaraiḥ saṃnataparvabhiḥ* | 40 | 0.025 | 0.050 | *b* |
| *bhīmaseno mahābalaḥ* | 39 | 0.051 | 0.077 | *b* |
| *kuntīputro yudhiṣṭhiraḥ* | 38 | 0.053 | 0.079 | *b* |
| *dharmaputro yudhiṣṭhiraḥ* | 25 | 0.040 | 0.080 | *b* |
| *dhṛṣṭadyumnaś ca pārṣataḥ* | 22 | 0.091 | 0.182 | *b* |
| *kuntīputro dhanaṃjayaḥ* | 21 | 0.048 | 0.095 | *b* |
| *pāṇḍavānāṃ mahātmanām* | 20 | 0.100 | 0.150 | *b* |
| *bhāradvājaḥ pratāpavān* | 18 | 0.111 | 0.167 | *b* |
| *pitā devavratas tava* | 18 | 0.111 | 0.167 | *b* |
| *pāṇḍaveṣu mahātmasu* | 17 | 0.059 | 0.118 | *b* |
| *śataśo 'tha sahasraśaḥ* | 17 | 0.059 | 0.118 | *b* |
| *niyato niyatāśanaḥ* | 16 | 0.062 | 0.125 | *b* |
| *pāṇḍavānāṃ mahārathāḥ* | 16 | 0.062 | 0.125 | *b* |
| *dharmarājaṃ yudhiṣṭhiram* | 15 | 0.067 | 0.133 | *b* |

**A6** Pāda multiplets with freq. > 10 and top-2 affinity < 0.2 (contd.)

| Pāda | Freq. | TA | T2A | P. *a–d* |
|---|---|---|---|---|
| *putro duryodhanas tava* | 15 | 0.067 | 0.133 | *b* |
| *ratnāni vividhāni ca* | 15 | 0.067 | 0.133 | *b* |
| *bhīmasenaḥ pratāpavān* | 14 | 0.071 | 0.143 | *b* |
| *bhīmo bhīmaparākramaḥ* | 14 | 0.071 | 0.143 | *b* |
| *sātyakiḥ satyavikramaḥ* | 14 | 0.071 | 0.143 | *b* |
| *mṛtaṃ śuśruma sṛñjaya* | 13 | 0.077 | 0.154 | *b* |
| *pāṇḍavasya mahātmanaḥ* | 13 | 0.077 | 0.154 | *b* |
| *sarvalokapitāmahaḥ* | 13 | 0.077 | 0.154 | *b* |
| *dharmātmānaṃ yudhiṣṭhiram* | 12 | 0.083 | 0.167 | *b* |
| *mādrīputrau ca pāṇḍavau* | 12 | 0.083 | 0.167 | *b* |
| *pāṇḍavānām anīkinīm* | 12 | 0.083 | 0.167 | *b* |
| *sarvaśastrabhṛtāṃ varaḥ* | 12 | 0.083 | 0.167 | *b* |
| *bhīmasenaś ca pāṇḍavaḥ* | 11 | 0.091 | 0.182 | *b* |
| *duryodhanam amarṣaṇam* | 11 | 0.091 | 0.182 | *b* |
| *kuntīputraṃ yudhiṣṭhiram* | 11 | 0.091 | 0.182 | *b* |
| *kururājo yudhiṣṭhiraḥ* | 11 | 0.091 | 0.182 | *b* |
| *pāṇḍavena mahātmanā* | 11 | 0.091 | 0.182 | *b* |
| *samāsādya parasparam* | 11 | 0.091 | 0.182 | *b* |
| *nakulaḥ sahadevaś ca* | 28 | 0.071 | 0.143 | *c* |
| *duryodhano mahārāja* | 18 | 0.056 | 0.111 | *c* |
| *etad icchāmy ahaṃ śrotuṃ* | 18 | 0.111 | 0.167 | *c* |
| *abhidudrāva vegena* | 17 | 0.059 | 0.118 | *c* |
| *mahatā śaravarṣeṇa* | 14 | 0.071 | 0.143 | *c* |
| *kurūṇāṃ pāṇḍavānāṃ ca* | 13 | 0.077 | 0.154 | *c* |
| *mahatā rathavaṃśena* | 12 | 0.083 | 0.167 | *c* |
| *prāhiṇon mṛtyulokāya* | 12 | 0.083 | 0.167 | *c* |
| *vindānuvindāv āvantyau* | 11 | 0.091 | 0.182 | *c* |
| *idaṃ vacanam abravīt* | 93 | 0.022 | 0.043 | *d* |
| *śataśo 'tha sahasraśaḥ* | 76 | 0.026 | 0.039 | *d* |
| *tad adbhutam ivābhavat* | 73 | 0.027 | 0.041 | *d* |
| *tan me brūhi pitāmaha* | 73 | 0.027 | 0.041 | *d* |
| *tan mamācakṣva saṃjaya* | 43 | 0.023 | 0.047 | *d* |
| *te narāḥ svargagāminaḥ* | 38 | 0.053 | 0.079 | *d* |
| *satyam etad bravīmi te* | 35 | 0.029 | 0.057 | *d* |
| *durgāṇy atitaranti te* | 29 | 0.034 | 0.069 | *d* |
| *tenāsi hariṇaḥ kṛśaḥ* | 29 | 0.034 | 0.069 | *d* |
| *śaraiḥ saṃnataparvabhiḥ* | 29 | 0.103 | 0.172 | *d* |
| *dharmarājo yudhiṣṭhiraḥ* | 25 | 0.040 | 0.080 | *d* |
| *tatraivāntaradhīyata* | 25 | 0.040 | 0.080 | *d* |
| *tiṣṭha tiṣṭheti cābravīt* | 25 | 0.080 | 0.120 | *d* |

**A6** Pāda multiplets with freq. > 10 and top-2 affinity < 0.2 (contd.)

| Pāda | Freq. | TA | T2A | P. *a–d* |
|---|---|---|---|---|
| *yas te harati puṣkaram* | 25 | 0.040 | 0.080 | *d* |
| *sarvapāpaiḥ pramucyate* | 24 | 0.083 | 0.125 | *d* |
| *te vai nirayagāminaḥ* | 22 | 0.045 | 0.091 | *d* |
| *samantāt paryavārayan* | 21 | 0.048 | 0.095 | *d* |
| *tan me vyākhyātum arhasi* | 21 | 0.048 | 0.095 | *d* |
| *tad bhavān vaktum arhati* | 18 | 0.111 | 0.167 | *d* |
| *taṃ devā brāhmaṇaṃ viduḥ* | 18 | 0.111 | 0.167 | *d* |
| *tasmāt sarvatra pūjitaḥ* | 18 | 0.056 | 0.111 | *d* |
| *vidhidṛṣṭena karmaṇā* | 18 | 0.056 | 0.111 | *d* |
| *na prājñāyata kiṃ cana* | 17 | 0.059 | 0.118 | *d* |
| *kuntīputro yudhiṣṭhiraḥ* | 16 | 0.062 | 0.125 | *d* |
| *paraṃ kautūhalaṃ hi me* | 16 | 0.125 | 0.188 | *d* |
| *tan me nigadataḥ śṛṇu* | 16 | 0.062 | 0.125 | *d* |
| *tato yuddham avartata* | 16 | 0.062 | 0.125 | *d* |
| *yadi rājā na pālayet* | 16 | 0.062 | 0.125 | *d* |
| *bisastainyaṃ karoti yaḥ* | 15 | 0.067 | 0.133 | *d* |
| *kim anyad bhāgadheyataḥ* | 15 | 0.067 | 0.133 | *d* |
| *māmakāntaram āviśaḥ* | 15 | 0.067 | 0.133 | *d* |
| *śaravarṣair avākirat* | 15 | 0.067 | 0.133 | *d* |
| *tan nibodha yudhiṣṭhira* | 14 | 0.071 | 0.143 | *d* |
| *tatra kā paridevanā* | 14 | 0.071 | 0.143 | *d* |
| *bāhvor urasi cārpayat* | 13 | 0.077 | 0.154 | *d* |
| *dharmaputro yudhiṣṭhiraḥ* | 13 | 0.077 | 0.154 | *d* |
| *pāṇḍavānām anīkinīm* | 13 | 0.077 | 0.154 | *d* |
| *tasthau girir ivācalaḥ* | 13 | 0.077 | 0.154 | *d* |
| *yugānte paryupasthite* | 13 | 0.077 | 0.154 | *d* |
| *śaravarṣair avākiran* | 13 | 0.077 | 0.154 | *d* |
| *paśya kālasya paryayam* | 12 | 0.083 | 0.167 | *d* |
| *sarvasainyasya paśyataḥ* | 12 | 0.083 | 0.167 | *d* |
| *vyetu te mānaso jvaraḥ* | 12 | 0.083 | 0.167 | *d* |
| *śṛṇu cedaṃ vaco mama* | 12 | 0.083 | 0.167 | *d* |
| *manye śocanti putrakāḥ* | 11 | 0.091 | 0.182 | *d* |
| *sarvaśastrabhṛtāṃ varaḥ* | 11 | 0.091 | 0.182 | *d* |
| *tadā bharatasattama* | 11 | 0.091 | 0.182 | *d* |
| *tathā nītir vidhīyatām* | 11 | 0.091 | 0.182 | *d* |

**A7.** Verses with three vocatives in end position

02,001.004 *yuktam etat tvayi vibho yathāttha puruṣarṣabha /*
*prītipūrvam ahaṃ kiṃ cit kartum icchāmi bhārata //*

02,006.010 *mānuṣeṣu na me tāta dṛṣṭapūrvā na ca śrutā /*
*sabhā maṇimayī rājan yatheyaṃ tava bhārata //*

03,014.004 *vaicitravīryaṃ rājānam alaṃ dyūtena kaurava /*
*putrāṇāṃ tava rājendra tvannimittam iti prabho //*

03,023.022 *jahi śālvaṃ mahābāho mainaṃ jīvaya keśava /*
*sarvaiḥ parākramair vīra vadhyaḥ śatrur amitrahan //*

03,027.009 *idaṃ tu vacanaṃ pārtha śṛṇv ekāgramanā mama /*
*bhrātṛbhiḥ saha kaunteya yat tvāṃ vakṣyāmi kaurava //*

03,038.020 *yat te kuntī mahābāho jātasyaicchad dhanaṃjaya /*
*tat te 'stu sarvaṃ kaunteya yathā ca svayam icchasi //*

03,049.018 *yajñaiś ca vividhais tāta kṛtaṃ pāpam ariṃdama /*
*avadhūya mahārāja gacchema svargam uttamam //*

03,061.053 *vīra vikrānta dharmajña satyasaṃdha mahīpate /*
*yady asy asmin vane rājan darśayātmānam ātmanā //*

03,082.087 *tato gaccheta rājendra dharmapṛṣṭhaṃ samāhitaḥ /*
*yatra dharmo mahārāja nityam āste yudhiṣṭhira /*
*abhigamya tatas tatra vājimedhaphalaṃ labhet //*

03,083.060 *tatra kūpo mahārāja viśruto bharatarṣabha /*
*samudrās tatra catvāro nivasanti yudhiṣṭhira //*

03,091.003 *asmān api mahārāja netum arhasi pāṇḍava /*
*asmābhir hi na śakyāni tvad ṛte tāni kaurava //*

03,129.011 *atrādyāho nivatsyāmaḥ kṣapāṃ bharatasattama /*
*dvāram etad dhi kaunteya kurukṣetrasya bhārata //*

03,140.001 *uśīrabījaṃ mainākaṃ giriṃ śvetaṃ ca bhārata /*
*samatīto 'si kaunteya kālaśailaṃ ca pārthiva //*

03,154.024 *eṣa cāsmān vayaṃ cainaṃ yudhyamānāḥ paraṃtapa /*
*sūdayema mahābāho deśakālo hy ayaṃ nṛpa //*

03,162.012 *tvam imāṃ pṛthivīṃ rājan praśāsiṣyasi pāṇḍava /*
*svasti prāpnuhi kaunteya kāmyakaṃ punar āśramam //*

03,192.008 *maharṣir viśrutas tāta uttaṅka iti bhārata /*
*marudhanvasu ramyeṣu āśramas tasya kaurava //*

03,192.022 *prītas te 'ham alaulyena bhaktyā ca dvijasattama /*
*avaśyaṃ hi tvayā brahman matto grāhyo varo dvija //*

05,053.014 *tasyādya vasudhā rājan nikhilā bharatarṣabha /*
*yasya bhīmārjunau yodhau sa rājā rājasattama //*

05,054.001 *na bhetavyaṃ mahārāja na śocyā bhavatā vayam /*
*samarthāḥ sma parān rājan vijetuṃ samare vibho //*

05,071.005 *na hi kārpaṇyam āsthāya śakyā vṛttir yudhiṣṭhira /*
*vikramasva mahābāho jahi śatrūn ariṃdama //*

05,093.013 *tvayy adhīnaḥ śamo rājan mayi caiva viśāṃ pate /*
*putrān sthāpaya kauravya sthāpayiṣyāmy ahaṃ parān //*

05,149.041 *mayāpi hi mahābāho tvatpriyārtham ariṃdama /*
*kṛto yatno mahāṃs tatra śamaḥ syād iti bhārata /*
*dharmasya gatam ānṛṇyaṃ na sma vācyā vivakṣatām //*

06,012.019 *sarveṣv eva mahāprājña dvīpeṣu kurunandana /*
*gauraḥ kṛṣṇaś ca varṇau dvau tayor varṇāntaraṃ nṛpa //*

06,041.033 *yady evaṃ nābhigacchethā yudhi māṃ pṛthivīpate /*
*śapeyaṃ tvāṃ mahārāja parābhāvāya bhārata //*

06,091.010 *śṛṇu rājan mama vaco yat tvā vakṣyāmi kaurava /*
*yathā tvayā mahārāja vartitavyaṃ paraṃtapa //*

06,095.031 *duryodhano mahārāja trigartaiḥ sarvato vṛtaḥ /*
*vyūhamadhye sthito rājan pāṇḍavān prati bhārata //*

06,102.034 *iti tat kuru kaunteya satyaṃ vākyam ariṃdama /*
*kṣatradharmam anusmṛtya yudhyasva bharatarṣabha //*

06,106.042 *nyamajjaṃs te mahārāja tasya kāye mahātmanaḥ /*
*yathā haṃsā mahārāja taḍāgaṃ prāpya bhārata //*

07,086.039 *evam etan mahābāho yathā vadasi mādhava /*
*na tu me śudhyate bhāvaḥ śvetāśvaṃ prati māriṣa //*

07,123.029 *tavaiva bhāro vārṣṇeya tavaiva vijayaḥ prabho /*
*vardhanīyās tava vayaṃ preṣyāś ca madhusūdana //*

08,055.026 *tenārdyamānā rājendra senā tava viśāṃ pate /*
*vyabhrāmyata mahārāja bhinnā naur iva sāgare //*

09,016.085 *evam etan mahārāja yuddhaśeṣam avartata /*
*tava durmantrite rājan sahaputrasya bhārata //*

09,030.013 *kriyābhyupāyair indreṇa tridivaṃ bhujyate vibho /*
*kriyā balavatī rājan nānyat kiṃ cid yudhiṣṭhira //*

09,039.002 *devāpiś ca kathaṃ brahman viśvāmitraś ca sattama /*
*tan mamācakṣva bhagavan paraṃ kautūhalaṃ hi me //*

11,007.016 *sa caitat prāpnute rājan yat tvaṃ prāpto narādhipa /*
*rājyanāśaṃ suhṛnnāśaṃ sutanāśaṃ ca bhārata //*

11,016.025 *etad evaṃvidhaṃ vīra saṃpaśyāyodhanaṃ vibho /*
*paśyamānā ca dahyāmi śokenāhaṃ janārdana //*

12,025.002 *araṇye vasatāṃ tāta bhrātṝṇāṃ te tapasvinām /*
*manorathā mahārāja ye tatrāsan yudhiṣṭhira //*

12,200.045 *nārado 'pi atha kṛṣṇasya paraṃ mene narādhipa /*
*śāśvatatvaṃ mahābāho yathāvad bharatarṣabha //*

12,273.028 *prāpto 'smi bhagavan deva tvatsakāśam ariṃdama /*
*yat kartavyaṃ mayā deva tad bhavān vaktum arhati //*

13,010.005 *nidarśanam idaṃ rājañ śṛṇu me bharatarṣabha /*
*duruktavacane rājan yathā pūrvaṃ yudhiṣṭhira /*
*brahmāśramapade vṛttaṃ pārśve himavataḥ śubhe //*

13,010.032 *tathaiva sa ṛṣis tāta kāladharmam avāpya ha /*
*purohitakule vipra ājāto bharatarṣabha //*

13,010.052 *etasmāt kāraṇād brahman prahase tvāṃ dvijottama /*
*na tvāṃ paribhavan brahman prahasāmi gurur bhavān //*

13,010.055 *itas tvam adhamām anyāṃ mā yoniṃ prāpsyase dvija /*
*gṛhyatāṃ draviṇaṃ vipra pūtātmā bhava sattama //*

13,011.001 *kīdṛśe puruṣe tāta strīṣu vā bharatarṣabha /*
*śrīḥ padmā vasate nityaṃ tan me brūhi pitāmaha //*

13,040.001 *evam etan mahābāho nātra mithyāsti kiṃ cana /*
*yathā bravīṣi kauravya nārīṃ prati janādhipa //*

13,083.028 *tato 'haṃ vismito rājan pratibuddho viśāṃ pate /*
*suvarṇadāne 'karavaṃ matiṃ bharatasattama //*

13,104.029 *tasmād rakṣyaṃ tvayā putra brahmasvaṃ bharatarṣabha /*
*yadīcchasi mahābāho śāśvatīṃ gatim uttamām //*

14,003.008 *rājasūyāśvamedhau ca sarvamedhaṃ ca bhārata /*
*naramedhaṃ ca nṛpate tvam āhara yudhiṣṭhira //*

14,019.041 *iti saṃparipṛṣṭo 'haṃ tena vipreṇa mādhava /*
*pratyabruvaṃ mahābāho yathāśrutam ariṃdama //*

14,050.044 *ko nv asau brāhmaṇaḥ kṛṣṇa kaś ca śiṣyo janārdana /*
*śrotavyaṃ cen mayaitad vai tat tvam ācakṣva me vibho //*

14,065.018 *so 'yaṃ jāto mṛtas tāta paśyainaṃ puruṣarṣabha /*
*uttarāṃ ca subhadrāṃ ca draupadīṃ māṃ ca mādhava //*

14,066.008 *bhavitātaḥ paraṃ duḥkhaṃ kiṃ nu manye janārdana /*
*abhimanyoḥ sutāt kṛṣṇa mṛtāj jātād ariṃdama //*

14,072.021 *sa hayaḥ pṛthivīṃ rājan pradakṣiṇam ariṃdama /*
*sasārottarataḥ pūrvaṃ tan nibodha mahīpate //*

14,077.025 *eṣa te bharataśreṣṭha svasrīyasyātmajaḥ śiśuḥ /*
*abhivādayate vīra taṃ paśya puruṣarṣabha //*

14,077.036 *eṣa prasādya śirasā mayā sārdham ariṃdama /*
*yācate tvāṃ mahābāho śamaṃ gaccha dhanaṃjaya //*

14,081.007 *tasmād asi mayā putra yuddhārthaṃ paricoditaḥ /*
*mā pāpam ātmanaḥ putra śaṅkethās tv aṇv api prabho //*

14,082.007 *tvatprītyarthaṃ hi kauravya kṛtam etan mayānagha /*
*yat tac chṛṇu mahābāho nikhilena dhanaṃjaya //*

14,094.007 *yajñasya vidhim agryaṃ vai phalaṃ caiva nararṣabha /*
*gadataḥ śṛṇu me rājan yathāvad iha bhārata //*

15,005.021 *ucitaṃ naḥ kule tāta sarveṣāṃ bharatarṣabha /*
*putreṣv aiśvaryam ādhāya vayaso 'nte vanaṃ nṛpa //*

15,006.016 *tāpasye me manas tāta vartate kurunandana /*
*ucitaṃ hi kule 'smākam araṇyagamanaṃ prabho //*

15,023.001 *evam etan mahābāho yathā vadasi pāṇḍava /*
*kṛtam uddharṣaṇaṃ pūrvaṃ mayā vaḥ sīdatāṃ nṛpa //*

18,002.035 *saṃtiṣṭhasva mahābāho muhūrtam api bhārata /*
*tvayi tiṣṭhati kauravya yātanāsmān na bādhate //*

18,003.018 *taṃ paśya puruṣavyāghram ādityatanayaṃ vibho /*
*svasthānasthaṃ mahābāho jahi śokaṃ nararṣabha //*

**A8.** One-liners belonging to the *A*-hit-*B* frame

06,043.071ab *anuvindas tu gadayā kuntibhojam atāḍayat*
06,043.072ab *kuntibhojasutaś cāpi vindaṃ vivyādha sāyakaiḥ*
06,043.074ef *uttaraś cāpi taṃ dhīraṃ vivyādha niśitaiḥ śaraiḥ*
06,048.025cd *vikarṇo daśabhir bhallai rājan vivyādha pāṇḍavam*
06,048.031ab *bhīṣmas tu rathināṃ śreṣṭhas tūrṇaṃ vivyādha pāṇḍavam*
06,048.047ab *arjunaḥ pañcaviṃśatyā bhīṣmam ārcchac chitaiḥ śaraiḥ*
06,048.047cd *bhīṣmo 'pi samare pārthaṃ vivyādha triṃśatā śaraiḥ*
06,049.036ab *sa droṇaṃ niśitair bāṇai rājan vivyādha saptabhiḥ*
06,065.023ab *bhīmasenas tataḥ kruddho bhāradvājam avidhyata*
06,075.042cd *śatānīko jayatsenaṃ vivyādha hṛdaye bhṛśam*
06,078.014ab *bhāradvājas tu samare matsyaṃ vivyādha patriṇā*
06,084.016ab *mahodaras tu samare bhīmaṃ vivyādha patribhiḥ*
06,090.015cd *bhāradvājas tato bhīmaṃ ṣaḍviṃśatyā samārpayat*
06,099.009cd *śikhaṇḍī pañcaviṃśatyā bhīṣmaṃ vivyādha sāyakaiḥ*
06,106.032ab *duḥśāsanas tataḥ kruddhaḥ pārthaṃ vivyādha pañcabhiḥ*
06,107.019ab *sudakṣiṇas tu samare kārṣṇiṃ vivyādha pañcabhiḥ*
06,107.043ab *saumadattir atho bhīmam ājaghāna stanāntare*
06,109.004ab *śalyas tu navabhir bāṇair bhīmasenam atāḍayat*
06,110.027cd *madreśvaro raṇe jiṣṇuṃ tāḍayām āsa roṣitaḥ*
06,112.098ab *śikhaṇḍī tu raṇe rājan vivyādhaiva pitāmaham*
07,013.035ab *senāpatiḥ suśarmāṇaṃ śīghraṃ marmasv atāḍayat*
07,015.034ab *vyāghradattaś ca pāñcālyo droṇaṃ vivyādha mārgaṇaiḥ*
07,036.015cd *duḥsaho navabhir bāṇair abhimanyum avidhyata*
07,036.030ab *karṇas taṃ pañcaviṃśatyā nārācānāṃ samarpayat*
07,066.024ab *droṇas tu pañcabhir bāṇair vāsudevam atāḍayat*
07,067.013ab *droṇas tu pañcaviṃśatyā śvetavāhanam ārdayat*
07,079.022ab *tato drauṇis trisaptatyā vāsudevam atāḍayat*
07,084.003ab *alambuso bhṛśaṃ kruddho ghaṭotkacam atāḍayat*
07,088.019ab *sātyakis tu raṇe droṇaṃ rājan vivyādha saptabhiḥ*
07,088.022ab *yuyudhānaḥ punar droṇaṃ vivyādha daśabhiḥ śaraiḥ*
07,090.012cd *dhṛṣṭadyumnas tribhiś cāpi kṛtavarmāṇam ārdayat*
07,092.004cd *citrasenaś ca śaineyaṃ dvābhyāṃ vivyādha māriṣa*
07,092.031ab *kṛtavarmā tu śaineyaṃ ṣaḍviṃśatyā samārpayat*
07,096.030cd *duḥśāsanaḥ ṣoḍaśabhir vivyādha śinipuṃgavam*

07,096.031cd *duḥsahaḥ pañcadaśabhir vivyādhorasi sātyakim*
07,096.037cd *durmukhaś ca dvādaśabhī rājan vivyādha sātyakim*
07,104.016ab *tataḥ karṇas tu viṃśatyā śarāṇāṃ bhīmam ārdayat*
07,109.003ab *atha karṇaḥ śaravrātair bhīmaṃ balavad ardayat*
07,120.060ab *sātvataś ca tribhir bāṇaiḥ karṇaṃ vivyādha māriṣa*
07,120.078ab *madrarājas tu kaunteyam avidhyat triṃśatā śaraiḥ*
07,137.008ab *somadattas tu taṃ ṣaṣṭyā vivyādhorasi mādhavam*
07,137.008cd *sātyakiś cāpi taṃ rājann avidhyat sāyakaiḥ śitaiḥ*
07,141.043ab *atha duryodhano rājā bhīmaṃ vivyādha patribhiḥ*
07,144.010ab *saṃkruddhaḥ śakuniṃ ṣaṣṭyā vivyādha bharatarṣabha*
07,171.060ab *yuvarājas tu viṃśatyā drauṇiṃ vivyādha patriṇām*
08,018.017ab *sutasomas tu śakuniṃ vivyādha niśitaiḥ śaraiḥ*
08,019.008ab *satyasenas tribhir bāṇair vivyādha yudhi pāṇḍavam*
08,032.070ab *dhṛṣṭadyumnas tataḥ karṇam avidhyad daśabhiḥ śaraiḥ*
08,033.017ab *yudhiṣṭhiraḥ punaḥ karṇam avidhyat triṃśatā śaraiḥ*
08,040.021cd *dhṛṣṭadyumnas tava sutaṃ tāḍayām āsa sāyakaiḥ*
08,042.049ab *arjuno 'pi mahārāja drauṇiṃ vivyādha patribhiḥ*
08,045.016ab *tato 'rjuno raṇe drauṇiṃ vivyādha daśabhiḥ śaraiḥ*
08,056.017ef *nakulaś ca śatenājau karṇaṃ vivyādha sāyakaiḥ*
08,056.021ab *bhīmasenas tu taṃ kruddho vivyādha triṃśatā śaraiḥ*
09,010.029ab *tato vṛkodaraḥ kruddhaḥ śalyaṃ vivyādha saptabhiḥ*
09,012.011cd *dharmarājas tathā ṣaṣṭyā gātre śalyaṃ samarpayat*
09,025.010ab *śrutarvā tu tato bhīmaṃ kruddho vivyādha māriṣa*
09,027.002ef *ulūkaś ca raṇe bhīmaṃ vivyādha daśabhiḥ śaraiḥ*
09,027.026ab *ulūko 'pi mahārāja bhīmaṃ vivyādha saptabhiḥ*
09,060.026cd *duryodhano vāsudevaṃ vāgbhir ugrābhir ārdayat*

# REFERENCES

## Abbreviations of primary texts

*CE* see *Mbh.*

*Mbh* *The Mahābhārata for the first time critically edited*. Several editors, 19 vols., Poona 1933–1959.
Electronic text: on the basis of the text entered by Muneo Tokunaga et al., revised by John Smith, Pune 1999.
http://gretil.sub.uni-goettingen.de/gret_utf.htm#MBh

*Rm* *The Vālmīki-Rāmāyaṇa for the first time critically edited.* Several editors, 7 vols., Baroda 1960–1975.
Electronic text: on the basis of the text entered by Muneo Tokunaga et al., revised by John Smith, 1995.
http://gretil.sub.uni-goettingen.de/gret_utf.htm#Ram

## Abbreviations of journal and series titles

*ABORI* *Annals of the Bhandarkar Oriental Research Institute.*
*ALB* *Adyar Library Bulletin.*
*CSL* *Clay Sanskrit Library.*
*HSTCLPH* *Harvard Studies in Classical Philology*
*IIJ* *Indo-Iranian Journal*
*IT* *Indologica Taurinensia.*
*JAOS* *Journal of the American Oriental Society.*
*OT* *Oral Tradition.*
*TAPA* *Transactions and Proceedings of the American Philological Association.*
*YCLST* *Yale Classical Studies.*

## Secondary literature


BAKKER 1988 Egbert J. Bakker: *Linguistics and formulas in Homer.* Amsterdam & Philadelphia (doctoral thesis, Rijksuniversiteit Leiden).

BAKKER 1997 —: *Poetry in Speech. Orality and Homeric Discourse.* Ithaca & London.

BAKKER 2005 —: *Pointing at the Past. From Formula to Performance in Homeric Epics.* Washington (Hellenic Studies 12).

BAKKER & FABBRICOTTI 1991 — & F. Fabbricotti: "Peripheral and nuclear semantics in homeric diction. The case of dative expressions for 'spear'". *Mnemosyne* 44, pp. 63–84.

| | |
|---|---|
| Balk 2011 | Michael Balk: *Untersuchungen zum Udānavarga*. Marburg (Indica et Tibetica 53). |
| Barnes 1979 | Harry R. Barnes: "Enjambement and oral composition". *TAPA* 109, pp. 1–10. |
| Bastian et al. 2009 | M. Bastian, S. Heymann & M. Jacomy: "Gephi: an open source software for exploring and manipulating networks". International AAAI Conference on Weblogs and Social Media. URL http://gephi.github.io. |
| Biardeau 1968 | Madeleine Biardeau: "Some more considerations about textual criticism". *Purāṇa* 10, pp. 115–123. |
| Biardeau 2002 | —: *Le Mahābhārata*, vol. 1. Paris. |
| Bidnur 2009 | Jahnavi Bidnur: *Grammatical substitution systems in the Mahābhārata.* Pune University, unpublished doctoral thesis. Pune. |
| Bloomfield 1916 | Maurice Bloomfield: *Rig-Veda repetitions. The repeated verses and distichs and stanzas of the Rig-Veda in systematic presentation and with critical discussion,* 3 vols. Cambridge, Mass. 1916. |
| Bowles 2006 + 2008 | *Mahābhārata. Book Eight. Karṇa.* Translated by Adam Bowles. Vol. 1–2. New York (Clay Sanskrit Library). |
| Bowra 1961 | Cecil Maurice Bowra: *Heroic poetry*. London. |
| Bowra 1962 | —: "Style". Alan J. B. Wace & Frank H. Stubbings (eds.), *A companion to Homer,* London, pp. 26–37. |
| Bozzone 2010 | Chiara Bozzone: "New Perspectives on Formularity". Stephanie W. Jamison et al. (eds.), *Proceedings of the 21st Annual UCLA Indo-European Conference*, Bremen, pp. 27–44. |
| Bozzone 2014 | —: *Constructions. A new approach to formularity, discourse, and syntax in Homer.* Unpublished dissertation, University of California, Los Angeles. |
| Brereton 1982 | Joel Brereton: "The particle *iva* in Vedic prose". *JAOS* 102, pp. 443–450. |
| Brockington 1969 | John Leonard Brockington: "A Note on Mrs. Sen's Article about the *Rāmāyaṇa*". *JAOS* 89, pp. 412–414. |
| Brockington 1970 | —: "Stereotyped Expressions in the Rāmāyaṇa". *JAOS* 90, pp. 210–227. |
| Brockington 1979 | —: "Vālmīki's proverbs". *IT* 7, pp. 139–150 (Dr. Ludwik Sternbach Felicitation Volume, part 1). |
| Brockington 1984 | —: *Righteous Rāma. The evolution of an epic.* Delhi. |

BROCKINGTON 1985 —: "Fashions in formulæ. Sanskrit epic tradition III". *Proceedings of the Fifth World Sanskrit Conference, Varanasi.* New Delhi, pp. 77–90 (cited after the reprint in: BROCKINGTON 2000b, pp. 339–352).

BROCKINGTON 1998a —: *The Sanskrit Epics.* Leiden (Handbuch d. Orientalistik, Abt. 2, Bd. 12).

BROCKINGTON 1998b —: "Formulaic Expression in the Rāmāyaṇa: Evidence for Oral Composition?". Lauri Honko et al. (eds.), *The Epic. Oral and Written*, Mysore, pp. 128–138.

BROCKINGTON 1999a —: "Formulæ in the *Rāmāyaṇa* — an index of orality?" Mary Brockington & Peter Schreiner (eds.) *Composing a Tradition: Concepts, Techniques and Relationships. Proceedings of the First Dubrovnik International Conference on the Sanskrit Epics and Purāṇas,* Zagreb, pp. 121–130.

BROCKINGTON 1999b —: "Issues involved in the shift from oral to written transmission of the Epics: a workshop report". Mary Brockington & Peter Schreiner (eds.), *Composing a Tradition: Concepts, Techniques and Relationships. Proceedings of the First Dubrovnik International Conference on the Sanskrit Epics and Purāṇas,* Zagreb, pp. 131–138.

BROCKINGTON 2000a —: "The textualization of the Sanskrit epics". Lauri Honko (ed.), *Textualization of Oral Epics,* Berlin & New York, pp. 195–215 (Trends in Linguistics. Studies and Monographs 128).

BROCKINGTON 2000b —: *Epic threads. John Brockington on the Sanskrit Epics.* Edited by Greg Bailey and Mary Brockington. New Delhi.

VAN BUITENEN 1974–1978 *The Mahābhārata.* Translated and edited by J. A. B. van Buitenen. Vol. 1: The book of the beginning. Vol. 2: The book of the assembly hall. The book of the forest. Vol. 3: The book of Virāṭa. The book of the effort. Chicago & London.

BUSSE 2012 Dietrich Busse: *Frame-Semantik*. Berlin.

CAIRNS 1991 Francis Cairns: "Orality, writing and reoralisation: some departures and arrivals in Homer and Apollonius Rhodius". Hildegard L.C. Tristram (ed.), *New Methods in the research of epic*, Tübingen, pp. 63–84 (ScriptOralia 107).

CHERNIAK 2008 + 2009 *Mahābhārata. Book Six. Bhīṣma.* Translated by Alex Cherniak. Vol. 1–2. New York (Clay Sanskrit Library).

| | |
|---|---|
| Csardi & Nepusz 2006 | G. Csardi & T. Nepusz: "The igraph software package for complex network research". *InterJournal, Complex Systems,* p. 1695. URL http://igraph.org. |
| van Daalen 1980 | L. A. van Daalen: *Vālmīki's Sanskrit.* Leiden (Reprint Delhi 2004). |
| Deaton 1997 | Angus Deaton: *Analysis of household surveys.* Baltimore & London. |
| Donnet 1980 | «Aspects des mécanismes formulaires dans le Nalopākhyānam». *Indianisme et Bouddhisme. Mélanges offerts à Mgr Étienne Lamotte*, Louvain, pp. 53–78 (Publications de l'Institut Orientaliste de Louvain 23). |
| Dunham 1991 | John Dunham: "Manuscripts used in the Critical Edition of the *Mahābhārata*. A survey and discussion". Arvind Sharma (ed.), *Essays on the Mahābhārata*, Leiden, pp. 1–18. |
| Dunkel 1996 | George E. Dunkel: "The relative stylistic orality of Plautus and Terence, as measured by enjambment-types; with remarks on enjambement in literary Saturnians and Menander". *Die Sprache* 38, pp. 201–212. |
| Eder & Pawłowski 2001 | M. Eder & A. Pawłowski: "Quantity or Stress? Sequential Analysis of Latin Prosody". *Journal of Quantitative Linguistics* 8, pp. 81–97. |
| Eder 2008 | Maciej Eder: "How Rhythmical is hexameter: a statistical approach to ancient epic poetry". *Digital Humanities 2008: Book of Abstracts.* Oulu, pp. 112–14. |
| Edgerton 1944 | Franklin Edgerton: *The Sabhāparvan,* being the second book of the Mahābhārata the great epic of India, for the first time critically edited by Franklin Edgerton. Poona 1944 (The Mahābhārata, vol. 2). |
| Edwards 1986 | Mark W. Edwards: "Homer and oral tradition: the formula I". *OT* 1, pp. 171–230. |
| Edwards 1988 | —: "Homer and oral tradition: the formula II". *OT* 3, pp. 11–60. |
| Elwert & Sellmer forthcoming | Frederik Elwert & Sven Sellmer: "Modelling structure and content. Socio-semantic network analysis of the *Mahābhārata*". *Leonardo.* |
| Finkelberg 1989 | Margalit Finkelberg: "Formulaic and nonformulaic elements in Homer". *Classical Philology* 84, pp. 179–197. |
| Finkelberg 2004 | —: "Oral theory and the limits of formulaic diction". *OT* 19, pp. 236–252. |

FINKELBERG 2012 —: "Oral formulaic theory and the individual poet". Franco Montanari et al., *Homeric contexts. Neoanalysis and the interpretation of oral poetry*, Berlin & Boston, pp. 73–82 (Trends in Classics. Suppl. vol. 12).

FITZGERALD 2004 James L. Fitzgerald: *The Mahābhārata. Book 11: The book of the women. Book 12: The book of peace, part one.* Translated and edited by James L. Fitzgerald. Chicago & London.

FITZGERALD 2005 —: "Toward a database of the non-ānuṣṭhubh verses of the *Mahābhārata*". Petteri Koskikallio (ed.), *Epics, Khilas, and Purāṇas. Continuities and Ruptures.* Proceedings of the Third Dubrovnik International Conference on the Sanskrit Epics and Purāṇas, Zagreb, pp. 137–148.

FITZGERALD 2009 —: "A Preliminary Study of the 681 *triṣṭubh* passages of the *Mahābhārata*". Robert P. Goldman & Muneo Tokunaga (eds.), *Epic Undertakings,* Delhi 2009, pp. 95–117 (Papers of the 12th World Sanskrit Conference 2).

FOLEY 1988 John Miles Foley: *The theory of oral composition. History and Methodology.* Bloomington & Indianapolis (Folkloristics).

FOLEY 1990 —: *Traditional oral epic. The* Odyssey, Beowulf, *and the Serbo-Croation return song.* Berkeley etc.

FRIEDRICH 2007 Rainer Friedrich: *Formular economy in Homer. The poetics of the breaches.* Stuttgart (Hermes-Einzelschriften 100).

GONDA 1959 Jan Gonda: *Stylistic repetition in the Veda*. Amsterdam (Verh. d. kon. ned. Akad. v. Wet., afd. letterkunde, N.R., LXV 3).

GRINCER 1974 Paveľ A. Grincer: *Drevneindijskij ėpos. Genezis i tipologija.* Moscow 1974 (Issledovanija po foľkloru i mifologii vostoka).

HAINSWORTH 1964 J. B. Hainsworth: "Structure and content in epic formulæ: the question of the unique expression". *Classical Quarterly* 14, pp. 155–164.

HAINSWORTH 1968 —: *The flexibility of the Homeric formula.* Oxford.

HAINSWORTH 1976 —: "Phrase-clusters in Homer". A. M. Davies & W. Meid (eds.), *Studies in Greek, Italic, and Indo-European Linguistics Offered to Leonard R. Palmer,* Innsbruck, pp. 83–86.

HAINSWORTH 1989 —: "Ancient Greek. The language and diction of Homeric Greek". J. B. Hainsworth (ed.), *Traditions of heroic and epic poetry,* vol. 2, London, pp. 12–28.

HARA 1994 Minoru Hara: "On phrases not shared by the Mahābhārata and Rāmāyaṇa". *IT* 19/20 (1993/94), pp. 147–167.

HEIN 1986 — Norvin Hein: "Epic *sarvabhūtahite rataḥ*. A byword of non-Bhārgava editors". *ABORI* 67, pp. 17–43.

HELLWIG 2010 — Oliver Hellwig: "Der Pfeilkampf im Rāmāyaṇa". Unpublished text of a lecture held at the Freie Universität Berlin, 14.10.2010.

HELLWIG 2012 — —: *DCS. The Digital Corpus of Sanskrit*. Heidelberg (2010–2012). URL http://kjc-fs-cluster.kjc.uni-heidelberg.de/dcs

HILTEBEITEL 2000 — Alf Hiltebeitel: Review of BROCKINGTON 1998a. *IIJ* 43, pp. 161–169.

HILTEBEITEL 2002 — —: *Rethinking the Mahābhārata. A reader's guide to the education of the dharma king*. New Delhi.

HILTEBEITEL 2011 — —: "Weighting orality and writing in the Sanskrit epics". Idem: *Reading the fifth Veda: studies on the Mahābhārata* (Essays, vol. 1), Leiden, pp. 3–29.

HOLOKA 1991 — James P. Holoka: "Homer, oral poetry theory, and comparative literature: major trends and controversies in twentieth-century criticism". Joachim Latacz (ed.), *Zweihundert Jahre Homer-Forschung. Rückblick und Ausblick*, Stuttgart & Leipzig, pp. 456–481 (Colloquium Rauricum 2).

HOPKINS 1893 — E. Washburn Hopkins: "Parallel features in the two Sanskrit epics". *The American Journal of Philology* 20, pp. 138–151.

HOPKINS 1899 — —: "Proverbs and tales common to the two Sanskrit epics". *The American Journal of Philology* 20, pp. 22–39.

HOPKINS 1901 — —: *The Great Epic of India. Character and origin of the Mahabharata*. Delhi (Reprint) 1993.

INGALLS 1991 — Daniel H. H. Ingalls & Daniel H. H. Ingalls, Jr.: "The *Mahābhārata*: Stylistic study, computer analysis, and concordance". Arvind Sharma (ed.), *Essays on the Mahābhārata*, Leiden, pp. 19–56.

JACOBI 1896 — Hermann Jacobi: "Über den Śloka im Mahābhārata". *Gurupūjākaumudī. Festgabe A. Weber,* Leipzig, pp. 50–53 [= B. Kölver (ed.): H. Jacobi, *Kleine Schriften*, vol. 1, Wiesbaden 1970, pp. 185–188].

JAHN 1987 — *Zum Wortfeld ‚Seele-Geist' in der Sprache Homers*. München (Zetemata 83).

DE JONG 1975 — J. W. de Jong: "Recent Russian publications on the Indian epic". *Adyar Library Bulletin* 39, pp. 1–42.

| | |
|---|---|
| KANE 1939 | P. V. Kane: "The Mahābhārata verses and very ancient Dharmasūtras and other works". S. M. Katre & P. M. Gode (eds.), *A Volume of Eastern and Indian Studies, presented to prof. F. W. Thomas*, Bombay, pp. 128–133. |
| KIPARSKY 1976 | Paul Kiparsky: "Oral poetry: some linguistic and typological considerations". Benjamin A. Stolz & Richard S. Shannon III (eds.), *Oral literature and the formula*, Ann Arbor, pp. 73–106. |
| KIRK 1966a | G. S. Kirk: "Studies in some technical aspects of Homeric style". *YCLST* 20, pp. 76–152. |
| KIRK 1966b | —: "Formular Language and Oral Quality". *YCLST* 20, pp. 155–174. |
| KLEIN 1999– | Jared S. Klein: several articles on repetitions in the *RV*, see http://classics.uga.edu/directory/jared-s-klein. |
| LÉVI 1929 | Sylvain Lévi: Review of *The Mahābhārata* for the first time critically edited by Vishnu S. Sukthankar, fasc. I–III, Poona 1927–1929. *Journal Asiatique* 215, pp. 345–348. |
| LÉVI 1934 | —: Review of *The Mahābhārata* for the first time critically edited by Vishnu S. Sukthankar, fasc. VII, Poona 1933. *Journal Asiatique* 225, pp. 281–283. |
| LORD 1948 | Albert Bates Lord: "Homer and Huso III: enjambement in Greek and Southslavic heroic song". *TAPA* 79, pp. 113–124. |
| LORD 1986 | —: "Perspectives on recent work on the oral traditional formula". *OT* 1 (1986), pp. 467–503. |
| LORD 1987 | —: "Characteristics of orality". *OT* 2 (1987), pp. 54–72. |
| LORD 2000 | —: *The singer of tales*. 2nd ed. Cambridge, Mass. (Harvard Studies in Comparative Literature 20). |
| LÜDERS 1929 | Heinrich Lüders: Review of *The Mahābhārata* for the first time critically edited by Vishnu S. Sukthankar, Fasc. 1.2. Poona 1927/28. *Deutsche Literaturzeitung* 24, col. 1137–1146. |
| MEILAND 2005 + 2007 | *Mahābhārata. Book Nine. Śalya.* Translated by Justin Meiland. Vol. 1–2. New York (Clay Sanskrit Library). |
| MILLER 1987 | D. Gary Miller: "Towards a New Model of Formulaic Composition". John Miles Foley (ed.), *Comparative Research on Oral Traditions: A Memorial for Milman Parry,* Columbus, Ohio, pp. 351–393. |
| MEENAKSHI 1983 | K. Meenakshi: *Epic Syntax*. New Delhi. |
| MORTON SMITH 1961 | Ronald Morton Smith: "Ślokas and Vipulās". *IIJ* 5, pp. 19–35. |

MURTHY 2003 — G. S. S. Murthy: "Characterizing classical *anuṣṭup*: a study in Sanskrit prosody". *ABORI* 84, pp. 101–115.

NAGY 1974 — Gregory Nagy: *Comparative studies in Greek and Indian meter.* Cambridge, Mass. (Harvard Studies in Comparative Lit. 33).

NAGY 1976 — —: "Formula and meter". Benjamin A. Stolz & Richard S. Shannon III (eds.), *Oral literature and the formula*, Ann Arbor, pp. 239–260.

NAGLER 1967 — Michael N. Nagler: "Towards a generative view of the oral formula". *TAPA* 98, pp. 269–311.

NAGLER 1975 — —: *Spontaneity and tradition. A study in the oral art of Homer*. Berkeley.

VAN NOOTEN 1968 — Barend A. van Nooten: "The śloka in the Sabhāparvan". *Journal of the Oriental Institute Baroda* 17, pp. 353–362.

VAN NOOTEN 1969 — —: "Redundancy in Mahābhārata Verse Composition". *JAOS* 89, pp. 50–58.

OBERLIES 1998 — Thomas Oberlies: „Die Ratschläge des Sehers Nārada: Ritual an und unter der Oberfläche des Mahābhārata". Hildegard L. C. Tristram (ed.), *New Methods in the research of epic*, Tübingen, pp. 125–141 (ScriptOralia 107).

OBERLIES 2003 — —: *Epic Sanskrit*. Berlin 2003.

*OED* 2015 — *Oxford English Dictionary Online*. Oxford University Press, June 2015.

OLDENBERG 1909 — Hermann Oldenberg: „Zur Geschichte des Śloka". *Nachr. v. d. Königl. Ges. d. Wiss. zu Göttingen*, Philolog.-hist. Kl., pp. 219–246.

OLDENBERG 1922 — —: *Das Mahābhārata. Seine Entstehung, sein Inhalt, seine Form.* Göttingen.

O'NEILL 1942 — "The localization of metrical word-types in the Greek hexameter: Homer, Hesiod, and the Alexandrians". *YCLST* 8, pp. 105–178.

PACKARD 1974 — David W. Packard: "Sound-patterns in Homer". *TAPA* 104 (1974), 239–260.

PARRY 1928 — Milman Parry: *L'Épithète traditionelle dans Homère. Essai sur un problème de style homérique.* Paris.

PARRY 1929 — —: "The distinctive character of enjambement in Homeric verse". *TAPA* 60, pp. 200–220.

PARRY 1930 — —: "Studies in the epic technique of oral verse-making I. Homer and Homeric style", *HSTCLPH* 41, pp. 73–147.

| | |
|---|---|
| Parry 1932 | —: "Studies in the epic technique of oral verse-making II. The Homeric language as the language of an oral poetry". *HSTCLPH* 43, pp. 1–50. |
| Pavese & Boschetti 2003 | Carlo Odo Pavese & Federico Boschetti: *A complete formulaic analysis of the Homeric poems.* Amsterdam. |
| Pawłowski et al. 2010 | A. Pawłowski, M. Krajewski & M. Eder: "Time series modelling in the analysis of Homeric verse". *Eos* 97, pp. 79–100. |
| Pilikian 2006 + 2009 | *Mahābhārata. Book Seven. Drona.* Edited and translated by Vaughan Pilikian. Vol. 1–2. New York (Clay Sanskrit Library). |
| Pisani | Vittore Pisani: "The rise of the Mahābhārata". S. M. Katre & P. M. Gode (eds.), *A Volume of Eastern and Indian Studies,* presented to prof. F. W. Thomas, Bombay,pp. 166–176. |
| Pollock 1977 | Sheldon Ivan Pollock: *Aspects of Versification in Sanskrit Lyric Poetry.* New Haven (American Oriental Series 61). |
| Ramanujan 1991 | A. K. Ramanujan: "Repetition in the *Mahābhārata*". Arvind Sharma (ed.), *Essays on the Mahābhārata*, Leiden, pp. 419–443. |
| R Core Team 2015 | R Core Team: *R. A language and environment for statistical computing.* Vienna. URL http://www.R-project.org/. |
| Russo 1963 | J. A. Russo: "A closer look at Homeric formulas". *TAPA* 94, pp. 235–247. |
| Russo 1966 | —: "The structural formula in Homeric verse". *YCLST* 20, pp. 219–240. |
| Russo 1976 | —: "Is 'oral' or 'aural' composition the cause of Homer's formulaic style?", Benjamin A. Stolz & Richard S. Shannon III (eds.), *Oral literature and the formula*, Ann Arbor, pp. 31–54. |
| Russo 1997 | —: "The formula". Ian Morris & Barry Powell, *A new companion to Homer*, Leiden etc., pp. 238–260 (Mnemosyne, suppl. 163). |
| Salomon 1986 | Richard Salomon: "The Viṣṇu Purāṇa as a specimen of of Vernacular Sanskrit". *Wiener Zeitschrift für die Kunde Süd- und Ostasiens* 30, pp. 39–56. |
| Salomon 1989 | —: "Linguistic variability in post-Vedic Sanskrit". Colette Caillat (ed.), *Dialectes dans les littératures indo-aryennes,* Paris, pp. 275–294 (Publications de l'Institut de Civilisation Indienne 55). |
| Salomon 1995 | —: "On drawing socio-linguistic distinctions in Old Indo-Aryan: the question of Kṣatriya Sanskrit and related problems". George Erdosy (ed.), *The Indo-Aryans of ancient South Asia. Language, Material Culture and Ethnicity,* Berlin, pp. 293-306. |

| | |
|---|---|
| SELLMER 2013a | Sven Sellmer: "Words in metrical milieux — a computational approach to a neglected field". Malhar Kulkarni & Chaitali Dangarikar (eds.), *Recent researches in Sanskrit computational linguistics,* New Delhi, pp. 301–320. |
| SELLMER 2013b | —: "Computer-Aided detection of unusual passages in the *Mahābhārata*". Danuta Stasik & Anna Trynkowska (eds.), *CEE-NIS Current Research Series*, vol. 1, Warszawa, pp. 44–54. |
| SELLMER 2015 | —: *Data bases and other resources for scholarly work on the Mahābhārata.* URL https://webftp.home.amu.edu.pl (login: sven_mbhdata; password: mbhdata). |
| SELLMER forthcoming | —: "Aspects of *manas* in the *Mahābhārata*". I. Andrijanić et al. (eds.), Proceedings of DICSEP 5 (August 2008). |
| SEN 1966 | "Comparative studies in oral epic poetry and the *Vālmīki Rāmāyaṇa:* a report on the *Bālakāṇḍa*", *JAOS* 86, pp. 397–409. |
| SHARMA 1964 | Ram Karan Sharma: *Elements of Poetry in the Mahābhārata*. Berkeley & Los Angeles (University of California Publications in Classical Philology 20). |
| SHARMA 1988 | —: "Mahābhārata repetitions". *Purāṇa* 30, pp. 10–16. |
| SHENDE 1943 | N. J. Shende: "The authorship of the Mahābhārata". *ABORI* 24, pp. 67–82. |
| VON SIMSON 1974 | Georg von Simson: *Altindische epische Schlachtbeschreibung. Untersuchungen zur Kompositionstechnik und Entstehungsgeschichte der Bücher VI bis IX des Mahābhārata.* Unpublished habilitation thesis. Göttingen. |
| VON SIMSON 1982 | —: "Zur Formelsprache des altindischen Epos: formelhafte Erwähnungen der Truppengattungen und formelhafte Vokative im Mahābhārata". *Monumentum Georg Morgenstierne* II (= *Acta Iranica* 22), pp. 208–225. |
| VON SIMSON 1990 | —: "Text layers in the *Mahābhārata*. Some observations in connection with *Mahābhārata* VII. 131". R. N. Dandekar (ed.), *The* Mahābhārata *revisited,* New Delhi, pp. 37–60. |
| VON SIMSON 2011 | —: *Mahābhārata. Die Große Erzählung von den Bhāratas.* In Auszügen aus dem Sanskrit übersetzt, zusammengefasst und kommentiert von G. v. Simson. Berlin. |
| SMITH 1977 | John D. Smith: "*The Singer or the Song?* A Reassessment of Lord's 'Oral Theory'". *Man*, N. S. 12, pp. 141–153. |
| SMITH 1980 | —: "Old Indian. The two Sanskrit Epics". A. T. Hatto (gen. ed.), *Traditions of heroic and epic poetry,* vol. 1, London, pp. 48–78. |

| | |
|---|---|
| SMITH 1987 | —: "Formulaic language in the epics of India". Bo Almquist et al. (ed.), *The heroic process. Form, function and fantasy in folk epic*. Dublin, pp. 591–611. |
| SMITH 1990 | —: "Worlds apart: orality, literacy, and the Rajasthani Folk-Mahābhārata". *OT* 5, pp. 3–19. |
| SMITH 1991 | —: *The epic of Pābūjī. A study, transcription and translation.* Cambridge (Oriental Publications). |
| SMITH 1999 | "Winged words revisited: diction and meaning in Indian epic". *Bulletin of the School of Oriental and African Studies* 62, pp. 267–305. |
| SMITH MC 1992 | Mary Carroll Smith: *The warrior code of India's sacred song.* New York. |
| SÖRENSEN 1904 | Sören Sörensen: *An index to the names in the* Mahābhārata *with short explanations and a concordance to the Bombay and Calcutta editions and P. C. Roy's translation*. London. |
| STASIK 2009 | Danuta Stasik: *The Infinite story. The past and present of the Rāmāyaṇas in Hindi.* New Delhi. |
| STEINER 1996 | Roland Steiner: "Die Lehre der Anuṣṭubh bei den indischen Metrikern". Hahn, Michael (ed.), *Suhṛllekhāḥ. Festgabe für Helmut Eimer*. Swisttal-Odendorf, pp. 227–248. |
| SUKTHANKAR 1933 | Vishnu Sitaram Sukthankar: "Prolegomena". *CE*, vol. 1, pp. I–CX. |
| SUKTHANKAR 1936 | —: "Epic studies 6. The Bhṛgus and the Bhārata: a text-historical study". *ABORI* 18, pp. 1–76. |
| TOKUNAGA 1995 | Muneo Tokunaga: "Statistic survey of the śloka in the Mahābhārata". *Memoirs of the Faculty of Letters, Kyoto University* 34, pp. 1–37. |
| TOKUNAGA 2009 | —: "Vedic Exegisis and epic Poetry: A Note on *atrāpy udāharanti"*. Koskikallio, Petteri (ed.), *Parallels and Comparisons.* Proceedings of the Fourth Dubrovnik International Conference on the Sanskrit Epics and Purāṇas, Zagreb, pp. 21–30. |
| VASIĽKOV 1971 | Jaroslav V. Vasiľkov: "Mahabharata i ustnaja ėpičeskaja poėzija", *Narody Azii I Afriki* 4, pp. 95–106. |
| VASIĽKOV 1973 | —: "Ėlementy ustno-poėtičeskoj tehniki v 'Mahabharate'", *Literatury Indii. Stat'i i soobščenija,* Moscow 1973, pp. 3–23. |
| VASIĽKOV 1995 | Yaroslav Vassilkov: "The Mahābhārata's typological definition reconsidered". *IIJ* 38, pp. 249–256. |

| | |
|---|---|
| Vasiľkov & Neveleva 1988 | — & S. L. Neveleva: "Ranna istorija ėpičeskogo sravnenija (na materiale VIII knigi 'Mahabharaty')". I. V. Stedleva (ed.), *Problemy istoričeskoj poėtiki Vostoka,* Moscow, pp. 152–175. |
| Viethsen 2008 | Andreas Viethsen: *Krishna Vāsudeva und die Schlacht auf dem Kurukṣetra. Eine textgeschichtliche Untersuchung zu den Büchern 6–11 des altindischen Epos Mahābhārata*. Hamburg (Schriften zur Kulturgeschichte 7). |
| Visser 1987 | Edzard Visser: *Homerische Versifikationstechnik. Versuch einer Rekonstruktion*. Frankfurt am Main. |
| Visser 1997 | —: *Homers Katalog der Schiffe.* Stuttgart. |
| West 1981 | Martin Litchfield West: "Is the *Work and Days* an oral poem?". C. Brillante et al. (eds.), *I poemi epici rapsodici non omerici e la tradizione orale*, Padova 1981, pp. 53–67; cited after the reprint, Idem, *Hellenica: selected papers on Greek literature and thought.* Vol. I: Epic, Oxford & New York 2011, pp. 146–158. |
| West 2011 | —: "The transition from oral to written". Idem, *Hellenica: selected papers on Greek literature and thought.* Vol. I: Epic, Oxford & New York, pp. 159–175. |
| Windelberg & Miller 1980 | Marjorie Windelberg & D. Gary Miller: "How (not) to define the epic formula". *Olifant* 8, pp. 29–50. |
| Witte 1913 | K. Witte: art. "Homeros B. Sprache". *Paulys Realencyclopädie der classischen Altertumswissenschaft*, vol. 8, Stuttgart, col. 2213–2247. |
| Wray & Perkins 2000 | Alison Wray & Michael R. Perkins: "The Functions of Formulaic Language: an Integrated Model". *Language & Communication* 20, pp. 1–28. |
| Yardi 1986 | M. R. Yardi: *The Mahābhārata. Its genesis and growth. A statistical study*. Poona. |
| Yardi 1989 | —, "My studies on the *Mahābhārata*: a clarification". *ABORI* 70, pp. 235–241. |
| Yardi 1994 | —: *The Rāmāyaṇa. Its genesis and growth. A statistical study*. Poona. |

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