Introduction
Proposals for metrical typology

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The introduction explains how and why the book is based on a fourfold distinction between isochronous metrics, prosodic metrics, parametrical phenomena, and macrostructural metrics. It surveys some recent problems of metrical theory, such as the nature of isochronous meters, musical textsetting, the typology of prosodic meters, the properties of caesura and line-endings, and the para-metrical phenomena. It also investigates the phonological nature of metrical rhyme and the hierarchical structure of stanzas. Finally, each article in the book is presented in terms of the above classification.

1. Introduction

Metrics is often defined as a discipline that concerns itself with the study of meters. Here, we will use the term in a broader sense that more or less coincides with the traditional notion of “versification”. Understood this way, metrics is an eminently complex object that displays variation over time (cf. language change) and in space (cf. language variation), that concerns forms of a great variety and with different statuses (meters, rhymes, stanzas, prescribed forms, syllabification rules, nursery rhymes, slogans, musical textsetting, ablaut reduplication etc.) and that as a cultural manifestation is performed in a variety of ways that can have direct consequences for how it is structured (oral vs. written forms, sung vs. spoken or read forms, folk vs. learned forms).

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To propose a unified typology of metrics is thus perhaps not only to attempt the impossible but even more, to indulge in dreams. Nonetheless this profusion of forms is thought to correspond, at the level of perception, to a limited number of cognitive mechanisms that allow us to perceive and to represent regularly iterating forms.\footnote{See Youmans (1989: 9), Attridge (1989: 185).} It seems to me that it is possible to propose a relatively coherent overall vision by distinguishing four main families of metrical forms, each clearly independent of the others and amenable to separate typologies. This is the point that will be proposed and briefly argued for below. It is clear that for such a vast topic, it is more a question of getting the debate off the ground and opening up new areas for investigation than of proposing a unified and rigorously falsifiable theory. As far as references to the literature are concerned, it is impossible for me to do justice to all of the work that has been done in this vast area, and my knowledge of the subject is necessarily partial, in both senses of the word. Informed readers will be able to deduce from my references what areas of the literature I have read and will doubtless recognize gaps in the treatment. I hope nonetheless that certain less-known titles will be of use to such readers.

2. Metrical typologies

2.1 The division of this volume into four parts might appear surprising to some. In effect, studies of metrics are quite often represented by two large categories of specialists: those who deal with folkloric forms and those who deal with learned forms. The former are trained to work in the field; the latter generally practise an “armchair” linguistics. From a typological point of view, this two-way split is justified by the argument that folkloric forms use a metrical structure commonly based on temporal equivalences (strong beats etc.) that generally do not exist in literary metrical structures. In the latter, equivalences are based most often on the linguistic material itself (syllable weight etc.) whereas in the folk forms dealt with, the linguistic material comes into play where it interfaces with the temporal equivalences (hence the interest of the articles on musical textsetting).

A second important difference between these two types of metrical structures is found in the far from negligible role of “artefacts” in learned forms, which is of much lesser importance in folk forms: aesthetic values, as much as the author’s intent, can have an influence on literary metrical forms (particularly on macrostructures) and can remove them to a greater or lesser degree from their perceptual underpinnings; this is not the case of children’s folklore or street slogans (a slogan itself can be original, but not its metrical form). This is not a typological problem as such, but it is nonetheless a
difference of great consequence. At this level, it is significant that learned poetry is generally attributable to a well-known author, whereas folk poetry is most often anonymous. The “learned” authors claim credit for the creation of their texts whereas folk forms have an anonymity due to their origins as collective productions (their numerous variants being a consequence of this origin).

2.2 But on closer examination, the learned/folk distinction is not without its difficulties. First, in certain cultures, this dichotomy is not recognized or in certain cases is unclear (Banti & Giannattasio 2004: 294). When it is clear, we commonly observe interactions between folk and learned forms and learned forms always have their ultimate origin in one or more folk form(s).

Second, this dichotomy is weakened by the emergence of commercial forms that can be called popular: contemporary song, rock or rap are not learned forms, but their texts and music stand apart from folk forms by the fact that they are subject to copyright and are ostensibly signed by an author (even if the interpreter is often better known by the general public than the composer). Certain popular forms show a tendency to become learned forms (cf. jazz).

Finally, if this distinction can often be justified by sociological properties (the mode by which the knowledge is transmitted, etc.), it is more difficult to discover the eventual metrical contrasts between the two types. In effect, metrical forms based on temporal equivalences are not found exclusively in folk forms, just as metrical forms based directly in linguistic material are not found exclusively in learned traditions. Next to nursery rhymes and song, which base their metrical structure on temporal regularities external to language (instrumental music is a witness to this), we encounter genres in folklore whose metrical structure is based on iterating elements of linguistic form: these are for the most part epics and short spoken verse forms, such as certain magic formulas and proverbs. Beside the linguistically based metrical structures of the great poets such as Goethe, Li-Bó, Hugo or Shakespeare, learned traditions often integrate a vocal music that is characterized in particular by a musical metrical structure. Certain ancient poetic traditions that today seem metrically bizarre or aberrant due to the extreme variability of their prosodic material are perhaps quite simply bodies of poetry that were characterized by temporal metrical structures that have been lost for lack of a musical notation.4

What is more, recent research appears to show that certain forms have behind them metrical systems that we could describe, as it were, as “mixed”, that are built on a twofold metrical organization where one part is based on the linguistic material,

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2 A number of examples of the importance of the role played by cultural values in the form of learned metrical structures can be found in Tarlinskaja (1989: 126-132, 2006: 64), Aroui (forthcoming, a) and Friedberg (this volume). These issues are discussed in Aroui (forthcoming, a).


4 Andy Arleo points out to me that the problems posed by this type of text are dealt with in John Miles Foley’s How to Read an Oral Poem, Chicago, University of Illinois Press, 2002.
the other on the musical material, the first being amenable to study independently of the other. Benoît de Cornulier (1989) has found one example of this kind of double structure in the text of Rouget de Lisle’s “Marseillaise”. The results reported by Banti & Giannattasio (1996) and Dell & Elmedlaoui (2008) tend to lead to the conclusion that, in certain folk traditions at the very least, this double organization is far from rare (see also Kiparsky 2006: 8-16, 25). In fact, even in the French tradition studied by Cornulier, the entirety of the metrical structure of the œuvre of a songwriter such as Béranger can be analysed at the same time on the basis of both linguistic and melodic-temporal criteria. This double structure can also sometimes be found in learned poetry, for example among the troubadours or in the poetry of Machaut (Cornulier 2003). Double metrical structure often has a “natural” origin since the pairing of a text with a temporally regular metrical structure can result in regularities in the phonological material (for example, a regular number of accents or of syllables).

Be they learned or folkloric, temporal or linguistic in nature, metrical systems are complex objects. If learned metrical structures must often be approached in terms of complexity, this is notably because they carry with them, at one and the same time, both linguistic and cognitive features and properties deriving from historical references or the intent of the authors. The complexity of folk metrical structures can be situated, in particular, in the role played by motor movements (Rubin 1995: 112-114). Whether a metrical structure is learned or folkloric, meaning and syntax can also interfere with it and make it more complex to describe (Rubin 1995: 108-119). When a piece is set to music, the relationships brought about by our musical and linguistic competence bring about another form of complexity (cf. Jackendoff 1989: 18). Finally, mixed metrical forms are complex by virtue of the kinds of relations that can exist between their temporal and linguistic regularities. This complexity, whatever its nature, necessitates the adoption of specific methodologies and strong hypotheses on human cognition (for example modular or systemic approaches).

2.3 Metrical systems based on temporal regularities are not always characterized by a melody. Sung verse must thus be distinguished from chanted verse. If these two types of verse commonly presuppose a regular beat and temporal equivalences, sung verse can be defined as a chanted verse to which a melody has been added. However, the boundary between chanted forms and sung forms is not always easy to define; a good example of an intermediate form seems to be operatic recitative, where the melodic element, without ceasing to exist, is minimized. Similarly, many nursery rhymes contain the rudiments of melodic structure. From a metrical point of view, sung verse and chanted verse form a homogeneous category opposed to spoken verse, which [p. 5] because it does not arrange its constituents on the basis of temporal equivalences, gives rise to a specific metrical structure.\(^5\)

\(^5\) However, spoken forms and chanted forms are not necessarily subject to a binary opposition but seem to fall along a gradual scale of which only the two poles can be clearly distinguished from each other (Banti
2.4 It seems then that the categories that are normally used are not homogeneous. We might decide to describe the metrical structure of such forms as nursery rhymes, songs or street slogans as isochronous. In this kind of metrical structure, meter includes temporal constraints and, optionally, melodic constraints. An appropriate term remains to be found for designating “spoken” forms, whose metrical structure is based not on units of time but directly on the way the linguistic material is organized. In these forms, at a basic level, the meter includes equivalences and/or contrasts based on prosodic aspects of language (accent, mora, syllable, tones). I propose simply to speak of “prosodic metrics”. The term “prosody” is doubly justified by its origin and its modern sense. We know that originally “prosody” was used to designate the study of Greek and Latin quantitative verse. Today, “prosody” is used to designate a branch of phonology that studies a certain number of suprasegmental phenomena such as accent, weight, tone etc. The metrics that we describe here as “prosodic” simultaneously covers the study of the quantitative aspects of classic metrics and the study of various metrical phenomena that find their origin in the “prosodic” structure (in the modern sense) of language.

2.5 Studies of metrical typology, until now, have essentially concerned themselves with the question of meter. Meter is thus considered the central point of the investigation, and other metrical objects tend to be dealt with simply to the extent that they are related to meter. This approach can be justified in many ways. In particular, meter is without doubt, with rhyme, the metrical object most indissolubly linked to properties of language (phonological and morphophonological properties in particular). This explains why the stanza is not a metrical universal, unlike meter, and why strophic forms span languages and cultures much more easily than meters. However, too hurriedly classifying the stanza among “para-metrical phenomena” (Fabb 1997: 28) brings with it the risk of overlooking one of the aspects of its form that best lends itself to a typological treatment: its hierarchical makeup. Isochronous and prosodic meters can both be accompanied by regularities at the macrostructural level. Even if it is based in material that differs in part depending on whether the meter is isochronous or prosodic at the microstructural level, the hierarchy upon which stanzas are structured poses very basic problems of tree structure and combinatorics for which a typological approach would be appropriate (see §6.2.).

What brings together (isochronous, prosodic or mixed) metrical microstructures and strophic metrical macrostructures is the fact that they are... metrical! All of these are systems of iterative regularities. These systems are characterized by a tendency to

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6 Benoît de Cornulier, in this volume, speaks of chronometrics.
7 The term has already been used, in a slightly different sense, by Golston (1998). See below, §4.
binarism that is realized in various manners that have already been observed or partially described, though how each of these relates to the others is still poorly understood.

2.6 There is also a whole field of study that is as much of interest to specialists in spoken forms as to specialists in temporal forms: this is the problem of sandhi and more generally, of syllabification. It is well known that at this level, verse often displays striking properties. Fabb (2002: 9) seems to include synaloepha among the rules that make up meter even though it has to do with linguistic form more than metrical form. In effect, syllabification phenomena in the context of verse are not, strictu sensu, metrical: they do not give rise to iterative regularities as a meter or a stanza do. It is thus appropriate, in a typological framework, to set them apart from other phenomena. They are nonetheless linguistic phenomena specific to verse and it is thus legitimate for metrists to concern themselves with their study and to attempt to determine their typology. Cornulier (1995: 201-232) brings together the range of syllabification phenomena (liaison, elision, diaeresis, synaeresis, apocope etc.) under the rubric of “poetic language” (fr. langue des vers), and dissociates these from the study of meter. The weight of convention in these matters would seem to back him up. Alongside these phenomena we might also place problems having to do with the written form of words: in French poetry, what Benoît de Cornulier (1995) terms “graphic fiction” (fiction graphique) has important consequences for rhyme, but also for the sequencing of words within a line of verse. Certain morphophonological aspects such as enclisis or proclisis can also have consequences for the interface between metrical and linguistic form. All such phenomena can be placed under the rubric of “para-metrical phenomena”. I borrow this label from Nigel Fabb (1997), though I give it a different meaning, for reasons explained below (§§4.2., 5., 6.1.7.).

2.7 Consequently, I propose to divide metrical typology into four parts: (1) Isochronous metrics, (2) Prosodic metrics, (3) Para-metrical phenomena, (4) Macrostructural metrics. These seem to be the most appropriate major categories to distinguish from a “typological” standpoint.

2.8 A place in this typology remains to be found for “canonical parallelism”, characteristic of numerous oral traditions, and often accompanied by a formulaic style. This most often involves syntactic and semantic parallelisms between consecutive lines. But this kind of phenomenon, which is not strictly speaking metrical in nature (in a

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given text, certain key lines may escape parallelism, and the number of parallel lines can be variable), can be considered as simply a case of what Jakobson (1960) and his successors (Ruwet 1975) have called “equivalence”, and as such does not belong with the questions dealt with by metrical typology. Canonical parallelism exists, moreover, for certain non-metrical literary traditions (Fabb 2002: 175) and in certain languages it is present without there being any attested use of prosodic metrical structure (Banti & Giannattasio 2004: 306).

3. Isochronous metrics

3.1. Properties of isochronous meters

Isochronous verbal folklore has long been the subject of recensions, particularly since the 19th century, the era of “primitivism” and the search for origins. But the texts collected in this context were often transcribed without attention to their rhythmic or melodic underpinnings, to the extent that their eventual metrical content escaped the attention of philologists. Isochrony is basic to this kind of metrical structure, and can be dealt with efficaciously by a musicologist. Thus we quite naturally find the first understanding of the metrics of folk oral traditions coming from ethnomusicologists (Brăiloiu 1984 [,1931-1959]). Later on, linguists took a broad interest in this kind of metrical structure, and undertook a search for its universal properties. Children’s folklore, in particular, received special attention, because it without doubt makes available to the analyst metrical and linguistic regularities that are truly devoid of artefacts. At a very early age, children show a metrical competence that allows them not only to learn and recite nursery rhymes, but also to improvise formulas and slogans. I recently heard a small five year old boy from St. Albans (near London), Marley, improvise a slogan, which can be represented by a simplified metrical grid (Figure 1).

At the lowest layer of the grid, each “x” represents a metrical position, each temporal interval between two positions being equivalent to the others. The second layer of the metrical grid represents the strong positions that here are equally separated by regular temporal intervals (which are exactly twice as long as the temporal intervals separating the metrical positions). We notice in this example that a strong position is always
associated with a syllable, and that this syllable is always a stressed syllable. This slogan was repeated several times, with a great regularity. At the end of the sequence, we could hypothesize two extra metrical positions, not associated with linguistic segments; these positions would make it possible to explain the regularity of the temporal intervals that separate the different consecutive realizations of the slogan. These hypothetical positions are nevertheless subject to conjecture (see Cornulier, this volume).

It would be interesting to try to discover at what age children begin to be able to produce such metrical objects, but it is very difficult to test this kind of competence with anything other than spontaneous productions.

As early as Brăiloiu (1984: 206-238 [1956]) we find a description of the frequency around the world of nursery rhymes whose lines can be formally characterized by 8 metrical positions that can be linguistically realized by a series of eight syllables and musically by a set of eight eighth notes. Some years later, Burling (1966) independently made similar observations (four beats per line) and expanded this observation to the stanza, observing that it was generally composed of four lines. More recently, Andy Arleo (2006 [2001]) proposed two hypotheses, one stronger than the other, concerning universals of children’s rhymes:

**The Hypothesis of Metrical Symmetry (revised version)**

Children’s rhymes tend toward symmetry, defined as follows:

1a. **Beats (version a).** The number of beats in a given metrical unit (i.e., hemistich, line, stanza) tends to be even.

1b. **Beats (version b).** The number of beats in a given metrical unit tends to be a power of two ($2^n$, where $n > 0$)

2a. **Lines (version a).** The number of lines in stanzas tends to be even.

2b. **Lines (version b).** The number of lines in stanzas tends to be a power of two.

(Arleo 2006 [2001]: 44)

These universals are intended only to be taken as “statistical” in nature, which means that the hypothesis can be falsified only if counterexamples appear in significant numbers. Moreover, the results of tests, whether positive or negative, should be interpreted taking into account particular genres of childlore, which may strongly predetermine metrical structure (such being the case of hand-clapping games). In his article, Arleo already submits his hypothesis to the data of counting-out rhymes and jump-rope rhymes in French and English. The results are conclusive for English but less clear for French.

\[p. 9\]

I am assuming that Marley speaks a variant of British English in which *ice cream* is accented on the first syllable. This pronunciation is widespread among younger generations (William J. Barry, p.c.).
Hayes & MacEachern (1996a and 1998), for their part, made a number of predictions concerning constituency in quatrains in the English folk verse tradition. They attempt to predict what kinds of truncations (linguistically and musically unrealized metrical positions) are possible in line final position, using Optimality Theory for their analysis. Their corpus only incidentally deals with children’s verse. Recently, Paul Kiparsky (2006) replied with a counter-analysis using a different version of Optimality Theory, “partial constraint ranking”. Kiparsky excludes nursery rhymes from his corpus due to their over-large metrical diversity. He advances various arguments that tend to show the independence of metrical structure from musical structure in the English ballad and proposes a model of the quatrain in the English ballad, which while using fewer constraints than Hayes & MacEachern, succeeds in predicting the frequencies of forms while avoiding overgeneration.

3.2 Musical textsetting

The problem of how linguistic units are associated with isochronous meter is a profoundly linguistic one, and requires that the analyst be a linguist with a certain degree of musical knowledge. It is perhaps this double requirement that explains why studies dealing with this kind of problem have emerged only recently. Burling (1966: 1425) did little more than point out the problem. Isochronous metrical forms impose their own rhythms on speech. A long term typological objective would be to discover a single general system that, by fixing certain parameters, would determine the range of possible relations between linguistic and non-linguistic categories, for example between linguistic stress and musical strong beats. It would be necessary to specify what are the constraints that apply to a given language or to a given form. This system would, among other things, make it possible to specify similarities and differences between speech “rhythm” and musical rhythm, thus helping to better situate the areas covered by metrical structure and phonology in relation to other areas of the human mental apparatus. Such an objective would simultaneously necessitate the development of falsifiable theories and hypotheses and the creation or exploitation of quantified corpora.

[p 10]

4. Prosodic metrics

There exist today numerous theories and hypotheses that attempt to make predictions about the nature of prosodic metrical structures: in particular we can mention Hayes’ (1989) Hypothesis of Phonological Metrics which presupposes that metrical structures

12 See Dell (2003b), Rodríguez-Vázquez (2007) and in this volume, Hayes and Dell & Halle. See also earlier publications by Dell (1989) and Jackendoff (1989: 36-37).
are based on the prosodic hierarchy and not on syntax. This hypothesis has been further developed in Golston and Riad’s Theory of Prosodic Metrics,\textsuperscript{13} which presupposes that metrical structure springs exhaustively from prosodic structures, to the extent that it is no longer necessary to presuppose the existence of a metrical template. Hanson & Kiparsky (1996) proposed a “Parametric Theory of Poetic Meter”. According to this theory, conceivable meters should be based on linguistic categories originating in Universal Grammar; on the basis of the lexical phonological structure of a given language, a functional principle would then be applied that would, for this language, permit an optimal meter to be selected. To end, we must mention Bracketed Grid Theory, represented principally by Nigel Fabb and Morris Halle,\textsuperscript{14} which proposes cognitive hypotheses on the ways that metrical units are counted and grouped together.

Rather than proffer a critical overview of these theories, which would take us much too far, I will in what follows make some proposals with the goal of accounting for the way in which different prosodic metrical structures relate to each other and with the prosodic aspects of language.

4.1 Classification

4.1.1 Taking Fabb (1997: 56-87) as our inspiration, we can classify the different types of prosodic metrical structures as in figure (2).

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Prosodic metrical systems}
\end{figure}

Languages mentioned between parentheses are not necessarily exclusively represented by the metrical system to which they are associated, but they are typically represented by this system.

In this model, counting meters are characterized by their syllable or mora count. Their metrical template is composed of undifferentiated metrical positions. What is relevant is the number of such positions. Patterning meters are based on contrasts, between stressed and unstressed syllables, for example, and on the way these contrasts are organized. Their metrical template is made up of two types of positions arranged in a predefined pattern, each of which must match up with a distinct syllable type. (For example, the need for a light-heavy sequence in an iambic meter). Certain metrical positions can nonetheless be free, i.e. associated indiscriminately with any syllabic category.

This thus takes on the shape of a clear and coherent typology.

4.1.2 But complications appear as soon as we turn our attention to the subcategories of the two major types represented. In effect, this classification raises the question of where the major types and sub-types of meters belong in the hierarchy. We could turn things upside down and consider counting and patterning meters as subtypes. I propose (Figure 3) a new representation of types and subtypes that gives pre-eminence to prosodic elements.

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The basis for this model is that distinctions between meters arise from differences in phonological type. The linguistic substrate on which meter is built is thus of primary importance. In this I take a position similar to Golston (1998) and Golston & Riad (2000), without going as far as they do with respect to the phonological underpinnings of metrical units (in particular, I do not reject the existence of metrical templates). It deserves to be recognized, in [p. 12] passing, that certain languages have given rise to different metrical systems throughout their history. This has most often been due to the importing of external metrical models; some such imports have failed whereas others have succeeded. It
4.1.3 This system leads, then, to grouping mora counting and quantitative patterning meters together in the same family: in all cases, the meters are based on syllabic weight (we should then talk of “weight-based” meters), very often with variations in the number of actual syllables. The relative possibility of anceps positions in the metrical template, which in Fabb’s model is important for distinguishing moraic counting meters from quantitative patterning meters, is seen here as simply reflecting the existence of two variants.

According to various authors, it is possible to distinguish among moraic meters a category of meters that combine both the patterning and syllable count types. The classical Sanskrit śloka would be an example of this kind of meter. We will take it to probably be a mixed isochronous/quantitative meter, where the regularity of syllable count is a result of the need for lines to correspond to series of notes. The Sapphic and Alcaic stanzas of ancient Greek and Latin are probable examples of such mixed meters. As for the śloka, we could also hypothesize that this is a meter with a particularly learned form, governed by an aesthetically motivated constraint on the number of syllables.

4.1.4 I have chosen to speak of syllabo-tonic counting meters rather than patterning stressed meters for the sake of theoretical prudence. Syllabo-tonic meters, as in English, require all their positions to be counted out, whether they are weak or strong. It is quite easy, on the basis of this twofold counting-out, to group weak positions around strong positions, and to obtain “feet” or in other words, in the final analysis, something quite similar to a patterning meter. Depending on the theoretical framework, a meter can be quite easily treated as a patterning stressed meter or more simply as a syllabo-tonic counting meter.

Choosing to speak simply of syllabo-tonic counting meters makes it possible to see the similarities between syllabo-tonic counting meters and other counting meters. Once this is done, the historical relation of the English iambic pentameter and Italian
endecasillabo with the purely syllabic forms of the “European decasyllable”\textsuperscript{19} finds a theoretical explanation; moreover, this analysis is doubtless more compatible with the bracketed grid theory that Fabb today espouses than would be an analysis identifying these forms with patterning meters.

Variations in the number of syllables per line in a syllabo-tonic counting meter can only stem from a limited number of principles: para-metrical syllabification rules (synaloepha, elision etc.) and metrical rules concerning structural edges (headless lines, extrametricality); and in certain cases, as for the Russian dolnik, the constraint may also stem from the strictly limited number of unstressed syllables associated with a weak position (or, if one prefers, on the number of weak positions appearing between two strong positions).\textsuperscript{20}

In syllabo-tonic counting systems, the metrical template can refer to the accentual structure of verse according to correspondence rules that vary by language. Thus in Italian, it is the accentual structure of the phrase that is relevant whereas in English, the focus is on polysyllabic words (see Fabb 1997: 72).\textsuperscript{21}

With respect to stress counting meters, I also distinguish those for which the count refers to (strong) stressed positions only, as for example in old Germanic languages. Fabb (1997) did not classify these meters under a distinct category, and not even among the counting-based groups. According to Árnason (2006), who bases his analysis on the theoretical framework of Hanson & Kiparsky (1996), the relevant domain for these meters would be the phonological word. These strictly accentual meters are often subject to alliteration, but this is not a necessity. They often have their origin in isochronous metrical systems.

4.1.5 This model also leads to the position that strictly “syllabic” meters can only be counting meters: since different syllable types are not distinguished in this kind of meter, it is difficult to see how they could be grouped into a patterned set (which minimally presupposes a contrast between two differentiated units).

[p. 14] I have chosen to classify the meters of Spanish among syllabic meters, on the basis of arguments proposed by Rodríguez-Vázquez (2006: 258-260) and Carlos Piera (2001 and this volume, p. 299-301). Piera, to tell the truth, tends to treat Romance meters (other than those of French) as “intonational” meters. It seems that the opposition between syllabic counting meters and syllabo-tonic counting meters is not polar, but instead forms a continuum going from the typically syllabic to the typically syllabo-tonic, with a certain number of intermediate stages. In this way, English, at the times of Hoccleve (b. ?1369, d. 1408) and Surrey (b. ?1517, d. 1547), produced French-inspired meters that tend to be syllabic, and the structure of these meters had an

\textsuperscript{19} See Duffell (2001 and 2003) and see Hanson (this volume).

\textsuperscript{20} See Friedberg (this volume).

\textsuperscript{21} On these questions, see also earlier work by Giamatti (1972: 148-149) and see Hanson (this volume).
influence on the structure of the iambic pentameter of subsequent eras. The case of Spanish was more or less similar (see Rodríguez-Vázquez 2006: 259), except that the meters of Spanish drifted even more towards the syllabic meter end of the continuum, so much so that I classify them among the latter (see also Gasparov 1987: 330-332). If Italian is difficult to classify (and the choice made here is subject to dispute), this is because it is “half-way between pure syllabic and syllabo-tonic” (Gasparov 1996: 301), at least in statistical terms (Gasparov 1987: 330-332).

It can be asked if these “syllabic” counting systems are based on the number of syllables or of syllable nuclei. In effect, for French, certain observations appear to show that it is the number of syllabic nuclei (always represented by vowels) rather than the number of syllables that forms the basis for meter (see Cornulier 1995: 23-24, 272-273). Thus if the division of the classic alexandrine into two half-lines is aligned with the number of syllables in each, it is possible to say that Racine’s alexandrine “Oui, je viens dans son temple adorer l’Eternel” is made up of two half-lines “Oui, je viens dans son tem-” and “-pl(e) adorer l’Eternel”, a surprising outcome since the cæsura then occurs inside the word “temple”. This disadvantage can be avoided if we see the alexandrine as a meter based on vowel count (in fact, syllabic nuclei) more than on syllable count. The cæsura remains to be defined and the choice can be made to locate it at the strongest linguistic boundary that can be found between the sixth and seventh vowels associated with metrical positions (in this case this position would be a word boundary).

4.1.6 The work of Jakobson (1979: 215-223) and Chen (1979: 380, 382) shows nicely that the regular verse of classical Chinese is a patterning (foot-based) meter. The regular syllable count of this meter is merely a consequence of the rules that allow well-formedness of metrical feet (contrary to the opinion of Frankel 1972: 36, this is not a [p. 15] counting meter). A tone counting meter is theoretically conceivable. If, in Chinese, counting tones were the same as counting syllables, which would bring us back to a syllabic system, such is not the case of certain African languages, where it is commonplace for the number of tones in a phonological sequence not to be equal to the number of vowels/syllables/moras in the same sequence (see Rialland 2003: 66-67). I know of no tone counting meters, but nothing precludes envisioning the possibility that they exist. This is why the above schema envisions their possible existence.

4.1.7 We see that depending on whether one hierarchy or another is adopted, a different conception of metrical systems is revealed. The models are thus productive (they give

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22 See Duffell (2003: 66, 71-73); see also Tarlinskaja (2006:56) and Hanson (this volume).


24 Quite likely this is what happens for many modern readers of classical Chinese poetry: since the tones of the classical language are not those of Mandarin, the tonal structure of the meter is opaque to them and the isosyllabism of the lines becomes all that much more salient.
rise to problems and lead to the formulation of hypotheses), and this can only be seen as a good thing. But these hierarchical systems, whether the one inspired by Fabb or the one that I have just proposed as an alternative, have the disadvantage of perhaps prematurely putting a definitive face on things, and the prudent metrist will possibly prefer to envision things as a system of interactions between two modules that can be referred to as a prosodic and a metrical module (see Figure 4).

This model has the same consequences as the preceding model as far as the grouping of languages is concerned, but it presupposes no hierarchy between the metrical and prosodic levels. It also leads to the possibility of re-envisioning the hypothesis of patterning stressed meters.

4.2 Cæsura, line ending, bridge and alliteration

In English iambic pentameter, constraints seem to weigh less upon the strong positions in the meter than they do on the weak positions: the latter may not match up with a stressed syllable in a polysyllabic word (see Hanson & Kiparsky 1996). This [p. 16] result leads one to think that two essential elements intervene in the realization of this meter: the value of the stress, which is oppositional and relative, and the word boundaries (the value of the stress being essentially word-internal in the case of English). This is an argument for the idea that word-boundary rules, which Fabb classes not without hesitation (1997: 49) among para-metrical phenomena, are an integral part of the structure of the meter. These rules are mainly concerned with the problem of cæsura, line endings, and the bridge. When they are dealt with separately, it is necessary to recognize that these rules are closely linked to those that determine meter (Fabb 1997: 27, 111), which means that dealing with them independently is somewhat problematic. It could be imagined that at a certain level, cæsura and line-endings form boundaries between two metrical constituents (represented at the surface by a word boundary) whereas, for a given metrical level, a bridge is the expression of the need for two units to belong to a single metrical constituent (represented at the surface by the fact that

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these two units belong to a single word). Things are complicated by the fact that, in
certain traditions (as in Greek), caesura can take place, sometimes obligatorily, inside a
metrical constituent, such as a foot. In this case, the caesura does not coincide with the
boundary of the metrical constituent in question. There also exist, as we will see (§5),
traditions where the end of the line does not necessarily correspond to a word boundary.
It is thus necessary to conceive of different sets of metrical constituents that do not
overlap with each other. Their interface is probably to be found in the metrical
positions themselves. This can be represented via figure (5).

(5) construction of lines and half-lines (caesura, bridges, line-endings)

metrical positions

foot construction

In this model, half-lines and feet are formed, so to say, independently of each other, or
at the very least on the basis of an interface represented by metrical positions. This
double system of metrical construction seems necessary only in “patterning” meters,
counting meters having no need for a “foot” constituent, at least theoretically.

Similarly, we can ask if alliteration, still among the “para-metrical phenomena”
of Fabb (1997: 27), is not a fully fledged part of prosodic metrics. It is known that
[p. 17] alliteration crucially affects word onsets (and thus word boundaries) and it is
found principally in accentual meters (as in Finnish or old Germanic languages), but
also in certain quantitative meters (as in Somali) or syllabic meters (as in old Irish).
The Icelandic fornyrðislag is made up of a long line with four accents whose unity is to
be found with alliteration: the first accented syllable of the second half-line must
alliterate with the stressed syllables (or at least one of the stressed syllables) of the first
half-line. It seems clear that an attempt at characterising this meter that glossed over
alliteration would be fatally incomplete. However, since alliteration often relates two
consecutive lines (Fabb 1997: 121-123), one might ask if its relevance is not that of a
metrical level that would constitute something like a module in the sense of Cornulier
(1995), i.e. the metrical unit that immediately dominates the level of the line (see below

28 See Banti & Giannattasio (1996).
meter of the Hildebrandslied are similar (Boyer 1990: 12-13, Gasparov 1996: 35-40).
§6.2.2.). One might imagine that Cornulier’s “module” borrows its mode of construction sometimes from the line (by virtue of alliteration) and sometimes from the stanza (by virtue of rhyme). When it is constructed using rhyme, it can be defined as a constituent intermediate between the stanza and the line. When it is constructed via alliteration, it serves simply to construct a constituent above the line, which could be called a “long line” or “couplet” (cf. Árnason 2006: 152-154).

5 Para-metrical phenomena

Nigel Fabb (1997: 111-136) devotes a chapter to what he terms “para-metrical rules”. Among these, he notably classifies rules that concern caesura, the bridge and line endings, which I have classified above under the study of meters (§4.2.).

Nonetheless, various linguistic phenomena touching on the written or morphophonological form of words or having to do with syllabification can, I think, be treated as “para-metrical” when they have properties specific to verse. In effect, as we have seen (§2.6.), these are not periodic phenomena (like meter or the stanza) but properties characterizing linguistic forms associated with metrical form. In this domain, existing research is rarely typological and cross-linguistic, even if the linguist has at his or her disposal a whole battery of descriptive concepts that ought to permit a comparative approach (elision, liaison, apocope, diaeresis, synaeresis, synaloepha, dialeopha, hiatus, coalescence, aphaeresis, sandhi, enclisis, proclisis, the grapheme [p. 18] etc.). These tools ought to make it possible to arrive at an understanding of the mechanisms in play and help to discriminate the causes (which can be linguistic, musical, metrical or even cultural in type). In this volume, Oreste Floquet provides an overview of the study of these kinds of phenomena.

Syllabification constraints can weigh heavily on linguistic forms associated with a meter: in order to construct a well-formed alexandrine, it is necessary to know that in classical French versification diaeresis is obligatory in the word “violon”. In quantitative metrical structures, the form of the meter can reveal some quite surprising resyllabifications (see below §6.1.2., note 38). Problems of syllabification also concern line endings and even perhaps stanza endings. If, in the majority of known poetic traditions, syllabification rules concerning line endings limit themselves to specifying that resyllabification is not permitted (that is, for languages that do permit resyllabification), there are certain rare traditions in which the end of a line does not necessarily coincide with the end of a word (see Dell & Elmedlaoui 2007); in this case, it becomes crucial to understand syllabification mechanisms at line endings.

Other issues, that have barely been skimmed over to date, and which I can not examine in any great depth here, are likely part of para-metrical phenomena. These include, in particular, the study of the phonological form of vocables of the type “hey nonny nonny no” (English) or “tra la la la lère” (French). A particular case of these
forms is made up of ablaut reduplications of the type “pif paf poof”. The behaviour of these vocalic sequences in the context of isochronous metrics is interesting to study: what is their position in the line or the stanza? What kind of rhythmic regularity might they show? Andy Arleo (this volume) embarks upon a cross-linguistic analysis of these heretofore little studied phenomena.

Nigel Fabb (1997) classes rules governing rhyme with para-metrical phenomena. In effect, certain aspects of the study of rhyme have more to do with linguistic form than they do with metrical form. This is true for example of the role of virtual consonants in 19th century French rhyme (see Aroui 2005: 196-199). However, the first function of rhyme is the construction of stanzas. In this vein, it appears to me to merit inclusion among the elements that make up macrostructural metrics (see below §6.1.7.), just as caesura, with its role in constructing half-lines, merits inclusion among the elements that make up meter rather than among para-metrical phenomena.

6. Macrostructural metrics

6.1 Rhymes

In order to avoid any confusion, we will use here the simple word *rhyme* to designate the object studied by metrists, and the compound expression *phonological rhyme* [p. 19] to designate the syllabic constituent studied by phonologists (the unit formed by the nucleus and the coda). To make them clearer, I note the tonic accent in the examples I give of rhymes, which come from varied languages.

6.1.1 Rhyme is quite often incorrectly described by metrists. There are those who define it as a syllabic equivalence between two or more line endings. Only a few seconds are needed to notice that at a quite general level, it is not complete syllables that are placed in a relation of equivalence in a rhyme:

- English: *fádè* : *shádè* (Shakespeare, sonnet 18)
- English: *behóld* : *cóld* (*ibid.*, sonnet 73)
- French: *púr* : *azúr* (Hugo, “La fête chez Thérèse”)
- Arabic: *‘ífnád* : *l-’irwád* : *l-’ásád* : *wáğıḍád* […]31 (Ru’ba)32

These rhymes quite clearly do not place two complete syllables in a relation of equivalence. Holtman (1996: 110-111, 141-152) holds that rhyme includes an identity constraint for the phonological rhymes of syllables, and a contrast constraint for their

31 Arabic poems are monorhymed, and this one carries on for 137 lines.

onsets. Nigel Fabb (1997: 117) defended the same idea: “rhyme involves identical nuclei and codas but different onsets”. In this case, we might take the position that the linguistic base on which rhyme constraints are built is indeed the syllable as a whole. But this view of things appears to be negated by the existence of “rich” rhyme, where the syllable’s onset also forms part of the phonetic equivalence. Some examples of rich rhymes:

English: *I máy* : *of Máy* (Chaucer, “The Knight’s Tale”)

One might think that in certain traditions the syllable onset would be subject to a constraint on identity in rhyme whereas in other traditions it would be subject, on the contrary, to a constraint on contrast. Thus, rich rhyme is quite rare and exceptional in English, at the very least after the time of Chaucer (Holtman 1996: 177-179). On the other hand, in French, as Holtman (1996: 284) points out, rich rhyme is often sought-after, as is the case in Arabic. The identity or contrast of the onset consonant can thus be seen as violable constraints along the lines of those in Optimality Theory. This is Holtman’s approach. But with her work on constraint ordering, Holtman only succeeds in distinguishing “styles”, often simultaneously applicable with the same poet or even within a single poem. Yet we would expect Optimality Theory to yield predictions on constraint ranking varying by language and not by “style”. Available data for French [p. 20] tend to show that in general the onset is sometimes identical, sometimes differentiated, even with the same poet and in a single poem. Thus in this language, the onset is not at all constrained, at least at the metrical level (certain cognitive or cultural factors can result in rich rhyme being more likely for certain endings without any metrical constraint being involved—see Aroui 2005). In Arabic, some endings seem to require rich rhyme, while others do not. In English, although rich rhyme is exceptional, it is not non-existent. Its rarity maybe has more to do with the difficulty of constructing rich rhymes in English (a linguistic reason) than with constraints that are purely metrical in nature.

6.1.2 Even if rhyme does not coincide with the notion of the syllable as a whole, one might think that it is constructed on some portion of the syllable. This would thus make it possible to establish a relation between the rhyme of metrists and the phonological rhyme. But here, again, without even taking rich rhyme into consideration, it is enough to glance for a few seconds at a rhymed corpus to falsify this characterization. Otherwise, what could be made of the following rhymes:
Quite clearly, rhyme has little to do with the phonological rhyme. In these examples, the rhymes begin on the penultimate vowel, which is tonic, and continue the phonetic equivalence until a post-tonic syllable is reached. Such rhymes are legion and, in many languages, are enough to show that a metrical rhyme is not necessarily the same as a phonological rhyme. This is even more clear in languages with proparoxytone words, where a rhyme can encompass two post-tonic syllables:

- Italian: *scéndere : réndere : préndere* (Dante, Paradiso, XXVI)
- English: *fantástical : gymnástical : ecclesiástical* (Byron, “Beppo”)

This type of rhyme is called *sdrucciola* by the Italians. In English, the term is *triple rhyme*. From a typological point of view, the best term is without doubt simply *proparoxytone rhyme*. Carlos Piera (this volume) even reports an example of an Italian rhyme with five post-tonic syllables: *sdrúcciolanosene : rincantúcciolanosene* (A. Boito). Rhymes beginning on the antepenultimate vowel of a proparoxytone line are relatively rare and are, naturally, nonexistent in languages that, like French, possess rhymed poetry but do not have proparoxytone words. Optimality Theory, as used by Holtman, has difficulty in accounting for what is a rare but perfectly grammatical phenomenon. Here the rarity is doubly justified: on one hand because of the lower frequency of proparoxytone words in English and Italian, and on the other because of the rarity of rhyming proparoxytone words.

Benoît de Cornulier (2005) has argued that phonological rhyme is not relevant for rhyme construction. In a 1999 paper (p. 59), he observed that a rhyme can “extend over several vowels, which of course never constitutes a ‘rhyme’ in the phonological sense”. He also observed, following various metrists, that the rhyme begins on the last masculine vowel of a line and extends thereafter, inside the line, over the right hand context of the vowel.

We can nonetheless make the observation that there is a point of overlap between the rhyme of metrists and the rhyme of phonologists: “in fact, (metrical) rhyme begins quite precisely with the (phonological) rhyme of a syllable, even if it can extend

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34 I am grateful to Oreste Floquet for helping me locate this example.
35 In the French original: “[une rime peut] s’étendre à plusieurs voyelles, ce que ne fait bien sûr jamais une ‘rime’ au sens phonologique”.
Introduction: Proposals for metrical typology

Further (Aroui 2005: 191-192, note 2). Other observations seem to show that the notion of phonological rhyme can sometimes be useful in metrics. Metrical systems based on syllable weight show that the syllable onset does not play a role in variations in syllable weight, unlike the nucleus and coda. These are strong arguments, and they come from metrics itself, in favour of splitting the syllable into onset + phonological rhyme. To these we could add Fabb’s (1997: 117) argument, which emphasizes that in alliteration it is syllable onsets that are equivalent, which seems again to support the relevance of the onset/phonological rhyme distinction in metrics. We observe however that alliteration most often involves a stressed syllable in word-initial position, which calls into question the importance of the syllable onset for its structure.

[p. 22] If the rhyme begins precisely at the boundary between the syllable onset and the phonological rhyme, this is not necessarily an argument in favor of a syllable-based analysis of rhyme. This simply shows that the final masculine vowel of an expression necessarily occurs at the beginning of the phonological rhyme of a syllable, at least in those languages in which the syllable nucleus must be a vowel.

6.1.3 One might then ask if the rhyme is not instead dependent on the “prosodic foot”. This notion originates in the theory of the prosodic hierarchy. A prosodic foot can be envisioned as a prosodic constituent above the syllable and below the prosodic word (or, depending on the model, the clitic group). The prosodic foot is not necessarily branching and can, depending on the case, contain only a single syllable. Masculine rhyme would be a case of a prosodic foot made up of only one syllable. Feminine rhyme, on the other hand, would be a case of a prosodic foot made up of two syllables. But this approach, envisioned by Holtman (1996), has two pitfalls. First, we again encounter one of the problems that arose when attempting to relate rhyme and the syllable: the absence of a constraint referring to the syllable onset precluded seeing rhyme as a syllable-based equivalence; similarly, the onset of the prosodic foot seems not to be constrained with respect to rhyme construction; thus there is no perfect correspondence between the level of “rhyme” and the level of “prosodic foot”;
moreover, “mosaic” rhymes, of which at least one occurrence includes a word boundary somewhere after its tonic vowel, suggest that rhyme does not correspond to the prosodic foot:

- English: bowes : inów is (Chaucer, “The Parliament of Fowls”)
- English: shów it : bestów it (Shakespeare, Sonnets, 26)
- English: Spániard : tányard : mán yard (Byron, “Beppo”)
- French: exprésse : èst ce (Marot, Psaumes de David, I, 28)
- French: Ressemblerois-je : disois-je (Molière, Le Misanthrope, I)

The second part of Chaucer’s rhyme, the third one in Byron’s, and the second one in Marot’s, manifestly do not correspond to a prosodic constituent. This is also true for both parts of Shakespeare’s and Molière’s rhymes.\(^{41}\) The post-tonic element is often a clitic, but this is not always the case (in the third instance of Byron's rhyme, “yard” is clearly [p. 23] not a clitic). Holtman (1996: 120, 123-124, 181-183), noting the rarity of mosaic rhyme, proposed to characterize it as forming part of a “style” of rhyme that would be solely based on metrical constraints, whereas rhyme “styles” excluding mosaic rhyme could be defined as being constructed upon the prosodic foot. Two objections can be raised here. (1) The fact that a given construction is not present in a corpus is not grounds for the induction that this construction is not part of the “grammar” giving rise to the corpus (see Barra Jover 2007); the absence of mosaic rhyme in a corpus is thus not especially revealing. (2) Even in “styles” that might originate in the prosodic foot, there remains the problem of the prosodic foot’s onset, which seems not to be constrained at the level of rhyme.

6.1.4 The role that the right hand context of the final masculine vowel may play in the construction of meter is subject to debate. Many metrists believe that these line-final post-tonic syllables are “extrametrical”, that is, they are not associated with any of the positions that make up a metrical structure.\(^{42}\) Cornulier has defended the idea of extrametricality, buttressing the notion with a certain number of independent arguments. He observes that, in French, rhyme equivalence begins on the final masculine vowel of the line whereas metrical

\(^{41}\) We see here the beginnings of a distinction between two types of mosaic rhymes (Holtman 1996: 275-283): on one hand (as in the examples from Chaucer, Byron and Marot above), asymmetrical mosaic rhymes, where one part of the rhyme is constructed on a single lexical item, whereas another part of the rhyme is constructed on more than one lexical item; on the other hand, symmetrical mosaic rhymes, where all parts of the rhyme are constructed on the basis of more than one lexical item (as in the examples from Shakespeare and Molière above). [p. 23] Quicherat (1850: 23-24, note 3) observes that symmetrical mosaic rhymes are frequent in Italian (rimprovársi : fermársi : trovársi—Tasso, ritrovárho : penárlo—Ariosto) and in Spanish.

equivalence can be envisioned as terminating on this vowel. The resulting symmetry is troubling. The vowel in question is thus the point of convergence between two equivalences, metrical equivalence, that it ends, and rhyme equivalence, that it begins. In this sense, it plays a key role inside lines, and it can be described as the “basic vowel” (Cornulier 1997). The metrical equivalence extends over the part of the line that Cornulier calls \textit{anatonic} (i.e. the left hand context of the line up to and including the final tonic vowel). Rhyme equivalence extends over the part of the line that Cornulier calls \textit{catatonic} (i.e. the right hand context beginning with, and including, the final tonic vowel).

In 2005, Cornulier gave numerous new arguments in favour of his thesis. One of his arguments is based on what he terms “overlap” (\textit{recouvrement} in French): the final masculine vowel of the line belongs as much to its anatomic portion (corresponding to the meter) as to its catatonic portion (corresponding to the rhyme); a “syllabic” explanation cannot account for this (Cornulier 2005: 126). This tends to suggest that the status of the vowel is likely fundamental in perception (for earlier work on this question, see Cornulier 1986), since consonants do no more than modulate its signal. Sequences in children’s lore like \textit{patte(s) de mouch’—mouchard—artichaud…}, which can be called “verbal dominoes”, also tend to show that such concatenative sequences are not always syllable-based; similarly for the “retrograde and equivocal” lines of Eustache Deschamps:

\begin{verbatim}
Mente qui veult, car mes cuers est certains,  
Tains jusqu’a mort et pour celli que j’ains ;  
Ains mais ne fu dame si fort atainte ;  
Tainte me voy quant il m’ayme le mains.  
Mains, entendez ma piteuse complainte.
\end{verbatim}


We observe that on three separate occasions, it is a syllabic or disyllabic form that is repeated. But in the transition from “j’ains” to “Ains”, it is only a catatonic form that undergoes reduplication. Another example in which the reduplicated sequence extends beyond a catatonic form appears in this fragment of a verbal domino game cited by Arleo (1997: 45): \textit{Toit de maison—Maison-Blanche}. This tends to show that, in this kind of verbal game, building the sequence on the catatonic form is a minimal constraint, which does not exclude there sometimes being a higher level equivalence corresponding to a syllable, a prosodic foot, or a word.

\footnote{In Cornulier : “voyelle fondamentale”.
\footnote{We notice that this catatonic form is also a phonological rhyme.}
Taking the opposite tack, Alan Prince (1989: 52-53) has proposed to attach these line final (or half-line final) syllables to the final position of the meter or the colon. Then this metrical position could be a branching one.

To look upon the post-tonic line endings as “extrametrical” or to regard them as part of the last metrical position has important theoretical consequences. A syllabic sequence may have a special behaviour in this position. In French, for example, a VəC# sequence is allowed in line-final position but not inside a line, and not even at the caesura (see Morin 2000).

The theory of extrametrical post-tonic syllables can easily explain this kind of sequence: the syllabification constraints for French meters forbid the instantiation of such a sequence; the post-tonic syllables at the end of lines taking no part in the making of a meter, they can carry this sequence. Of course, rhyme has its own constraints (the equivalence of “catatonic” forms is necessary), but the sequence VəC# does not violate these constraints; this sequence is consequently possible within a rhyme.

Another analysis is always possible, compatible with the position of Prince (1989: 52-53): we can see these as phonemic sequences that are possible only at the right edge of the meter, when its final strong position is branching. It is reasonable to think that a branching metrical position has its own formal features.

Thus, both theories are powerful enough to explain this kind of linguistic sequence. But Prince’s approach has a typological benefit. Whereas meter is a linguistic universal [p. 25] (no known language ignores it), rhyme only appears in some languages. Thus it is reasonable to suppose that a rhyme equivalence needs a metrical equivalence to happen, whereas the opposite is not true. If one regards post-tonic syllables at the end of lines as “extrametrical” (ie as extraneous to the making of meter), then it is hard to conceive how one can assume that these syllables are necessary to the making of rhyme, if rhyme needs meter to exist.

The symmetry that characterizes metrical equivalence and rhyme equivalence in Cornulier’s model is striking. Nevertheless, it is the consequence of a partial understanding of these phenomena, metrical equivalence being a universal, unlike rhyme equivalence. The catatonic portion of the line is not necessarily devoted to rhyme equivalences. The (widespread, and in certain languages even constant) existence of blank verse reminds us of this fact.

6.1.5 I have suggested (Aroui, forthcoming, b) that metrical rhyme is not based upon a phonological object but originates in the metrical position. For reasons of space, I cannot develop this topic here.

6.1.6 The general reflections we have just made leave aside a certain number of problems\(^45\) posed by specific corpora.

\(^45\) In particular, I leave aside work that has attempted to establish a relation between rhyme (and alliteration) and units that are not phonological but morphological in nature (Rubin 1995: 106-107,
Thus in certain traditions we find rhymes that allow a tonic vowel to be placed in equivalence with a non-tonic vowel, even if this is an exceptional occurrence:

- **English:** *thing : wéring* (Chaucer, “The Clerk’s Tale”).
- **Polish:** *chléb : pótrzeb*\(^{46}\) (“Wiersz Słoty o zachowaniu się przy stole”, anonymous, 15th century)
- **Spanish:** *dós : los* (Calderón, *El mágico prodigioso*, I)\(^{47}\)
- **Spanish:** *espíritu : tú* (Luis Ángel Casas)\(^{48}\)

These are the rhymes that Gasparov (1996: 218) describes as “heterotonic”. Such rhymes pose thorny problems for metrical theory. Gasparov (1996: 98) believes that they are found in syllable based prosodic metrical systems: since accent plays a secondary role in these systems, rhyme could sometimes place a tonic vowel in equivalence with an [p. 26] atonic vowel. José Domínguez Caparrós (this volume) seems to follow the same idea. The hypothesis is interesting but does not explain why these rhymes are always rare. It is also silent about the kind of relationship these vowels may have with metrical positions: while an oxytonic form is identical to a metrical position, a post-tonic form, in principle, cannot create a metrical position by itself. When, in special circumstances, this does happen, we should verify that the line contains the expected number of metrical positions, and we should try to find out the special conditions permitting such a correspondence. Carlos Piera (this volume) bases rhymes of the type used by Calderón on the intonational structure of the line; their rarity is explained by the fact that unstressed monosyllables in Romance languages are most often proclitics which, when placed at the end of a line, produce a strong effect of enjambment. But this does nothing to explain other heterotonic rhymes given as examples here.

The “generic rhyme” of the Celtic (Welsh, Gaelic and Irish) tradition, in which different consonants can be treated as equivalent in the rhyme provided they belong to the same predefined class, also deserves to be discussed (See Grijzenhout & Holtman 1994 for Irish). These classes, distinguished from each other by degrees of sonority, voicing and aperture, merit close examination as part of an overall characterization of the phonological (and not necessarily phonetic) aspects of rhyme. Similar phenomena are to be found in Hungarian (see Lotz 1972: 20, note 21). In Arabic, there exist some

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\(^{46}\) The “ó” of *pótrzeb* in this example is not the orthographic “ó” of Polish, which notes a morphophonological variant of *io* present in certain inflected forms and pronounced [u]; it is simply, consistent with our other examples, an orthographic “ó” with a superimposed acute accent indicating the location of tonic stress in the word *potrzeb*.

\(^{47}\) Cited in this volume by Carlos Piera.

\(^{48}\) Cited in this volume by José Domínguez Caparrós.
Jean-Louis Aroui

possibilities of variation for certain intervocalic rhyming consonants\textsuperscript{49} and, within a same rhyme, -aw- and -ay- may be equivalent.\textsuperscript{50}

More surprisingly, Classical Arabic may neutralize vowels /i/ and /u/ for the purpose of rhyme.\textsuperscript{51} Awad (1980: 345-346) has tried to explain this phenomenon theoretically, when it is applied to penultimate long vowels.

More generally, there exist many traditions with approximate rhymes, and the typology for these kinds of rhymes has yet to be invented. These rhymes concern mainly folkloric or popular traditions (Zwicky 1976); but, under certain conditions, they can also be found in learned traditions (Aroui 2008). It is therefore probable that, for many languages, the strict homophony of rhyme is a kind of esthetic ideal, which is just imperfectly triggered when the formal ability of the poet (or the performer) has not been stimulated by a learned acquisition.

6.1.7 Holtman (1996: 112, 130) believes that the “domain” of rhyme is the line. Put differently, rhyme allows equivalences between lines to be established. Taken literally, this position would have enormous consequences for metrical theory. For example, it [p. 27] would oblige us to accept the idea of discontinuous correspondence in a stanza with an (abab) rhyme scheme. However, many arguments, as we will soon see, lead to the conclusion that this kind of stanza is made up of two constituents, (ab) and (ab). Rhyme would thus facilitate establishing correspondences between these constituents, more so than between lines themselves. This view is supported by traditions that for example have (xaxa) rhyming stanzas, where it seems quite clear that it is the constituents in question that rhyme, and not the lines.\textsuperscript{52} If the function of rhyme is to establish correspondences between constituents above the line, it is legitimate to classify it as part of macrostructural metrics, even if its linguistic properties can be independently studied. We now turn to these problems properly seen as “macrometrical”, turning our attention to the stanza.

6.2 Stanzas

6.2.1 Strophics and the study of prescribed forms, though they are ancient and are part of a venerable tradition, have generally been ignored in typologically oriented works: only the cross-cultural migrations of the forms from one linguistic domain to another have generally been studied, most often from a historical and cultural point of view (see

\textsuperscript{49} Some examples are in Awad (1980: 349 et 374-375).

\textsuperscript{50} Awad (1980: 342-344, 365, 373-374).


\textsuperscript{52} This is the case, in particular, in the Chinese tradition (see Jakobson 1979: 215-223) and in certain English folk songs (Rubin 1995: 258, Kiparsky 2006: 27-28).
Brogan 1993). Various authors have also devoted their energies to cataloguing strophic forms.\footnote{See for example Martinon (1989 [1911]), Frank (1966 [1953 & 1957]), Mölk & Wolfzettel (1972), Antonelli (1984), Horváth (1992). It should be pointed out that Martinon is at one and the same time a catalogue and a historical and theoretical piece of work that draws on this catalogue.}

A general and typological study of stanzas and poetic macrostructures is a task that for the most part remains to be undertaken. In folkloristics, a variety of important observations have long been part of the literature.\footnote{See for example Cohen (1949), Burling (1966).} Taken as a whole, recent work has most often dealt with stanzas and the oral tradition.\footnote{Hayes & MacEachern (1996b: 3-7 and 1998), Arleo (2003), Dell (2003a), Kiparsky (2006), Árnason (2006). See above, §3.1, pp. 8-9.} As a metrical tool, the stanza is without doubt lyric in nature, and its origin is thus to be found in oral forms. It is however useful to distinguish its metrical structure in a narrow sense from the properties that flow from its interface with musical structure (on this, see Kiparsky 2006: 12, 15). Thus, it is clear that Hayes & MacEachern (1998) study the stanza mainly from the standpoint of its interface with musical structure. The stanza has evolved in significant ways in written metrical poetry, ways that have as yet received little explicit attention. This type of study can however make it possible to isolate the metrical aspects of the stanza, taken apart from their interface with music. The most important authors to make wholehearted attempts at explaining the component principles of the literary stanza (within certain linguistic traditions) are, to my knowledge, Ruwet (1981), Cornulier (1995: 125-200), Aroui (2000), Fabb (2002: 196-203) and Dell (2003a). In France, Benoît de Cornulier has done considerable work in renewing the subject. Fabb proposes to analyse stanzas using metrical grids; Aroui and Dell, on the other hand, draw up tree structures to analyse them, on the basis of observations made by Cornulier. Below (§6.2.2.), I take up certain elements of Cornulier (1995), and develop some proposals of my own (§6.2.3.) on the basis of examples taken from French that will, I believe, help point out the directions that a typology of stanzas might take.

6.2.2 French literary stanzas are poetic superstructures that allow lines to be grouped together in a systematic manner, “essentially through rhyme”\footnote{In the French original: “essentiellement au moyen de la rime”.} (Cornulier 1995: 127). For example, in a rhyming passage from Hugo (aabccb, ddeffe,), the typography (blank after the sixth line) brings out two groups of six lines that in abstracto are isomorphic: each realizes the same abstract rhyme scheme (aabccb). It is customary to call such groups of lines stanzas. The most common simple classic French stanzas are (abab) and (aabccb). Cornulier calls these “pure” forms.

We find in stanzas the tendency to binarism that perhaps universally (see §2.5., p. 6) characterizes meters. “When several units, themselves metrical, together form a
metrical unit at a higher level, generally they are not more than two in number”\textsuperscript{57} (Cornulier 1995: 262). This principle “does not imply that metrical units generally group together in pairs, but only that if they group together, they do so only in pairs”\textsuperscript{58} (1995: 262-263).

[p. 29] The tendency to binarism is found at the level of the stanza’s internal structure. Every stanza is analysable into two subgroups, of three lines in the case of the stanza (aabccb). Cornulier calls these subgroups modules.

This structuring into stanzas and modules forms part of the more general framework of the tree-like hierarchical embedding of classical metrical structures: half-lines (where they exist) join together to make up lines, lines join together to form modules, modules join together to form stanzas, and finally, (sub-)stanzas join together to form compound stanzas. The higher the metrical structure’s level, the more its end tends to correspond to a major syntactic boundary.

In the (aabccb) stanza, the first module rhymes with the second: by virtue of the rhyme, their equivalence is “material-based”,\textsuperscript{60} that is to say present in the phonetic material itself. Furthermore, by virtue of their overall internal makeup, (two instances of the same rhyme followed by one instance of another rhyme, i.e., abstracting away from the specific, two similar objects followed by a different object), these two modules have a formal equivalence. The rhyme that unites the two modules, and which participates in the two types of equivalences, is particularly salient. Cornulier (1997 and 1999) calls this “main rhyme”.\textsuperscript{61} Its salience is due to a number of different reasons: its intermodular character, the fact that it occurs only once within a module, and its position (in a classical French stanza, it can only appear in the last or next to last line of the module).

6.2.3 To account for the salience of the main rhyme and the branching structure of the stanza, I propose to draw a somewhat unusual tree structure that will both represent the hierarchical form of the stanza and what I will call its structural form.

Hierarchical form is the set of family relations between the nodes of the tree. Two nodes can be “sisters” when they are immediately dominated by the same node.

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\textsuperscript{57} In the French original: “Lorsque plusieurs unités elles-mêmes métriques forment ensemble une unité métrique à un niveau supérieur, généralement elles ne sont pas en nombre supérieur à deux”.

\textsuperscript{58} In the French original: “[Ce principe] n’implique pas que les unités métriques se regroupent généralement en paires, mais seulement que si elles se regroupent, elles se regroupent seulement en paires”.

\textsuperscript{59} This definition of binarism does not exclude non-branching nodes (unary forms) and ought to make it possible to explain without difficulty numerous metrical forms such as Middle English alliterative verse or Chinese regular verse; these forms, in which certain constituents dominate a single node, violate the binarism constraint as it is formulated by Golston (1998: 730-733).

\textsuperscript{60} In the French original: “matérielle”.

\textsuperscript{61} In the French original: “rime principale”.
The node that immediately dominates them is their “mother node” and they are this node’s “daughter nodes”. These relations between nodes make up hierarchical form.

Structural form resides in the position of the nodes on the tree’s vertical axis. The higher a node on this axis, the more fundamental and particularly salient the form it represents. Structural form could eventually be described as “cognitive” form, but everything leads to the position that hierarchical form is also a cognitive (or at the very least perceptual) object.

The principal of binarism associated with the distinction between hierarchical and structural form allows the sizain (aabccb) to be represented by a tree (Figure 6).

\[
\text{(6)}
\]

\[
\text{S: stanza} \\
\text{MR: main rhyme} \\
\text{M: module} \\
\text{SR: secondary rhyme}
\]

In each module, the main and secondary rhymes’ nodes are sister nodes. They are thus equivalent from the point of view of hierarchical form (being immediately dominated by the same node). On the other hand, the node representing the main rhyme is placed higher in the tree, because it is assumed to be more salient from the perspective of structural form.

There exist strophic forms derived from the pure forms (abab) and (aabccb), and rarer than these two; these rhyme on the schemes (abba) and (aabcbc). With respect to the pure form, they are built on the basis of the inversion of the order of appearance of the last two instances of rhymes in the second module. Cornulier calls them “inverted” stanzas.

The inverted stanza (aabcbc) poses a particular analytical problem. It is without doubt related to the (aabccb) form and is consequently formed of two modules (aab) and (cbbc). This bipartition is moreover statistically confirmed by the analysis of syntax or punctuation at line endings. The problem appears as soon as we try to represent its hierarchical and structural forms in a tree (Figure 7).
It appears that the constituent represented by the node SR2 is discontinuous. We could try to represent this stanza’s hierarchical form with other trees, but these would not respect [p. 31] at least one of the stanza’s organizational principles seen above: a tree (((aa))((bc)(bc))) would not respect the bipartition into two modules of three lines, which is nonetheless statistically confirmed by the syntax or an analysis of line-final punctuation; a tree (((aa)b)((cb)c)) or (((aa)b)(c(bc))) would predict that the main ending of the second module is represented by a rhyme colour that is present twice inside this module, which goes against the requirement of salience for the main rhyme (see above § 6.2.2.).

It is therefore useful to conceive strophic structures that integrate discontinuous constituents. However, so as not to leave the door open to the overgeneration of forms, it is necessary to determine the limits of the field of application of these discontinuous forms. With the stanza (aabcbc), only the branches that lead terminal nodes to their mother nodes are subject to crossing. Moreover, when they cross, these branches lead from sister nodes.

It would be interesting to investigate whether these discontinuous forms are found in linguistic traditions other than the French tradition, and if the principles that allow them are those that apply to the French sizain (aabcbc). Certain data coming from the Italian sonnet tend to show that these forms and principles seem indeed to be found in other linguistic areas (see Aroui, this volume). It would also be necessary to carry out an investigation in the area of folk forms, to see whether similar discontinuous structures can be discovered there. This type of research problem opens up whole new area of typological and comparative research.

6.3 Prescribed Forms

A prescribed form (also, closed form or fixed form) is a metrical form whose constraints are based in the overall form of the poem. The number of stanzas or lines is often
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Predefined and, when it is not, it is the way they are sequenced that is. Prescribed forms are poetic macrostructures that are fixed during the course of their prehistory and then become cultural stereotypes. Certain specialists classify prescribed forms among poetic genres, but it is better to reserve the notion of genre for referring to objects that are recognisable mainly by virtue of their meaning or theme. The elegy, hymn or eclogue are genres, whereas the sonnet, the triolet or the Pindaric ode are prescribed forms.

The study of prescribed forms is rich and complex. They are not found only among learned forms. By virtue of their macrostructural character, prescribed forms are relatively detached from the phonological and morphophonological foundations of the language, and consequently easily cross frontiers, languages and eras, at least when the historical and cultural context permits. The existence of cultural borrowings between languages in contact (for example, the propagation of the sonnet across different European countries in the Renaissance) has long been well-known. Today, these borrowings are facilitated by the globalization of culture and modern technologies of information transmission. Thus we find haikus in numerous languages, even those whose meters are not moraic (in this case, an equivalence in number of syllables is substituted for the equivalence in number of moras). We also find sonnets in dozens, if not hundreds, of different languages.

Philologists have most often been preoccupied with the history of these forms or with describing their variants. But studying these phenomena by reproducible methods must begin with the establishment of metrical databases of various languages, set up in such a way that their data are comparable (coding systems must be identical if not very similar), which presupposes, before the quantitative work is even begun, putting in place a process of theoretical and methodological reflexion, which necessitates in-depth discussions. The Polivanov Circle in Paris has initiated such a process of reflexion with the aim of setting up a (necessarily partial) database of the “universal sonnet”.

To date, theorists have shown little interest in prescribed forms, yet each one of them is deserving of a careful metrical description of its invariants and constituents. It is not possible for me, in the space I have here, to attempt a theoretical overview of the different prescribed forms that are known to me. The reader will find analyses of the triolet (Cornulier 1992) or the sonnet (in this volume) that I think could suggest what shape a theoretical approach to these forms might take.

7. Presentation of the volume

The articles making up this volume originate in large part from the Typology of Poetic forms conference held in Paris in April 2005. The contents of the volume do not correspond exactly to that of the conference, and aims to give an overview of the variety of problems that can be posed in metrical typology. Such an objective could only be obtained by publishing side by side specialists of folklore and of learned forms,
philologists and theorists. Far from being a handicap, this variety of approaches seems to me to be a source of riches on which each of the components can draw. Certain authors published here have a twofold preoccupation with theoretical and quantitative concerns and it is doubtless toward these kinds of preoccupations that metrics will turn once it reaches full maturity.

7.1 The first four articles in the volume deal with the recently posed problem of the text/music interface in isochronous metrics. Bruce Hayes, using English for his data, suggests that the best way to account for musical textsetting is to work out a system of ranked and conflicting constraints within the Optimality Theory framework. Taking a more comparative tack, François Dell and John Halle show that English stress requires [p. 33] a greater correspondence with strong positions in musical structure than French stress, since it is more salient than the latter; on the other side of the coin, French requires that the correspondence between syllabic structure and the melody be the same throughout all the stanzas in a song. Patrizia Noel and Robert Vetterle argue that the mixture of binary and ternary rhythms in the Bavarian folk dance called Zwiefache is due to the nature of prosody in New High German, where trochaic and dactylic rhythms are largely dominant. Andreas Dufter and Patrizia Noel, testing Burling’s (1966) hypotheses on French and German nursery rhymes, show that in German, linguistic forms associated with metrical form often reveal ternary structures that they identify with feet. They associate these tendencies with phonological properties of the language and speak of “natural versification”.

The articles that follow deal with isochronous metrics proper. Benoît de Cornulier notes that the minimal isochronous metrical equivalence is a “2-2-beat group” where two bounded groups are placed in a relation of equivalence through two “vowel onsets” (Figure 8).

![Figure 8](image)

Marion Blondel and Christopher Miller deal with the domain, fascinating for typology, of children’s poetry in sign languages. They observe numerous systems of equivalences that fall in particular within the domain of isochrony and, according to Miller’s theory, syllable weight. Children’s poetry in these languages could thus at times display mixed metrical systems, but the authors are circumspect about the eventual metrical character of these forms.

7.2 The part of the work dealing with prosodic metrics opens with an article by Nigel Fabb and Morris Halle that presents “Bracketed Grid Theory”, with examples taken from Hebrew, English and French. Bruno Paoli, for his part, using Arabic as a data
source, argues in favour of metrical theories solidly based on an empirical knowledge of the metrical facts. Donka Minkova proposes, in the framework of Optimality Theory, a model of Middle English alliterative verse that typologically legitimizes it as a member of the range of English verse forms. Nila Friedberg extends the subject of reflexion to the problem of the variability of cultural values associated with the same meter across different languages, using a Russian translation by Joseph Brodsky of an English poem by W. H. Auden.

The three contributions that follow concern the boundaries of cola or lines in prosodic metrics. Marc Dominicy and Mihai Nasta deal with the thorny issue of cæsura on the basis of complex data from Ancient Greek. From an entirely different perspective, Kristin Hanson reflects on the same problem, focussing her attention on English, Italian and French. Carlos Piera, for his part, addresses the question of the constraints governing line endings, particularly in Spanish; following Hayes’s (1989) hypothesis that the constituents of prosodic metrical structures refer to different levels of prosodic structure, he proposes to explain the structure of line endings by referring to the structure of Intonational Phrase endings.

7.3 The third part brings together two studies dealing with para-metrical phenomena. Andy Arleo studies ablaut reduplication in a corpus of 1884 counting-out rhymes in 51 languages. Oreste Floquet addresses the problem of elision and synaloepha in Italian poetry and pleads for a clear distinction between phenomena with a phonological origin and those that are strictly (para-)metrical in nature.

7.4 The last four articles deal with metrical superstructures. The rhyme is represented by Dominique Billy’s study devoted to floating consonants in the œuvre of the French poet Tristan Corbière. José Domínguez Caparrós deals simultaneously with rhymes and stanzas in Sephardic song, which he attempts to situate in the general history of Spanish versification. Iván Horváth presents the stanza of old Hungarian poetry from the standpoint of its rhyming and metrical structures, and underlines its connexions with musical structure as well as its relation to the strophic forms of central and eastern Europe. Finally, prescribed forms are represented by the article that I devote to the Italian, French and English sonnets.

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