

Meter is Music: A Reply to Fabb and Halle

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Introduction/Abstract

The theory of metrification present presented by Fabb and Halle (henceforth F&H) seems to us to be flawed in a number of respects. At the root of the problem is F&H's assumption that metrical structure is projected from the surface syllables of a linguistic text. We argue that an alternative view not discussed by F&H is superior. This view, shared in its essentials by Kiparsky 1991, Lerdahl 2001, Hanson 2006, John Halle 2008, and Deo 2007 among others, holds that metrification proceeds via the mapping of linguistic structures onto a pre-determined metrical template. We show that this view leads to more natural accounts of many of the relevant phenomena, especially with regard to mismatches between text and metrical structure, such as catalexis, anacrusis, anceps, and syncopation. Our alternative has the advantage of allowing for poetic and musical meter and performance to be accounted for with a unified set of straightforward mechanisms. We argue, contra section 4 of F&H, that this is a desirable and feasible move.

Summary and Critique of F&H's Arguments

The first section of F&H consists of a summary of approaches to stress in Generative Phonology, and an exposition of Idsardi's 1992 theory of prosodic organisation as applied to word stress. While F&H's views on these matters are not defended in the contribution under discussion, they are extensively documented in Halle's previous publications and in the references F&H cite, and we tend to concur with the theory of stress they outline. For this reason, we concentrate our summary and critique of F&H's arguments on sections 2 onwards, and will say no more about section 1.

Section 2 contains F&H's discussion of metrical verse, which they claim is to be distinguished from prose in that it is composed of lines. As they put it, "absent the line, the text is prose, no matter how 'poetic'." (p.7)¹ Two important properties of lines for F&H are that they are restricted in length and that they differ in the principles which determine the placement of marked syllables. Fabb and Halle 2008 argue that these principles and restrictions can be accounted for using the same grid formalism and grouping rules as are employed in Idsardi's stress theory. They cite this as "the most important result" of their book (p.8). F&H demonstrate this idea by elaborating the rules for generating English trochaic tetrameter, as exemplified by Pierre Antoine Motteux's *A Song* of 1696. F&H's first assumption is that syllables project on to Gridline 0 of the metrical grid as asterisks; hence, their approach is one in which meter is projected from linguistic syllable structure. They then formulate three rules specific to trochaic tetrameter. Applying these to Motteux's first line yields the parse in (1) (their (22)):

- (1) Slaves to London I'll deceive you;
- | | | | | | | | | |
|----|---|----|---|----|---|----|----|------------|
| (* | * | (* | * | (* | * | (* | *(| Gridline 0 |
| (* | | * | | (* | | *(| | Gridline 1 |
| (* | | | | *(| | | | Gridline 2 |
| * | | | | | | | | Gridline 3 |

They stipulate the condition on well-formed grids for metrical poetry in (2) (their (23)):

- (2) The last-to-be-generated Gridline in a well-formed metrical grid must contain a single asterisk.

F&H argue that this condition derives the requirement that lines be limited in length. Given that the

¹ It should be noted that this curious assertion is a matter of subjective definition rather than fact, and that many scholars and practitioners of poetry would not agree with it.

Note that the grid shown in (3) is periodic, but the actual rhythm of the piece need not be. As F&H put it, “[i]t is true that it is possible to pronounce [the line “slaves to London I’ll deceive you”] with a fully regular rhythm, for example stressing ‘I’ll’ because it is off-numbered, but this is a performance practice rather than a fact about how the meter controls the composition of the line. It is also possible to perform the line with a more regular rhythm (in which ‘I’ll’ is not stressed), but this is just as metrical.” They conclude from this that no condition on grids can constrain the distribution of stressed and unstressed syllables correctly, and instead introduce the notion of ‘maximum’, along with the condition below (p.9, their (25&26)):

- This means that stressed monosyllables need not project to Gridline 1, although they will tend to do so. Such projection is only compulsory for maxima. This is an intriguing proposal, whose strong predictions need to be tested against the ample literature on this topic.

F&H move on to provide a further illustration of their theory using a piece in iambic pentameter. It is here that F&H present their responses to some of those (frequent) circumstances in which linguistic material and meter fail to match perfectly, obviously an important issue for an approach in which the former is claimed to be a projection of the latter. F&H's rules for generating iambic pentameter (their (28)) are exemplified using an excerpt from Matthew Arnold's *Sonnet to the Hungarian Nation* of 1849. Here we repeat only the second line used by F&H, illustrating the full grid for it. Interestingly, F&H have indicated using accents the syllables which "[they] think are likely to be stressed in a performance of the line" (p.11); note that this does not always coincide with where prominence is assigned on the grid (maxima are underlined):

- In this case, for example, the syllable assigned most prominence by the grid is likely to receive no stress at all in performance. F&H would presumably attribute this to a performance convention not relevant to the theory of the structure of the underlying meter; at any rate they do not comment on it. Before considering their mechanisms for deriving other forms of text-meter mismatch, however, it is worth noting that F&H's algorithm inserts parentheses on Gridline 0 from right to left. They claim that there are two arguments for this: one is that "in an iambic meter the leftmost group can sometimes be incomplete" (p.11). The other is that the rightmost syllable is sometimes skipped by the grouping algorithm. However, it seems to us that at least the second of F&H's arguments here

is undercut by the fact that their theory also allows for the non-projection of syllables (see below). There is nothing that prevents non-projection of syllables from occurring at the periphery of a line, and so apparent “skipping” of a peripheral syllable cannot be taken to show anything about the directionality of parenthesis insertion. Nonetheless, F&H take this evidence as indicating that such syllables are extrametrical. They argue that this is what happens in the line below, also from Arnold’s *Sonnet*:

- (6)
- | | |
|------------------------------------|------------|
| Hallow the Salamanian promontories | |
|)* *)*)*)* *)*)* * | Gridline 0 |
| * * * * | Gridline 1 |

Allowing extrametricality is one way in which F&H can account for circumstances in which a syllable appears to be ignored by metrical structure whilst maintaining their view that the latter is projected from syllables. However, extrametricality can only be invoked in the case of syllables that are peripheral to a line. The problem is that “extra” syllables are also found in the midst of lines. F&H recognize this, citing the following example from John Donne’s *Holy Sonnet 6* (p.12, their (30)); we have bracketed the “extra” syllable:

- (7) And gluttonous death, will instantly unjoynt
s s [s] s s s s s s s

Since in F&H’s approach only individual syllables can project onto Gridline 0, they cannot solve this difficulty by allowing two syllables to correspond to a single unit of meter. Instead, they propose that “poets may occasionally violate [the rule forcing syllables to project to Gridline 0] and not project a given syllable” (p.12). As for when this non-projection option can be invoked, F&H assert that “[t]here is no general principle in English poetry determining which syllables cannot project, but there are some tendencies”. This is held to contrast with the situation in Romance, where “the non-projection of syllables [...] is subject to strict rules” (p.12, n6). Crucially, while the projection of an asterisk to Gridline 0 may occasionally be absent in the presence of a syllable, the converse can never hold. As F&H put it, “no rule permits an asterisk to appear on Gridline 0 if it is not projected from a syllable; that is, an asterisk cannot project from a pause or rest, but only from an actual syllable.” (p.13). They add that music differs from poetic meter in this regard.

There are a number of things to say about these proposals. One is that F&H are able to deal with hypersyllabicity (surfeit of syllables relative to the canonical number), but only at the cost of introducing two separate mechanisms, extrametricality and non-projection. Effectively, these two mechanisms are there to account for the same phenomenon, differing only in the position in the word of the syllables affected. This redundancy is surely undesirable, and is in no way mitigated by the fact that the two mechanisms occur at different levels of analysis in F&H’s framework: in the case of extrametricality an asterisk is ignored, in the case of non-projection no asterisk is visible in the first place². Worse still, there is a serious flaw in F&H’s requirement that asterisks cannot be projected from a pause or a rest in metrical poetry. This requirement, which is fundamental to the architecture of F&H’s projection-based theory, seems to us to leave them with no way of accounting for catalexis³ – the appearance of obligatory silences before, within or after lines. Such gaps participate fully in metrical structure, and yet have no linguistic material associated with them.

Deo (2007) provides an impressive generative metrics account of the metrical repertoire of

2 Furthermore, extrametricality implies that the affected syllable entirely fails to participate in the metrical structure. We believe that this is false- the alternative approach to metrification that we expound below shows that the relevant beats are not in fact outside of the meter.

3 There are other types of mismatch between text and meter which seem problematic for F&H but are readily resolvable by the alternative view that we set out below, such as anacrusis, syncopation and anceps. For space reasons we restrict ourselves to a discussion of catalexis.

Classical Sanskrit verse, a tradition that had previously seemed chaotic and problematic from the point of view of formal metrical theory. The account makes crucial use of catalexis in order to bring out the underlying unity of meters which had traditionally been categorised separately. For instance, Deo (2007) compares the meters known as Jalaughavegā and Cāruhāsinī (p. 99; Deo's (41))

- (8) a. — — — — — Jalaughavegā
 b. — — — — — Cāruhāsinī

Deo points out that “Cāruhāsinī is exactly like Jalaughavegā except that it lacks the final syllable” (p.99). By assuming that Cāruhāsinī has a final catalectic foot, Deo is able to assign the same parse to Cāruhāsinī as to Jalaughavegā, one with four iambic feet (p.99, her (42b)):

- (9) — — — — —
 * * * * *
 * * * * *
 * * * * *

Deo is able to show that no fewer than ten Sanskrit meters can be seen as instantiating this parse if catalexis is assumed. While the data from Sanskrit verse are argument enough for the importance of catalexis, we would like to emphasize that the phenomenon is by no means restricted to this metrical tradition. Catalexis has been crucially invoked for Japanese by Kawakami 1973 and Asano 2002 (where five-mora lines have three catalectic moras and seven-mora lines have one catalectic mora), for Persian by Hayes 1979, for Spanish by Flores 2004, for modern and Classical Greek by Parker 1976, and for Classical Arabic by Golston and Riad 1997. In English too use of catalexis in verse has been noted, for instance in the work of Larkin (Groves 2001), in trochaic verse in English (Deo 1992), in some American folk verse (Hayes and MacEachern 1998), in short lyrics such as those of Emily Dickinson and Robert Frost (Lerdahl 2002), and in Shakespeare, who often has nine-syllable lines in iambic pentameter sections, including initial catalexis (Groves 2007:130,134). Ironically, what we take to be the correct solution to this problem, a greater exploitation of the parallelism between poetic meter and musical meter, is closed off by the analytical wall that F&H erect between the two in their section 4.

In this section, F&H propose to extend the grid formalism to the analysis of music. However, as anticipated above, there are major analytical differences between poetic meter and musical meter for F&H. Firstly, they recognize no musical entity equivalent to the line in poetry. Music is thus held to be exempt from condition (23), “meaning that the last-to-be-generated Gridline may contain any number of asterisks, depending on how long the musical piece lasts”(p.14)⁴. Secondly, F&H propose that rather than being projected from beats, Gridline 0 in music is projected from the silences between beats. This draws a fundamental analytic divide between poetry and music, because on this account “in music, a Gridline 0 asterisk can project from a rest or silence, which is not possible in the metrical structure of verse”. Of course, allowing for such projection in meter as well would allow for an analysis of catalexis, yet we have already seen that this would go against an architectural imperative of F&H's approach. Not only does this lead to descriptive inadequacy with regard to meter itself, it also misses an enlightening parallel between music and meter. Silent beats, uncontroversially a staple of musical rhythm, are a precise analogue

4 It is not at all clear to us that this assertion is well motivated- much seems to depend on one's definition of line here. We leave this issue aside for space reasons.

for catalexis⁵. The parallelism cannot be captured by F&H because of their assumption that metrical structure is projected from linguistic structure. We suggest that this notion needs to be substituted for one in which linguistic structure is mapped onto a pre-existing abstract metrical template. The format of such templates, we suggest, is fundamentally the same in the case of both meter and music (see also Kiparsky 1991; Hanson 2006; John Halle 2008; and Deo 2007). Since the mapping of linguistic material to metrical units is not obligatorily 1:1, this idea avoids the flaws we have identified in F&H's approach. There is no need to invoke two separate mechanisms to capture hypersyllabicity- this phenomenon is the result of a many-to-one mapping between syllables and a metrical time slot⁶. Catalexis is merely the result of a timing slot being unfilled. We shall see that this view allows more abstract regularities in metrical structure to be brought out. In addition, it allows music and meter to be accounted for using the same mechanism.

Let us illustrate these points via a comparison of the analyses that the two approaches offer of the nursery rhyme *Hickory Dickory Dock*.

- (10) Hickory dickory dock,
 The mouse ran up the clock,
 The clock struck one,
 The mouse ran down,
 Hickory dickory dock.

Notice that an analysis in F&H's terms is forced to assume one parse for the first and final lines of the rhyme (dactylic trimeter) and another for the other lines (iambic trimeter):

- (11) Hickory dickory dock
 (* * * (* * * (*
 (* * (*
 (* *
 *
 The mouse ran up the clock
)* *) * *) * *)
 (* * (*
 *

On the other hand, a single parse can be assigned to this nursery rhyme if the meter is assumed to consist of a template with the sort of regular rhythmic structure familiar from western music theory. Note that the placement of columns in this representation indicates metrical timing slots, and their relative height depicts their relative prominence- the text here is mapped onto these metrical slots, rather than the latter being projected from the former.

- (12) Hickory dickory dock Ø Ø Ø Ø the mouse Ø ran up Ø the clock Ø Ø Ø Ø
 *
 * * * * * * *
 * * * *
 * * *

5 We believe that the same could be said for some of the other phenomena mentioned in note 3, but we cannot explore this here.

6 The opposite sort of many-to-one relation, in which a single syllable corresponds to several metrical time slots, is also attested, as when syllables are lengthened to fit the meter (Annis 2006 notes cases of melismata in Greek, where vowels can be lengthened for this reason; an example is *oulomene:n* for *olomene:n*, from the Iliad 1.2). Note that such many-to-one and one-to-many relationships between linguistic material and timing slots precisely mirror the possibilities of autosegmental analyses of ordinary phonology. Hence, our approach preserves the most attractive aspect of F&H's theory by allowing linguistic and metrical phenomena to be described with the same formalism.

We can see from this representation that in fact the nursery rhyme has a completely predictable repeating 3/4 or 6/8 rhythm which is entirely missed by an F&H-style analysis. Prominences occur on the first beat and every third beat after that. The prominences in turn can be grouped into repeating sets of four where the most intense prominence is the first, the second and fourth have weakest prominence, and the third is an intermediate one. Here we see yet another defect of F&H's approach- the primacy of syllables in their account leads to an overly surface-oriented approach to meter. An abstract template which admits the existence of silent beats, on the other hand, can bring out deeper regularities of metrical structure.

We agree with Deo 2007 that what F&H consign to the nebulous domain of performance actually constitutes an essential component of the rhythmic competence of both composer and listener.

Conclusion

While we applaud F&H's attempt to employ similar analytical devices in the analysis of stress, poetic meter and music, we feel that their projection-based approach leaves them unable to account for many important aspects of meter. Ironically, one of the major causes of this is the fact that assuming the primacy of linguistic syllable structure bars them from giving a more unified account of music and meter than they would otherwise be able to achieve. We have argued that a mapping approach avoids the descriptive inadequacies of projection by allowing the fundamental similarities of music and meter to be brought out. The notion of mapping of linguistic structures onto timing slots preserves an analytical link between ordinary autosegmental phonology and the analysis of music and meter, this being one of the most attractive features of F&H's proposals.

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