

A NEW USE FOR THE HETERODYNE-HOMODYNE THEORY

Readers of this *Revue* know, better than anyone else, that the notion of heterodyne-homodyne alternation is now a dead letter, at least when studied in isolation, for helping us understand Vergil's *Aeneid* (1). However, it may be premature to eliminate this particular tool from those which critics have at their disposal; homodyne-heterodyne alternation may still be of some utility when used in conjunction with analytical aids. One such aid is the metrical scheme used by T. Halter (2) who divides Vergil's lines into four main types (a, b, c and d) with several sub-types (a_1 , a_2 and c_1). As examples of each he gives the following :

- a arma virumque cano Troiae qui primus ab oris (*Aen.* 1.1)
- a_1 nascetur pulchra Troianus origine Caesar (1.286)
- a_2 voltu, quo caelum tempestatesque serenat (1.255)
- b aspera tum positis mitescent saecula bellis (1.291)
- c parce metu Cytherea manent immota tuorum (1.257)
- c_1 fertur auriga neque audit currus habenas (*geor.* 1.514)
- d bellum ingens geret Italia populosque feroces (1.263)

Now, when these types are combined with heterodyne-homodyne alternation, some interesting and perhaps important patterns begin to appear which I would urge computer-oriented classicists to pursue.

I give here only one example; a properly programmed machine ought to be able to produce many more and would, I am confident, enable us to develop a deeper understanding of Vergil's poetry (3).

	a	Nec minus interea extremam Saturnia bello	He
	a	imponit regina manum. ruit omnis in urbem	He
	a	pastorum ex acie numerus, caesosque reportant	He
575	a ₂	Almonem puerum foedatique ora Galaesi,	He
	a ₂	implorantque deos obtestanturque Latinum.	He
	c	Turnus adest medioque in crimine caedis et igni	Ho
	a	terrorem ingeminat : Teucros in regna vocari	He
	a	stirpem admisceri Phrygiam, se limine pelli.	He
580	a	tum quorum attonitae Baccho nemora avia matres.	Ho
	a	insultant thiasis (neque enim leve nomen Amatae)	He
	a	undique collecti coeunt Martemque fatigant.	He
	a	ilicet infandum cuncti contra omina bellum,	He
	b	contra fata deum pervet so numine poscunt	Ho
585	b	certatim regis circumstant tecta Latini	Ho
	a	ille velut pelagi rupes immota resistit	He
	a	ut pelagi rupes magno veniente fragore	He
	a	quae sese multis circum latrantibus undis	He
	b	mole tenet scopuli nequiquam et spumea circum	Ho
590	c	saxa fremunt laterique inlisa refunditur alga	Ho

c verum ubi nulla datur caecum exsuperare potestas He
 a consilium, et saevae nutu Iunonis eunt res, He
 a multa deos aurasque pater testatus inanis : He
 a "frangimur heu fatis" inquit "ferimurque procella ! He
 595 b ipsi has sacrilego pendetis sanguine poenas Ho
 c₁ o miseri. te, Turne, nefas, te triste manebit He
 a supplicium, votisque deos venerabere seris. He
 b nam mihi parta quies, omnisque in limine portus Ho
 a funere felici spoliior. "neclura locutus He
 600 a₁ saepsit se tectis rerumque reliquit habenas. Ho

(Aen. 7. 571-600)

This is a very highly charged passage; Allecto has done her work and done it well : the Trojans and Italians are now locked in the mortal combat which will occupy them for most of the rest of the poem. Every critic can point to this or that significant word, phrase, or image. What I wish to suggest here is that the poet himself may have pointed out some highly significant passages and that the scholar and the computer working together can objectively pinpoint those passages which seem to be significant because they are anomalous in several ways. (Or, it may turn out that the frequency of abnormalities is such that nothing can be made of them; this, too, would be useful to know.) Few would have difficulty recognizing that lines 575-6 are emotive; the switch to a₂-type lines isn't very helpful. But the abrupt switch to a c-type line, the anomaly being doubled by the homodyne, certainly cannot serve to de-emphasize line 577 : Latinus is called in, but Turnus suddenly appears, almost as a divine

(or demonic) epiphany, *medioque in crimine*, the homodyne serving virtually to put *crimine* in capital letters. Again, the doubly unusual lines 584-5 and 589-9 flanking the double simile stand out from the surrounding text as do the other anomalous lines which follow. Line 596 may be the most unusual, hence the most significant, of all, for it differs from the others (except, in part, 575-6) by being the only c₁-type line and by being heterodyne; it is certainly ominous even if one does not know how the poem ends.

It is not my intention to provide a critical discussion of this passage (such a discussion would have to range over almost all of the poem's themes); what I hope to accomplish is to persuade a computer classicist to provide critics (or himself) with tools for objective criticism.

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NOTES

- (1) N. A. GREENBERG, "Vergil and the Computer : Fourth foot texture in Aeneid I," *Revue de l'Organisation Internationale pour l'Etude des Langues anciennes par Ordinateur*, 1967, nr. 1, pp. 1-16.
- (2) T. HALTER, *Form und Gehalt in Vergils Aeneis : Zur Funktion sprachlicher und metrischer Stilmittel* (Munich, 1963), p. 22, with notes on p. 111f.
- (3) In the left-hand margin I give the metrical type according to Halter's nomenclature and practice; in the right-hand margin, He (Heterodyne) or Ho (Homodyne) according to the line's fourth foot texture.