The Trojans, Statistics, and Milman Parry

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I. Introduction

When we examine noun-epithet formulae in all the grammatical cases for the Trojans of the *Iliad*, we are struck by a remarkable fact: with two exceptions,[1] no one formula is repeated exactly more than a few times. This is most evident in the nominative, where all the other characters who occur anything like as often as the Trojans display at least one, and usually several, noun-epithets repeated precisely: the same words, the same grammatical case, the same position in the hexameter. Twenty-six of the familiar Homeric characters repeat a formula at least 10 times; the Trojans, who are mentioned more often than 16 of these 26, have no formula at all in the nominative case repeated more than 4 times. Since noun-epithet formulae have come to be regarded as the very staples of Homeric composition, the Trojan deficit—or apparent deficit—requires an explanation.[2]

This might appear to be merely a matter of pointing to the noun-epithet formulae for the Trojans and the others, and counting. But pointing and counting are not enough. For one thing, the Trojans might be defective in the number and occurrences of *all* their formulae, and not simply in noun-epithets; therefore we must inquire whether the Trojans possess as many formulae as the others, and whether these formulae occur as often. For another, the Trojans might possess formulae of a different kind, which Homer employed instead of noun-epithets. Finally, a potential numerical

[1] Τρώων ἱπποδάμων and a vocative phrase combining them with the Lycians and Dardanians that I count as a noun-epithet: see 384 *infra*.

[2] I shall suggest an explanation in these pages, but a full statement must await future publication; the current study is chiefly devoted to stating exactly what it is that the Trojans do not have, and showing that this deficit is significant.

deficit, whether of formulae generally or of noun-epithets, is best tested statistically, and statistics requires a precise statement of what is to count as a formula for our comparisons.

Because the Homeric scholar is fortunate in possessing a large number of countable and genuinely comparable data, the use of statistics in Homeric scholarship has a long history. Scott, Parry, O'Neill, and Page are four names that come to mind at once of Homerists who have used numbers.[3] Homer's style is repetitious, and repetitions can be enumerated; Homer's text is long, so that repetitions multiply, and portions can be fruitfully compared with other portions. Students who have a point to make can usually provide a large number of examples and argue that their examples come from the same or comparable populations. And whenever we count and then compare what we have counted, we are engaged in statistics. The use of statistical tests in Classical Studies appears to be recent; but tests merely check, confirm or refute, so that in using them we do no more than take another step along an ancient pathway.

In this paper we shall be counting references to the characters and groups of characters in Homer and comparing sets of such references. The theory of this kind of set, which goes back at least to Parry's earliest work, has been developed by Gray, Page, Paraskevaides, and others.[4] Usually such sets have been confined to formulae—formulae for shields or for the sea, for instance; in recent work I have extended the concept to include all the references, formulaic or otherwise, made by a proper or common noun, alone

[3] J. A. Scott, *The Unity of Homer* (Berkeley 1921) 84–104; M. Parry, *The Making of Homeric Verse*, ed. A. Parry (Oxford 1971 [hereafter *MHV*]); E. O'Neill, Jr, "The Localization of Metrical Word-types in the Greek Hexameter," *YCS* 8 (1942 ['O'Neill']) 103–78; D. L. Page, *The Homeric Odyssey* (Oxford 1955) 149–56.

[4] D. H. F. Gray, "Homeric Epithets for Things," *CQ* 61 (1947) 109–21 (=G. S. Kirk, ed., *The Language and Background of Homer* [Cambridge 1964] 55–67); D. L. Page, *History and the Homeric Iliad* (Berkeley 1959); H. A. Paraskevaides, *The Use of Synonyms in Homeric Formulaic Diction* (Amsterdam 1984). For bibliographies of recent work on Homeric formulae in general, see M. W. Edwards, "Homer and Oral Tradition," *Oral Tradition* 1/2 (1986) 171–230; J. M. Foley, *Oral Formulaic Theory and Research* (New York 1985) and *The History of the Oral-Formulaic Theory* (Bloomington 1988). A good general account of the poet's technique may be found in M. W. Edwards, *The Poet of the Iliad* (Baltimore 1987) 15–48.

or in phrases.[5] This extension allowed me to calculate the percentage of occasions when a formula is employed to express a given thought—its "formularity." Comparing such percentages is fruitful: for instance, "in Troy" and "from Troy" have a much lower percentage of formularity than other place-phrases, such as "in the Greek camp," "to Olympus," "from the battlefield." Homer either lacked, or eschewed, formulaic ways of saying "in Troy" and "from Troy." I suggested that the epic tradition failed to develop such formulae because it did not normally place the narrative action inside the walls of Troy. Homer, who describes many scenes in Troy, failed to use many formulae for "in" and "from Troy" because he inherited none and developed very few. Whatever the explanation, statistical study can thus expose important facts about the poet's technique—that certain formularities are normal—and about the Homeric text—that on at least these two occasions it behaves abnormally. In the following pages I want to establish an obviously related fact, the Trojan deficit in noun-epithet formulae.

Our first task will be to show that the Trojans are not significantly lacking in either the number or occurrences of their overall formulae. To accomplish this, we must first develop criteria for statistically measurable proper-noun formulae. We then ask whether the Trojans have an appropriate number of different formulae, and discover that they have more than the average number for characters who occur as often as they. We then proceed to measure the formularity of the thirty-eight characters we wish to compare. We anticipate uniform formularity (for this usage, see 352 *infra*) or intelligible divergence: our formulae ought to be compositional tools that the poet applies universally, and if we find deviations we cannot understand, we shall need to re-examine our criteria. As it happens, all the characters except Patroclus display formularities that either approximate 70% or deviate intelligibly. The Trojans are among the characters who appear to deviate, but a ready explana-

[5] See W. M. Sale, "The Formularity of the Place-phrases in the *Iliad*," *TAPA* 117 (1987 [hereafter "Formularity"]) 21–50, and "The Concept of the Homeric Formulae Group," *APA Abstracts* (1986). The second of these is the preliminary version of the present paper. I make this point to emphasize that Margalit Finkelberg and I, working entirely independently and dealing with entirely different data, have derived similar percentages for formulaic occurrences and similar conclusions from them. See her "Formulaic and Nonformulaic Elements in Homer," *CP* 84 (1989 [hereafter 'Finkelberg']) 179–87, and nn. 17–19 *infra*.

tion is forthcoming: their formularity is no different from that of such other groups as the Achaeans and the Suitors. The Trojan formularity is normal.

This enables us to take the next step, of showing that another sort of Trojan deficiency does exist. We know that they lack exactly repeated formulae ("frequent formulae"). We observe that most frequent formulae possess certain qualities largely denied to infrequent formulae, and from this observation we evolve the concept of "regular formulae" (frequent formulae possessing these qualities). These qualities enable us to determine a minimum number of occurrences required for a formula to be considered regular, and to measure this regularity (the percentage of regular formulae out of all formulaic occurrences) for the 23 of our 38 characters whose overall formulaic occurrence is sufficient to provide statistically valid measurement). Again we anticipate (except for the Trojans) uniform regularity or intelligible divergence. We find, however, that the regularities, unlike the formularities, do not cluster around any particular percentage; we find instead that for all except the Trojans, regularity varies proportionately with localization (the percentage of times that a word falls in that place in the hexameter line in which it most frequently falls). This fact permits us, finally, to pinpoint the Trojan deficit: it is not so much a lack of regular formulae as a lack incommensurate with the metrical properties of their name. It also permits us to rule out meter as the cause of the deficit.

In looking for the true cause, we notice another remarkable characteristic of the Trojan formulae: several of their epithets portray them as unfeeling, arrogant, uncivilized—quite unlike the Trojans of our *Iliad*, very like the Suitors of the *Odyssey*. Homer as narrator never uses these epithets of the Trojans: they are found solely on the lips of the Achaeans and their gods. Yet the narrator of the *Odyssey* (whether Homer or another) is perfectly happy to use a similar—indeed often identical—set of epithets for the Suitors, in his own name and often as regular formulae. This points to an explanation for the deficit. Suppose that Homer's predecessors in the epic tradition treated both the Suitors and the Trojans simply as villains and provided Homer with a set of formulae replete with hostile epithets. These would have been his regular formulae, had he continued portraying Troy in the same way. Instead, he changes the portrait to one that is far more sympathetic.[6] Homer's Troy is Vergil's Troy and the Troy of most poets since: a city tragically destined to die, condemned by the gods and by the weakness of their own political institutions. The poem is indeed an *Iliad*, and the harsh epithets are uttered only by Troy's enemies.

This explanation can only be adumbrated in what follows. But another theme emerges: regularity, or formulaic frequency, is not only a vital aspect of Homer's technique but also reinforces the fundamental idea of Milman Parry's *L'Epithète traditionelle*: the existence of systems of formulae characterized by noun-epithet form, economy, usefulness, and occurrence at certain major metrical cola.[7] Almost all frequent formulae fall into Parryan formula-systems. This is a remarkable result and should not be obscured by the fact that we shall be entering several demurrers, *e.g.* that most *infrequent* formulae do not fit into Parryan systems. We shall also suggest several important refinements of Parry's concepts, for reasons that will become clear as we proceed. The term "formula" is first given a more general definition than Parry's; we shall then propose criteria for the much narrower notion of "statistically appropriate nominative proper-noun formulae." Parry's contention that the formula expresses an "essential idea" will be restated in terms of Frege's distinction between "sense" and "reference."[8] Parry's "essential" means "what remains after all stylistic superfluity has been removed" (*MHV* 13), and a judgment as to what is stylistically superflous is far too subjective for a fundamental definition. "Economy" is redefined: metrical overlap is tolerated if the overlapping formulae have importantly differing meanings, or if the overlap is attributable to a generic epithet that is a familiar feature of

[6] Whether these changes should be attributed to Homer or to his generation and perhaps its immediate predecessors is not a question that we can answer; but we can say that they were brought about before a new set of Trojan formulae could be developed. When I say "Homer," therefore, I shall mean "Homer and/or his contemporaries and teachers."

[7] See below, 368f.

[8] For the term "essential idea" see *MHV* 13, 272; for Frege's distinction see "On Sense and Meaning," in *Translations from the Philosophical Writings of Gottlob Frege*[3], edd. P. Geach and M. Black (Oxford 1980), reprinted in *Critical Theory Since 1965*, edd. H. Adams and L. Searle (Tallahassee 1986) 625–36. A good critique (but in my opinion not severe enough) of Parry's "essential idea" may be found in E. Bakker, *Linguistics and Formulas in Homer* (Amsterdam 1988) 154–57.

the poet's formulaic vocabulary. The fixed epithet is not called "ornamental," nor shall we speak of the indifference of the audience to its meaning. And the term "noun-epithet" will now include doubling phrases such as "Trojans and the wives of the Trojans," used in a collective sense. With these qualifications, we can say that our discussion of formulaic frequency entails a remarkable quantitative validation of Parryan systems.

II. Formularity

The entities to be counted and compared in what follows are names and naming phrases in the Homeric text. For statistical purposes we group these into sets: "the Trojans," "Achilles," "the Achaeans," "Hera," *etc.* Instead of maintaining that each set refers to a single "essential idea," the names in each set will be regarded as having one and the same referent (denotation) but not necessarily the same sense (connotation).[9] For our purposes, referents are characters in a given poem, considered either by themselves or as doing, feeling, or saying something. The referent might be Zeus in the *Iliad*; the sense of a phrase referring to him might be "cloud-gatherer" or "father of gods and men." Or the referent might be Zeus talking, Zeus angered, Zeus raining. The set has only one personal referent, and contains all the names, formulaic or non-formulaic, single word or phrase, for that referent. The referent can be plural, provided that the name is collective: "the Trojans," but not "Zeus and Athena." No word or phrase will be included if it is not, or does not contain, a name—either a proper noun or a common noun used as a name, such as "father, mother, husband, son." No pronouns, no allusions, no implied subjects; for these have a logic, a meter, a syntax, and an aesthetic that require a separate poetic technique. Let us call these sets whose members have one and the same referent "semantic sets." And let us agree to regard a character in the *Odyssey* as a different referent from a character in the *Iliad*. We shall be studying 38 such sets for the 38 members of the Homeric corpus mentioned more than 20 times in the nominative.[10] For the most part we shall be discussing nominative sets.

[9] See the references in the preceding note.

[10] The choice of 20 T(otal) O(ccurrences) is somewhat arbitrary. The Chi-square test, which we shall use to determine uniformity and deviance in formularity, is thought not to be reliable if the TO for each sample or character in our study is

Our first job will be to decide which members of a naming set are to be identified as formulae. Definitions, though many and various, tend to include three common denominators. There must be repetition of some sort—words, sounds, syntax, or meter. There must either be more than one word, or else a single word or grammatical form repeated in the same place in the verse. And the word or phrase must be essential to the overall compositional technique. Formulae cannot be merely repeated references to an event in progress (such as instructions given, then carried out); they cannot be repetitions found only in longer repeated passages not themselves formulaic (such as the list of Agamemnon's gifts in Book 9); and they cannot be simply deliberate echoes aimed at some special effect in a given passage or passages.[11] Though for many purposes a definition this general may suffice, statistics requires greater precision: since we are counting and comparing, we must know exactly what to count or we shall be most uneasy about our comparisons. What we need are statistically viable *criteria* for "nominative proper-noun formulae."[12]

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too low: "too low" varies according to the average formularity of the group being studied. At 85% formularity, 33 TO is in principle too few; at 50%, we can safely drop to 10. The figure of 20 is therefore too low for some of the average formularities we shall encounter, and unnecessarily high for others; it represents a compromise that will work well most of the time. On the use of the Chi-square test, see D. L. Clayman, "Sigmatism in Greek Poetry," *TAPA* 117 (1987) 73 n.19, with references.

[11] On repetition for special effect, see *MHV* 272–75, and W. G. Thalmann, *Conventions of Form and Thought in Early Greek Epic Poetry* (Baltimore 1984) 1–13, on ring-composition in Homer. On the definition of "formula," see J. B. Hainsworth, *The Flexibility of the Homeric Formula* (Oxford 1968) [hereafter 'Hainsworth'] 33–45; C. Higbie, *Measure and Music* (Oxford 1990); E. Visser, *Homerische Versifikationstechnik* (Frankfurt 1987) 1–40; and Bakker (*supra* n.9) 151–95. Bakker's insistence that phrases *function* as formulae neatly rules out mere echoing. A good many of my infrequent formulae are evidently formulae because they function as such. Some of them, however, and most of the regular formulae are still, in my opinion, to be thought of as building blocks, or as tools with which formulaic lines are fashioned. Also, Bakker starts with the premise of oral composition, which I am unwilling to do; even though I find it the likeliest hypothesis, I prefer not to base the statistical analysis upon it.

[12] One might ask why, given the controversy over "formula," we do not simply replace it with "compositional unit," or the like. The deficiency of the Trojans would be just as apparent. I resist this procedure chiefly because of my conviction that our quantitative analysis vindicates Parry's formula systems and formula

Parry's definition, "a group of words regularly employed under the same metrical conditions to express a given essential idea" (*MHV* 13, 272), does not tell us what syntactical structures to count; the "same metrical conditions" may or may not mean the same part of the verse; and the phrase "regularly employed" appears to exclude certain phrases that occur only once but which many scholars, Parry included, would call a formula (μεγάθυμος Ἀχιλλεύς, for instance).[13] Our criteria must be far more precise than this.

The structural formulae of J. A. Russo and others, and M. N. Nagler's formulae generated by unconscious templates, are fascinating and fruitful ideas, but they do not suit our restrictions.[14] Neither possesses clear-cut semantic boundaries, while our interest in the names of the Trojans necessarily confines us to references to persons. Furthermore, as both authors point out, their concepts do not lend themselves readily to statistical methods. At this stage of statistical endeavor, at least, we must stick to counting signifiers repeated either exactly or within exactly demarcated limits. We must aim at rigidity in our criteria; we can even afford to be too rigid, since whatever we leave out will be easy to identify and take up in future study. But we are certain to omit some phrases that others will identify as formulae, and which we would have counted if our goals had been different.

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types, and that the phrases that will eventually most concern us in this paper are precisely the formulae that most concerned him, especially in *L'Epithète traditionelle*. Wherever it seems necessary, to avoid confusion I shall use the longer phrase "nominative proper-noun formulae."

[13] On unique formulae see *MHV* 8f, 312f, and 350f *infra*.

[14] J. A. Russo, "The Structural Formula in Homeric Verse," *YCS* 20 (1966) 227; M. N. Nagler, *Spontaneity and Tradition* (Berkeley 1974). Both structural formulae and pre-verbal Gestalten are surely part of the poet's technique, though the qualms of W. W. Minton must be carefully considered ("The Fallacy of the Structural Formula," *TAPA* 96 [1965] 241–54). Both are generative, in supplying the patterns according to which many formulaic expressions come into being. For a recent view of the development of oral-formulaic theory from Parry's essentially static concept of the formula through the generative views of Hainsworth, Russo, Nagler, and others, see A. T. Edwards, "ΚΛΕΟΣ ΑΦΘΙΤΟΝ and Oral Theory," *CQ* N.S. 38 (1988) 25–30. On the formula itself as generative, see G. Nagy, *Comparative Studies in Greek and Indic Meter* (Cambridge [Mass.] 1974) 143. I am certain that all these structures will someday prove to be quantifiable; but we must begin with what we can more readily identify and count.

Since our formulae must include a naming noun accompanied by some other word or words, it is natural to ask what other parts of speech to include along with the noun.[15] If we embrace all parts of speech, provided the phrase is repeated exactly, we both exclude too much (we need room for inexact repetitions) and probably include too much (does the repetition of Ἥρη δ' in itself constitute a formula?). But if we were to restrict our data to noun-epithet formulae, we might overlook other kinds of formulae—such as noun-verb combinations—that may function in the place of noun-epithets for some of the characters. The word θυμός, for example, occurs in the nominative without an epithet in frequently recurring noun-verb combinations in the *Odyssey*: ἤθελε θυμός, 6 times final; θυμὸς ... κελεύει(οι), 12 times final; *etc.* If, in studying this word, we were to omit these combinations, the result would be certain to mislead. Now, we shall find that no character in the nominative possesses a noun-verb formula as frequent as these. On the other hand, none of our characters is significantly lacking in noun-verb phrases, so that we build in no bias. Such phrases (often exactly repeated many times) are very frequent, moreover, with nouns in the oblique cases, both proper and common. I therefore find no good reason to exclude them from our study of the nominative; after all, the most fundamental formula is an extended noun-verb formula, *viz.* a whole line that divides into a noun-epithet and a formulaic verb-phrase, such as τὸν δ' ἠμείβετ' ἔπειτα ποδάρκης δῖος Ἀχιλλεύς.[16] Precision demands that we include only cases where the noun is the subject of, and not merely juxtaposed to, the verb. But we are almost certain to be counting some combinations as formulae that others might exclude.

On the other hand, statistical need urges us not to cast our nets too widely. For instance, some characters display certain noun-adverb and noun-conjunction combinations in great abundance. Others lack these almost entirely, and we can readily trace this vari-

[15] We cannot count single words used repeatedly at the same place in the verse: see Appendix I.1 and Hainsworth 35 n.4. In "Formularity" (28) I used the term "minimal formula" for repeated preposition-plus-noun phrases. Let us extend this term so as to include these highly-localized single words, as well as nominative noun-plus-adverb and noun-plus-conjunction phrases.

[16] Parry included these noun-verb combinations in his general definition (*MHV* 13f), giving the whole line ἦμος δ' ἠριγένεια φάνη κτλ. as an instance of the expression of a single essential idea. I have not found any meaningful difference in the calculation of relative formularity if they are excluded.

ation to the meters of their names. The conjunction αὐτάρ plus a bacchiac name, such as Ἀχιλλεύς, is often found at the end of a verse, and ἑτέρωθεν following a name beginning with a long syllable is frequent at the beginning. But neither occurs frequently with names with meters different from these. Parry would have counted such phrases as formulae. They *are* formulae; but we would be ill-advised to include them, at least in the statistical determination of formularity. It is pointless to build into our tests a factor that we know in advance will distort the results, and that we already know to be a function of meter. Indeed the result may well be to blur other, more subtle, effects of meter.

The different meters of the various names seem, in fact, to have been obstacles to ready versification which Homer and the poets of his tradition sought to neutralize in creating the formulae. They did this by choosing epithets that would cause the whole phrase to fit into certain standard metrical cola and thus belong to certain "formula types," in Parry's phrase. We shall see that they did not quite succeed for all the characters (see 357 *infra* on Class A, where we observe one of the "subtle effects of meter"); but in the case of adverbs and conjunctions they did not even try. Some characters were awarded frequent noun-adverb and noun-conjunction combinations if the meter encouraged it, others were passed over. Though we must omit them from the statistical count in determining formularity, we shall be alert to the possibility that they were employed for some characters—Patroclus, for instance—who are short of noun-epithets and noun-verbs. In particular, we shall be taking a close look at these when we are studying the formulaic frequency of the Trojans (see n.26 *infra*).

We therefore admit combinations of a noun with a verb or with an epithet, understanding "epithet" as an adjective, a noun in apposition, a noun-phrase in apposition (ἄναξ ἀνδρῶν), a noun in the genitive, a governing noun (as in υἷες Ἀχαιῶν), or a noun in a combination that preserves a singular sense (as in Τρῶες καὶ Τρώων ἄλοχοι). We rule out combinations with other parts of speech. These syntactical limitations in turn obviate the need for certain other criteria: since a verb or an epithet must be included alongside the noun, our formulae will not be too short; since the parts of the formulae must be syntactically related, they cannot be too long. I can see no reason to restrict formulae to certain parts of the verse, or even to a single line: a formula in enjambement can be readily identified and counted.

If a phrase that meets our syntactical requirements is exactly repeated—the same words, in the same grammatical case, in the same order, in the same place in the verse—and in other respects suits the general definition of "formula" offered above, we can count it. But since a fear of bias urges us to include among our formulae whatever is appropriate, we would like to include phrases that occur only once (Parry's unique formulae). And we can do so, provided that they repeat visually identical signifiers within exactly demarcated boundaries. I suggest that a unique phrase be considered a formula if meets one of the following requirements: (1) It and another phrase are Hainsworth-alterations of each other—*i.e.*, it is an inflectional variation (the same phrase in the accusative, for instance), or a phrase in which the noun and epithet or verb are separated by another word, or a phrase identical in form but occurring in a different place in the line, or an inversion, extension, or any other variation noted in Hainsworth's discussion of formulaic flexibility. Like Hainsworth, we shall count all phrases that meet these requirements as formulae. Unlike him, we shall consider them different, or unique, formulae, with the exception of extensions in which the formula is exactly repeated (our reasons for parting company with Hainsworth on this point are given in Appendix I.2 *infra*). (2) The phrase is repeated exactly in the other poem. (We are counting Zeus in the *Odyssey* as a different character from Zeus in the *Iliad*, so that these cannot be counted as examples of the same formula.) (3) The phrase repeats part of an extended formula with which it cannot be counted (as when κούρη Ἰκαρίοιο occurs once by itself, and elsewhere with περίφρων Πηνηλόπεια). (4) The phrase contains a generic modifier, *viz.* an adjective, noun, or verb used of more than one character that is unspecific enough to be usable of a number of characters, and normally occurs in a fixed position in the line.

To summarize: we have moved from "formulae" to a set of "nominative proper-noun formulae" to a subset called "statistically appropriate nominative proper-noun formulae." These will be phrases consisting of a name plus either a modifying epithet or a verb of which it is the grammatical subject. They will be exactly repeated, or inexactly repeated according to the above limitations. Finally, they must be repeated in a way that convinces us that they are the normal and regular ways to express the thought, and not accidental or created for special effect (*supra* 347).[17]

[17] Further discussion and defense of these criteria will be found in Appendix I. They are similar to those I employed in "Formularity" and (though her statement

The ideal result of applying these criteria would be for all 38 characters to display a uniform formularity—that is, a uniform percentage of formulaic occurrences out of all their occurrences. (The term "uniform" here means only "showing no significant deviation.") Failing this, we should expect all, or almost all, of our characters to show a comprehensible percentage of formulae: either to display uniform formularity or intelligible deviation from it; we expect no character to show a deviant percentage that we cannot explain. We would then be virtually certain that we had isolated Homer's most basic and universally employed tools for handling proper names in the nominative. If we can then show that one of these tools is lacking for a given character, the omission will obviously be significant.

We begin the statistical analysis of each character's nominative semantic set by counting all its members, *i.e.*, by taking all the times that a person or thing is mentioned by one of its names, or by a common noun functioning as a name, and calling this the *total occurrences* (TO) for that character. We then determine the number of formulaic references to this character and call it the *total formulaic occurrences* (TFO). We then count the number of *different formulae* (DF) for each character. We go on to identify the remainder of the TO as non-formulaic occurrences (NFO), stressing as we do so that "non-formulaic" has a very specialized sense, that we know we are counting here many phrases that with different criteria would quite legitimately be called formulae. We then calculate TFO as a percentage of TO, and call this percentage the *formularity*. The formularity of a character (or place or thing) answers the question "Of all the references to this character how many are made with a formula?" This definition of the term is identical with the one I have previously offered ("Formularity"), except that there the criteria for what was counted as a formula differed because the data were different.

Most of the characters in Homer are referred to by more than one name: Ἀχιλλεύς, Ἀχιλεύς, Πηληιάδης, κτλ. ; Ἀθήνη, Ἀθηναία, κτλ.; Ἀχαιοί, Δαναοί, Ἀργεῖοι. One of the names is the most

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is less precise) not far from those of Finkelberg. Since Finkelberg's criteria, applied to certain strictly verbal formulae, lead to almost exactly the same percentages for formulaic and non-formulaic occurences that we shall observe for noun-formulae, both sets of criteria may be said to have succeeded in isolating significant aspects of the oral-poetic technique (see n.19 *infra*).

common; we can call this the *basic name* ('Ἀχιλλεύς —with two λ's—'Ἀθήνη, 'Ἀχαιοί). An oblique form, such as 'Ἀχαιῶν, of a nominative basic name counts as an instance of the basic name when it is used with an epithetic governing noun, such as υἷες, so as to be metrically identical with the basic name—when, say, as here, it occurs in final position. We can then cite the formularity twice: once for the basic name and once for all the names. (Note that Συβώτης is the basic name of Eumaeus.)

When we begin to examine formularity as a general phenomenon, we notice that it can vary considerably from one kind of referent and one grammatical case to another. People in Homer are more formulaic in the nominative case; places, in the oblique cases, especially the ablative (genitive), locative (dative), and accusative; things, in the instrumental (dative) and accusative. Hence formularity should always be stated for a given entity in a given case. And we have agreed to consider Odysseus in the *Odyssey* a different entity from Odysseus in the *Iliad*. So we say "Athena in the *Odyssey* in the nominative: formularity of the basic name, 78%; of all her names, 77%."

In comparing the number of different formulae (DF) used for our 38 characters in all their names, we find a range from 4 to 52; the Trojans have 21. This is more than the average number (16); but to discover whether it is appropriate for a character who appears 100 times, as the Trojans do, we need to know the normal ratio between the number of DF and the total occurrences. Hence we plot TO *vs* DF on a graph, and use linear regression (calculating least squares) to obtain the straight line with the best fit. The resulting equation has a Pearson correlation coefficient of .80 with a P-value of .0001, which indicates a good correlation: the probability of no correlation is insignificant.[18] If the Trojans, at 100 occurrences, had had 18 DF, they would have been right on the line; with 21 they are very close. Clearly there is nothing abnormal about the number of their formulae.

Next, let us consider the formularity of our 38 characters. They are mentioned by name 3,191 times in all (TO). 2,180 of these

[18] On the Pearson correlation coefficient, as well as the Spearman rank (which I have used as a check), see F. P. Jones and F. E. Gray, "Hexameter Patterns, Statistical Inference and the Homeric Question," *TAPA* 103 (1972) 192. The P-value is the probability of the null-hypothesis, which in our case is that there is no correlation between DF and TO.

references are made with a formula (TFO). The ratio of these two figures, the formularity, is 68.3%. (This is the figure for all the names; the figure for the basic names is 69.8%.) If, despite my generosity in counting as a formula most of the phrases which invite dispute, we allow for experimental error by adding 2 formulae per character, we find that the overall average formularity is still 71%.[19] If we were to add the approximately 355 minimal formulae (*supra* n.15), we would get 80%; but this, of course, is misleading, since so many characters lack minimal formulae. As a check, we also calculate the mean formularity, the average value of each character's formularity: the result is just slightly higher, 72.1% for the basic names, 71.6% for all names.

These figures are arresting: in our statistically precise sense, over two out of every three nominative mentions is formulaic, nearly one out of every three is not. Even in the looser sense that includes minimals, many characters are hardly more than 70% formulaic, and seven are less. It is evident that the formulaic technique allows for such characters; it provides room for the poet not to use a formula, even as it offers him the opportunity to use one. This freedom is scarcely absolute, to be sure, and the extent to which deep-structure and similar formulae impinge upon it must be measured in further study.[20]

At this point we need to know whether our average formularity is a uniform figure, or whether some characters deviate significantly. When we determine the formularities of all of them individually, we notice considerable variation. In the *Iliad* Diomedes, for instance, is 100% formulaic in the basic name; Patroclus is only 33% formulaic. Both percentages are evidently a long way from 69.9%, and the Chi-square test (to be applied presently) will show that the variation is significant. But what is being signified? The metrical difference between the names Διομήδης and Πάτροκλος? The relative period at which each character entered the epic tradition? The existence or non-existence of traditional formulae? Keep in mind that we are aiming at either uniform formularity or intelligible deviation as a measure of the correctness of our choice

[19] Finkelberg finds that Homer's expressions for joy are 64% formulaic, 29% non-formulaic, and 7% indeterminate. The similarity is certainly gratifying.

[20] Finkelberg, who reaches much the same conclusion, attributes the freedom to Parry's rule of economy: the poet "found it ... thrifty not to overload his formulaic apparatus" (187), a judgment that I find highly persuasive.

of criteria; if we cannot understand the difference in formularity between Patroclus and Diomedes, this will be good reason to wonder if we chose correctly.

For greater precision, we construct two tables, dividing our 38 characters into two groups: those whose formulae occur more than 25 times (Table I), and those whose formulae occur less often (Table II). Table I gives us characters who occur often enough to give us real faith in the patterns they display. We shall base most of our conclusions upon it, and use Table II chiefly to show whether the patterns on Table I are maintained (in the case of Patroclus on Table II, they are not).[21] Let us also make separate tabulations for the basic name and for all the names (one of our 38 characters has fewer than 20 basic-name occurrences and is omitted from the basic name tabulation).

Finally, let us group the characters into classes with statistically uniform formularity. Uniformity is measured by the Chi-square test, which means nothing more than "lacking significant deviation." The test gives us the probability (the P-value) of the "null hypothesis" that any deviation is due to chance alone, and is therefore not significant. If, for instance, the P-value is .50, the odds are even that a seeming deviation is merely accidental. The statisticians I have consulted suggest that when the P-value falls below .05, the deviation is probably insignificant. We shall use this figure to form our classes, with the understanding that a P-value only slightly more than .05 will be cause for hesitatation. If the P-value for a group of characters is .1 or more, we shall consider the group uniform; if it falls to .07 or .08, we shall be in some doubt; if it goes below .05 we must form a new group. (Tables I and II also have columns for RF, regular formulae, and IF, infrequent formulae, a distinction to be developed later.)

We begin with Table I, with the larger sample sizes. We find that it must be broken into three classes, giving us six subclasses: classes A, B, and C, both for the basic names and for all names. We are interested in the formularities of basic names as well as all names, but

[21] We might have employed a different criterion (more than 60 TO, say). If we had, we would have constructed groups with much the same patterns as we get using the criterion of more than 25 TF. The advantage of the latter, which I have chosen, will show up more clearly when we break down formulae into RF and IF. Its disadvantage is that it groups into Table I two characters with relatively low TO, Menelaus in the *Odyssey* and Diomedes, who have a slight distorting effect on the statistics.

for different reasons. The all-names group is our fundamental unit, the semantic set of all references to a character by any one of his or her names, and our first questions are how often a person is mentioned in a formula, and how often by a non-formulaic reference. If we were especially interested in the formularity of the Greek army, for example, it would not do to confine ourselves to the formularity of the word 'Ἀχαιοί. On the other hand, in the basic-names groups all the references to a given character will have identical metrical properties, even in the rare cases (such as υἷες 'Ἀχαιῶν) where the basic name is inflected.

Three of the characters pose minor problems of classification. Agamemnon belongs in Class A for the basic name, Class B for all the names. As we shall see, the reason for this is that his ionic-a-minore basic name is metrically the same or very like the others in Class A, while his alternative names with much lower formularities settle him in Class B for all the names. Again, Diomedes, at 100% formularity in the basic name, almost belongs in a class by himself. By including him in Class A, we make the Chi-square probability for Class-A basic names rather low at .056; if we were to subtract him, the probability of uniformity would rise dramatically. But his all-name formularity is about average for Class A, so that it is pointless to create a special class for his basic name. It is as if the poet uses the alternate names to keep the formularity uniform, at least within the classes. Finally, Menelaus' TO is low enough to disturb the Chi-square test when the average formularity is as high as it is for the basic names in Class A; this might urge us to drop Menelaus altogether, if it were not for the fact that in Class A for all the names, he causes no trouble.

Quite apart from the Chi-square test, the naked scholarly eye can discern three uniform classes in Table I, especially for the all-name formularities. We have a large middle class, a much smaller class of four members who deviate on the high side, and a still smaller class of three members who deviate on the low side. The large size of Class B is gratifying; but we need to account for the deviations, or our choice of formulary criteria must come into question.

The three members of class C, the low deviants, are each groups of people: Achaeans, Suitors, Trojans. They are the only such groups in our 38 characters, and the correlation between plural number and low formularity is surely significant. Now, one of the common uses of nominative formulae is to function as the subject of a verb of speaking—usually of a formulaic half-line containing such a verb and lacking a subject noun (hence a formula with a different syntax from those we are studying here). Groups of people are not often the subjects of such verbs, and this may be why they are less formulaic.

Class A is made up of characters whose long basic names form augmented anapaests: Penelope is an adonic, Diomedes an ionic a minore, and Menelaus a third paean. Agamemnon in his basic name is a member of Class A, and he too is an ionic a minore; his alternative names have normalized him. Only Telemachus, of the Class B and C characters, has as long a name as these, and he is metrically quite different from the extended anapaests of Class A. He is a first paean who must be handled as a choriamb; he usually falls in position 3–5, while the anapaests come at the end. It is probable that the oral poets found the extended anapaests hard to handle except as part of a formula. In any case, their high formularity is correlated with their unusual meter.

There is, on the other hand, absolutely no correlation between meter and formularity in Class B. We find there a large variety of meters for the basic name—7 bacchiacs, 4 spondees, 2 monosyllables, 1 spondee-iamb (Ares), 1 ionic a minore, and 1 choriamb (first paean)—and yet the formularity of the class is uniform. This must mean that (apart from Class A) formularity is not a function of the meter of the basic name. The name can be a bacchiac, almost always found at the end of the verse, or the monosyllable Ζεύς, which appears frequently in 6 different places; the formularity is essentially the same.

This conclusion is so striking that we should, if we can, subject it to a different statistical test. Since we are asking whether meter has an effect on formularity, we need a way of measuring meter. O'Neill has given us the useful concept of localization, the percentage of times that words of a certain shape fall at certain places in the line. Localization is clearly a function of metrical shape, and is thus one possible way of measuring the effect of meter in the construction of a line of verse. Modifying O'Neill's definition somewhat, we can state a word's localization as the percentage of times that it falls in that one place in the line into which it most frequently falls, which we shall call the L-point.[22] 'Αγαμέμνων in the

[22] Localization is only one gauge of a word's freedom to wander about in the line; the other two are the number of other positions it occupies and the percentage of occurrences in each other position. The number of positions is closely correlated

Iliad is highly localized: it falls at the end of the line 99% of the time. Ζεύς in the *Odyssey* comes at the end only 28% of the time, but that is the L-point; its localization is 28%. Localization gives us a measure of a word's metrical flexibility and of the limitations on freedom of position caused by its metrical shape. The higher its localization, the less freely it wanders about in the line. We cannot, of course, use localization to measure the effect of meter upon formularity for all the names, including the alternate names, since different names for the same character will usually have different metrical shapes. But it should give us some insight into the basic names.

Consider now the localization and formularity of the basic names on Table I (see Table IV). We note first, for the Class-B characters, that the localization ranges from 28% to 99%, while the formularity, as we know, does not deviate significantly from the average of 71.4%. Great changes in localization appear to affect formularity very little. But we need a more precise statement, and we want to include all of our characters. Hence we again employ the aid of elementary analytic geometry: we let x = localization and y = formularity, and plot all 23 (see Graph I). The resulting points are obviously widely scattered, and suggest no clear-cut relationship. If we attempt a linear regression, we find that the fit is poor: many points are far from the line (the equation is $y = .23x + 55$). Still, there might be a hidden correlation. To find out, we calculate the Pearson correlation coefficient: we get .43, with a P-value of .04 (*supra* 353 and n.18). Later we shall see much higher coefficients than this; still, the P-value—the probability of no correlation—is low enough to suggest that localization may have some effect on formularity, or at least that some relationship exists. So we calculate for Class B alone; the coefficient is now very low, at .22, and the P-value, at .42, is far

with the percentage at the L-point, so that by measuring the latter we have a good gauge of the former. It is important in any given case, however, to check for unusual distributions at places other than the L-point (see n.25 *infra* on Πάτροκλος, and 376 on Τρῶες). O'Neill (114–32) speaks of localization not in one, but in two, three, or even more places if these places are nearly equal in frequency. I do not see that we can use these last percentages to measure freedom; we cannot simply add them together, since a word that often appears in two or three places is obviously more free than one restricted to a single slot. The localizations are given on Table IV; they run from 28% to 99%, giving us a good broad range of individual variation.

too high for us to infer correlation. This is what we expected: among the characters in Class B, formularity is independent of meter. Now we calculate for Classes A and B, excluding C; the P-value falls to .05, again indicating some significance. Our metrical inferences from the Chi-square test are confirmed: the long ionic names of Class A, with their high localizations, probably owe their higher formularities to their meters; but within Class B, the great variety of meters does not have a significant effect upon formularity.[23]

This convergence of two statistical tests on a metrical explanation for the deviant formularity of Class A certainly entitles us to call the deviation "intelligible." The deviation of Class C, on the other hand, we attributed to the fact that its members are all groups of people. We ought, however, to investigate the possibility of a metrical explanation, and so we do a linear regression for Classes B plus C (excluding A); the P-value is .32. This value, indicating no correlation, is easy to understand: the bacchiac meter of Ἀχαιοί, with its low formularity, is shared by seven members of Class B, with normal formularities: there is a clear-cut lack of correlation. Therefore we omit the Achaeans and calculate for the rest of Classes B plus C. When we do, the P-value drops to .12, lower but still not significant. Hence it is best not to attribute the low formularity of Class C to the unusual meters of Τρῶες and Μνηστῆρες. Unusual meters do not preclude normal formularities: witness Ἀλέξανδρος, Θέτις, and Πρίαμος, all metrically unusual, all formulaically normal. And so I suggest that we continue to explain the low formularity of Class C by the fact that all three members are groups of people. This will render the deviance intelligible, which is all we need to do.

Turning now to Table II, we note that it too can be broken into three classes with average formularities almost identical to those on

[23] The reader may well wonder whether the correlation between formularity and localization within Class B would be as poor with another definition of localization. The answer must await a new definition; our present definition has nevertheless provided statistical confirmation of our suspicions that meter was responsible for the existence of Class A and might have had something to do with the deviance of Class C. We shall show that our definition gives excellent correlations between localization and regularity (the percentage of occurrences of frequently-occurring formulae; see 372f *infra*). The failure of localization to show correlation with formularity in Class B is therefore significant of something; and it certainly looks as if what is signified is the relative independence of formularity from meter.

Table I. Patroclus, the lone member of Class C in Table II, has a lower basic-name formularity than the members of Class C in Table I. This is striking: Patroclus is not a group but an individual, and as such he ought to have a higher formularity than the groups in Class C on Table I, not a lower. His 46% formularity for all the names is almost as striking (for an individual), and the Chi-square test confirms the significance of his deviance: the P-value for the 14 characters not counting Patroclus is .129, indicating uniformity, but count Patroclus, and the probability of uniformity is .0005. Patroclus has an unusual meter, but so do others; let us admit that he is truly, and so far unintelligibly, deviant.

Although Table II can be broken into three classes, Class A in Table II is not a satisfactory creation. It is true that the Chi-square test gives high marks for uniformity: .715 P-level for the basic name, .636 for all the names. But we do not need Class A for the formularities for all the names; we have seen that the Chi-square P-value for the 14 members of Table II except Patroclus is .129. This has given us our confirmation of the fact that Patroclus is truly deviant, but it makes Class A redundant. Granted that the Chi-square P-level for the 13 *basic-name* characters, excluding Patroclus, is low at .069, perhaps justifying the creation of Class A for the basic name. There is, however, no real certainty as to who properly belongs in it: I have, by imitating the average all-name formularities on Table I, constructed classes that yield high Chi-square values; but additions and subtractions can be made without creating significant deviations. It should be carefully noted that Aphrodite and Meriones (91% and 61%, respectively) may be too far apart for uniformity in the basic name population, but—with the same percentages—are not too far apart in the all-name group. This happens because they have been joined in the latter group by a new character, Hephaestus, and because the percentages for some of the others are now different. Salutary warning that if the sample sizes are low and the number of samples relatively small, we must be very cautious before declaring either deviation or uniformity. That is why most of our conclusions must rest on the data in Table I.[24]

[24] My sample sizes for some of the place-phrases in "Formularity" are even lower than 20 TO, and it may be asked whether these same strictures apply to my conclusions there. The disparities evident on those tables are far vaster than the difference between 91 and 61% we note between Meriones and Aphrodite, the

We are still free to observe that the only ionic a minore, Aphrodite, is still to be found in Class A. And just as on Table I, the four choriambs are in Class B, with lower formularities. They are joined by one molossus, one pyrrhic, one 'choliamb' (Poseidon), and one spondee, nearly reproducing the variety of Class B figures on Table I. On the other hand, Priam (tribrach), Alexander (antispast), and Iris (trochee) are now in Class A. This metrical variety does not upset our conclusion that meter was responsible for Class A on Table I. Priam, Alexander, and Iris could have gone into Class B and the Chi-square test still register uniformity. Of course that is only a negative assurance; it means that at least the divisions on Table I have not been falsified.

What Table II does, and does effectively, is point to Patroclus as a deviant—the only one out of the 38 characters of whom we can be sure. Granted, the numbers on Table II are low; nonetheless, Patroclus' effect on the probability of uniformity is too dramatic for chance alone to be responsible. All the other 37 are conformists, if the explanations for the seeming deviations of Classes A and C on Table I are accepted. To recapitulate these explanations: we have calculated an average all-name formularity for all the characters of 68.3%. We have seen that most of them—30 out of 38, when Class A on Table II is abolished for the all-name characters—do not significantly stray from this. The few who drift upwards can be explained on metrical grounds. All three downside eccentrics on Table I are groups, and the explanation of their deviance is to be sought mainly in this fact. Only Patroclus in Table II is really exceptional.[25]

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extremes on Table II (not counting Patroclus): the locatives run from 89 to 38% (conservatively); the ablatives, from 87 to 33%. The P-levels are very low, especially in the locatives.

[25] Note that even if we had counted Πάτροκλος δ' ἑτέρωθεν as a formula, Patroclus' formularity would remain significantly deviant. This low formularity is probably not due to his unusual meter. For one thing, his localization, unlike that of the Suitors and Trojans, is fairly high at 65%, which ought to enhance his formularity. (This figure, however, may be misleadingly high; Patroclus is found at six positions in the verse, unusually many for 65% localization; and all of these have low percentages, again unusual for 65%.) For another, while Πάτροκλος resembles Μνηστῆρες metrically, at least in that both are palimbacchiacs, the Suitors have the higher formularity, though they lack the potential advantage of

If, on our criteria for nominative proper-noun formulae, 37 of 38 characters either display uniform formularity or deviate intelligibly, we have a right to suppose that a formularity of approximately 70% for nominative proper-noun forms reflects a fundamental aspect of Homeric composition. Examination of 94 common nouns in oblique cases with 20 or more TO reveals an overall formularity of 71.9%, just slightly higher than our 69.8% for nominative basic names. A similar calculation for 22 proper nouns in oblique cases with 20 or more TO in the basic name gives 68.6%. And Finkelberg's figures for verbs are similar. This confirms our supposition that an average formularity of 70% for nouns occurring twenty or more times is central to Homer's technique.

There are only three frequently occurring nouns (out of more than 150) with a lower formularity than that of the Trojans. And yet the Trojan formularity is not deviant; it is the same as that of the Suitors and the Achaeans. Thus Homer had, by inheritance or by invention, the tools he needed to refer to the Trojans with a formula the expected number of times. Hence when we find that these tools are used in an abnormal way, we have a right to wonder why.

III. Formulaic Frequency (Regularity)

1. *The Trojan deficit*

So far we have not isolated any deficiency in the Trojan formula set. But when we look over the formulae for the rest of our 38 characters, we are struck by how often so many are exactly repeated, while none of the Trojan phrases occurs more than a few times. The commonest is δῖος Ὀδυσσεύς, 79 times in the *Odyssey* counting the 37 times it is preceded by πολύτλας; then comes πολύμητις Ὀδυσσεύς, 66 times in the *Odyssey* at the end of the line; then δῖος Ἀχιλλεύς, found 55 times in the *Iliad*, 21 of them with ποδάρκης. Not every character is so well-endowed, of course, but 35 of them have at least one formula that occurs at least 6 times. The exceptions are Aeneas, Meriones, and the Trojans. But Aeneas and Meriones also have many fewer total formulae and

being the frequent subject of verbs of speaking. I therefore find it much more persuasive that Patroclus' low formularity is due to Homer's having elevated him to prominence. The idea is far from new: see, for instance, J. T. Kakridis, *Homeric Researches* (Lund 1949) 88f, who asserts it to be a universally held opinion.

many fewer total occurrences than the Trojans, which makes them much less problematic. Μηριόνης, in fact, occurs with θεράπων (–εύς) ('Ιδομενῆος) in three formulae so close in wording that a less rigid definition of "exactly repeated" would have given him a formula occurring 6 times. And it may be that he and Aeneas occupy a more important role in the *Iliad* than in the tradition, so that useful formulae have not been developed. But the Trojans are not newcomers either to the tradition or to a prominent place in the poem, and they represent the most complex puzzle our statistical analysis has so far revealed. They are named in the nominative 100 times, 96 times with the basic name. Yet no one of their formulae is used more than 4 times. The Achaeans, like the Trojans, have low formularity, but they have frequent formulae that occur 26, 17, 10, and 6 times. The Trojans thus appear to be deficient in some of the basic tools for fashioning a hexameter. It was the ubiquity of such persistent repetition that led Parry to characterize the formula in general as "regularly employed" (*MHV* 13, 272). Let us borrow from his terminology to coin the term *regular formulae* (RF), meaning "noun-epithet and noun-verb formulae that are exactly repeated frequently," and *infrequent formula* (IF) for the rest, leaving the term "frequently" unspecified for the moment.[26]

Are all formulae qualitatively the same?[27] Or do regular formulae

[26] There are phrases that count as formulae by other criteria than those we employed in Section II above, that occur often and do not possess the RF-qualities. From our counts we excluded certain minimal formula-types, of which two are frequent: the names of certain characters with high localization, found constantly without an epithet in the same part of the verse, and αὐτὰρ 'Αχιλλεύς (with several other names) repeated at the end. If the Trojans displayed any such phrases in great abundance, we would have to modify any statement we made about their lack of frequent formulae. But they do not. The most common such phrase is Τρῶες δ' αὖθ' ἑτέρωθεν, which occurs five times in all, three more than the two formulaic occurrences already indicated on Table VII. The Trojans lack frequent formulae on any definition.

[27] By "qualititative" I do not mean "aesthetically superior," merely "posessing different qualities." Hainsworth ("Good and Bad Formulae," in B. C. Fenik, ed., *Homer: Tradition and Invention* [=*Cincinnati Classical Studies* N.S. 3 (Leiden 1978)] 41–50) offers some useful qualitative distinctions among formulae and relates these in a general way to the question why some formulae are more frequent than others. Several of the works he cites (46f) offer highly persuasive aesthetic reasons why certain formulae are used; all such arguments undermine the notion of accident as the basis for the popularity of formulae. I shall be singling out more tangible features (syntax, semantics, meter) because they are less subjective and therefore better suited to quantification.

possess characteristics which IF lack that might indicate why they are frequent? Of the 46 frequent formulae that occur 9 times or more (arbitrarily chosen), we note the following features: (1) all are noun-epithets; (2) when they employ the basic name, all except one put it at the localization-point; (3) all use epithets that can be employed anywhere in the poem (what Parry calls "ornamental" epithets and I prefer to call "free" epithets); (4) all except two fill cola—let us for convenience call them the "major cola"—running from the trochaic caesura, the hephthemimeral caesura, or the bucolic diaeresis to the end of the verse; (5) and all, or virtually all, are economical: except when λευκώλενος Ἥρη and πότνια Ἥρη are extended, only once do we find both the same referent and the same meter (Κρόνου παίς overlapping πατὴρ ἀνδρῶν τε θεῶν τε), and this is an unusual case of alternative names to Ζεύς, with totally different connotations ("son" and "father"). Looking, on the other hand, at the 438 formulae that occur only once or twice, we note (1) that a distinct majority are noun-verb formulae, (2) that a great majority fail to place the name in one of the cola just enumerated, (3) that most continue to employ the basic name but no longer put it at the L-point, (4) that there are quite a few which use epithets restricted to certain parts of the poem, or certain circumstances (such as Θέτις κατὰ δάκρυ χέουσα), and (5) a fair number overlap in both referent and meter. They do not possess the five qualities that characterize frequently-occurring formulae.

More significantly, these qualities could well be the reason why some formulae occur frequently. For instance: a noun-epithet formula, if it has a free epithet, may appear any time a character is mentioned in the nominative, while a nominative noun-verb formula is used only to describe a specific action. Speaking, moreover, the commonest action, is usually expressed in a verb-formula complemented by a noun-epithet. Noun-epithets are thus more widely useful semantically. Again: a free epithet is usable everywhere. Achilles' feet do not become slower when he is sitting down; you can call him "swift-footed Achilles" whenever you like, provided that he is not hobbled or crippled. Agamemnon is "wide-ruling" until he is actually deposed. The glory of the free epithets is that the audience can always hear them without trouble or embarassment (see Appendix II, 390ff). Hence the noun-formulae that contain them occur often—again because they are so useful semantically. Further, the L-point is usually the place where a word falls most naturally (see 374 *infra*). Therefore a formula that puts the name at the L-point will be much easier to use; and the easier it is to use, the more frequently will it occur.[28] Such noun-formulae are useful metrically. And again: the reason that the frequent formulae are found only in the three major cola is that they dovetail with frequent verb-formulae (*e.g.*, τὸν δ' ἠμείβετ' ἔπειτα), the two together making up one whole line of verse. Indeed a list of noun-formulae falling after these frequent verb-formulae is very similar to a list of frequently occurring noun-formulae. Once more we see that such noun-formulae are useful metrically.[29] Finally, the frequent formulae display economy (with the one exception, they do not overlap in meter and referent simultaneously) because each is the one normal way to refer to its character in that metrical slot, and has no real competition. If a colon is frequently employed, and the referent frequently mentioned, then the one formula that fits that colon will inevitably be frequent.

Given the causal relationship between frequency and these five qualities—let us call them "RF-qualities"—it should be possible to utilize them to help us solve another problem: how many times must a formula occur to be called an RF? We implicitly assumed that 9 times was frequent when we singled out formulae occurring at least this often as a group to study for its RF-qualities. At the same time, we implicitly assumed that once or twice constituted "infrequent." But what of the formulae that occur from 3 to 8 times? To which group do we assign them? We might choose a point midway, and stipulate that RF must occur at least 6 times. Or we

[28] For a good discussion of localization and formularity, see Higbie (*supra* n.11).

[29] If we added the 3–8 colon to the major cola, as Professor Edwards invites us to do, we would be able to regard RF for Telemachus and Idomeneus as normal. This would certainly be a reasonable thing to do; why should these two be forced to seem eccentric merely because their names cannot fall at the end of the verse and thereby fill the cola I have called major? Moreover their RF can be complemented by a frequent verb-formula (ἄντιον ηὔδα) obviously designed to remedy this deficiency. Nonetheless, after much hesitation I have let the number of major cola remain at 3, partly because so large a majority of frequent formulae fall in them, partly because it is useful in this paper to remain consistent with Parry's ideas when the cost of doing so is so easily measured. I need hardly point out that to include this fourth colon would strengthen my overall argument that regular formulae fall in major cola. The number of IF in major cola would rise somewhat too, but neither the look of Graph III nor the arguments on 387f *infra* would be seriously affected. And the essence of Parry's argument would remain unaffected: we would merely have a fourth formula-type and a fourth complementary verb-formula.

can call upon the five qualities to help provide a more precise notion of "frequent."

As it happens, we find that for each of the qualities there is an exact minimum number of occurrences below which formulae begin to lack that quality. Three of the qualities—noun-epithetic syntax, occurrence in major cola, and placement of the noun at the L-point—disappear increasingly as the number of occurrences decreases below this minimum. For the other two the number of failures is too small to allow us to speak of such a linear relationship. But for all five qualities it is reasonable to say that when they begin to fail, their causal influence is no longer being felt so fully: below the minimum point, other forces begin to operate which cause formulae to occur less frequently. Below the minimum-point for noun-epithets, for example, formulae include verbs as well. Noun-verb formulae for nominative proper nouns never occur more than 5 times, but at that level the influence of such formulae is beginning to be felt, and below that level it is felt increasingly (see Table III and Graph II). The higher the percentage of noun-verbs, the lower the number of occurrences per formula. The reason for this, as we noted, is that noun-verbs tie the character down to a specific action which, though it may occur frequently, is not likely to occur frequently with any one character. The acts that each character performs often, especially the act of speaking, are usually expressed in specifically verbal formulae complemented by noun-epithets.

The minimum numbers for our various qualities are not the same for each; the technique of epic composition is not that tidy. They range from 10, for occurrences at the L-point, to 8 for the major cola, to 6 for noun-epithets and free-epithets, to 3 for economy (see Appendix II and Graphs II–IV). There is every reason to expect this variation: from the point of view of the exigencies of composition, the desirability of economy is simply greater than the need for a formula to locate the name at the L-point. But it means that our choice of a minimum number as a dividing line between RF and IF is slightly more arbitrary than we might like. And although I had recourse to mathematical techniques to determine the minimum for 3 of the 5 qualities, I eschewed multiple regression to facilitate the choice of the overall minimum and relied upon a more subjective judgment; I was persuaded that a minimum of 6 occurrences would include as many formulae as possible without seriously weakening the uniformity of the RF-set. This may mean that some inappropriate phrases were included, but there cannot be many (see the list in Table VI).[30] A full discussion of the arguments, mathematical and otherwise, will be found in Appendix II.

A small percentage (3.5%) of infrequent formulae display all five RF-qualities, and a larger number display some of them. This should not be dismaying. The distinction between RF and IF is one between basic building blocks answering steady needs, and more specialized materials used ad hoc. The laws of chance require that occasionally a formula that meets an ad hoc requirement could also meet a steady need. Moreover, some IF may in fact be basic building blocks which, by accident or design, Homer simply happened to use more rarely.

We can now state the Trojan deficit more precisely: they lack regular formulae. Regular formulae in the nominative occur a minimum of 6 times: the Trojans have no formula in the nominative occurring more than 4 times. Regular formulae display the RF-qualities: the Trojan formulae are typical of infrequent formulae, and thus deficient in these five qualities.[31]

2. *The RF-qualities and Milman Parry*

Before searching for the cause of the deficit, it behooves us to revert to the ideas upon which Parry built his arguments for the traditional nature of nominative proper-name formulae, of which—apart from localization—our RF-qualities are largely a restatement. We need to show that Parry established the antiquity not so much of individual formulae as of systems, and that these systems accommodate precisely those formulae that we are labeling "regular."

Parry at times gives the impression that most nominative formulae are expected to possess the features that we are calling RF-qualities. Formulae ought to answer to steady needs, and these quali-

[30] On the reasons for not choosing a minimum percentage of a character's appearances, see Appendix II (393 *infra*). The idea of a minimum number has been used before, but only in order to determine whether a phrase should count as a formula: see Hainsworth 40 and n.3.

[31] It would of course be possible to redefine the term "regular formula" to mean "formulae (not necessarily frequent) with all (or four, or three) of the RF-qualities." Of their 20 formulae, the Trojans display no nominative formula with all five features, but they have three with as many as four, and several more with three. If we counted all such formulae as regular, the Trojans would still show an unusual deficit, though it would be a little harder to pinpoint. And we would still face the question, why does each of their formulae occur so seldom? We included frequency in the definition of RF to help solve this problem.

ties define the needs that really are steady. But the facts are otherwise: even of the noun-epithetic formulae, the majority do not possess all the rest of the qualities, some possess only one or two, and the less often a formula occurs, the more likely it is to possess fewer of them. Not all needs are equally steady, and rare needs lead to unusual formulae. Parry himself insisted that a phrase may occur only once and still be a formula, because the occasion for using it may arise only once in 12,000 or 16,000 lines (*MHV* 8f, 312f). Most such occasions are marked by the absence of the RF-qualities.

If a formula occurs infrequently and lacks most of the qualities, we cannot declare it untraditional on theoretical grounds. It may have met some earlier poet's rare needs. On the other hand, a good percentage of the 291 one-time formulae we have counted for the 38 characters in the nominative must have been invented, or at least re-invented, by Homer himself. Meillet's view that only the poets before Homer coined formulae is hardly persuasive: the generic epithets existed mainly for the sake of free combination with proper names when formulae were needed.[32] μεγάθυμος, for example, occurs in various grammatical cases in 46 different formulae with a wide variety of names. To say how many of these and similar phrases were used before Homer is quite impossible; but there are far too many to make it plausible that Homer learned them all individually. Why should he? The poet is much better served if he learns the epithet and the kind of circumstance in which it will be useful. Such circumstances may have been common or rare: they may have been encountered by earlier poets, who will thus have coined what Homer coined again; or they may have resulted from Homer's own conception of how he wanted his poems to take shape. It is likely, therefore, that Homer himself created—perhaps not for the first time—a number of those formulae that Parry attributes to analogy (*MHV* 175–84). Furthermore, Hoekstra has demonstrated how Homer has modified formulaic prototypes.[33]

[32] A. Meillet, *Les origines indo-européennes des mètres grecs* (Paris 1923) 61, cited by Parry, *MHV* 8f. Some of the generic epithets, of course, became fixed parts of frequently occurring formulae which have a good chance of being pre-Homeric: δῖος Ἀχιλλεύς, βοὴν ἀγαθὸς Διομήδης, κτλ. But most regular formulae have distinctive epithets, and the number of regular generic formulae is small compared to the 197 generic formulae that occur only once.

[33] A. Hoekstra, *Homeric Modifications of Formulaic Prototypes* (Amsterdam 1965). Modifications due to linguistic innovation can be studied on the basis of the statistics given by R. Janko in *Homer, Hesiod and the Hymns* (Cambridge 1982).

Such modifications are innovations, if not coinages. Hainsworth-alterations are a form of innovation as well, and the flexibility they permit gives the poet freedom to do what his predecessors may not have been able to do.

Even the frequent formulae, which for the most part do possess the RF-qualities, are not necessarily ipso facto traditional, though many of them can be declared traditional on other grounds. Lord, Russo, Nagler, Hainsworth, and others have suggested a variety of ways in which formulae are generated—in which Homer himself has generated formulae—and their conclusions are scarcely confined to rare formulae (*supra* n.14).

The RF-qualities identify the formula systems. It is the system that embraces the formula-types—that is, the noun-epithet phrases that fall into what I have called major cola. (Contrary to Parry I do not count the 1–5 colon as major; only two of the 67 RF occupy it.) It is the system that is characterized by what Parry calls ornamental and I call free epithets (see *supra* 364 and Appendix II.1). It is the system that is "widely extended," the system that is marked by "great simplicity." (Again I have altered a Parryan concept: economy is consistent with metrical overlap when the overlapping is due to a generic epithet, because no new tool has been added to the poet's kit: Appendix II.1.) It is the system that is "traditional" (*MHV* 17). And indeed Parry has demonstrated, I think beyond question, the traditionality of formula systems, but not of each formula in the system. Of course it stands to reason that Homer inherited many of the individual formulae along with the systems, but that cannot tell us about any one formula in particular. We must, in every instance, examine the instance.

The systems themselves do not guarantee the age of a given formula; and the many formulae that lack RF-qualities and therefore do not belong to them cannot, a fortiori, base any claim to traditionality on the systems. While our statistical arguments provide verification of what is essential in Parry, they reinforce two criticisms: Parry's systems do not include most of the infrequent formulae, and they do not guarantee the traditionality of any individual formula, however frequent.

The individual regular formulae in Homer, whether inherited or coined, ought to be seen as Homeric exemplifications of an age-old technique. As such, they make up about one-half of the poet's tools for referring to characters in the nominative case. Much of the other half consists of the generic adjectives, nouns, and verbs which, when combined with names, generate the majority of the IF. The rest of the basic tools are the distinctive (non-generic) IF, coined or inherited, which Homer has elected to keep in his tool kit to meet rarer needs. The presence of IF, as of generic modifiers and distinctive IF, is a characteristic of the traditional technique, and would be even if none of the IF found in Homer were traditional. The very nature of the hexameter line, the localization—low or high—of the various names, and the need for relatively high formularity make it certain that the traditional poets had IF. Many, probably most, of the generic modifiers are traditional; but even if they were not, the earlier poets will certainly have had generic modifiers of their own, used to coin formulae that meet less common needs. If none of Homer's exemplifications of the technique—his RF, his distinctive IF, his generic modifiers—were traditional, the technique itself would still be.

We spoke of justifying Parry, and in doing this we made use of the RF-qualities that Parry used to define his systems; it is therefore important to stress that the justification is not circular. We did not derive the RF-qualities from Parry but from examination of the nominative proper-name formulae we identified as occurring frequently. Only then did we point out that these features are much the same as those upon which Parry based his concept of the formula system, and show that frequent formulae fit into Parry's systems. But even if we had chosen the RF-qualities from Parry, we would then have been testing Parry's ideas, showing that they work for formulae that occur more than six times and begin to fail below that number. Only if our choice (*supra* 347–51) of what to count as a formula for nominative proper names were determined by Parry's ideas—by the RF-qualities—would we beg the question. Of course we were influenced there by one of these qualities (noun-epithetic form), but we did not limit ourselves to noun-epithets; we counted noun-verb phrases, and ruled out other combinations on non-Parryan statistical grounds. And we did not bring in economy, or major cola, or ornamental epithets, or occurrence at the L-point, in order to decide what to count. We merely observed that these are all features of frequently-occurring formulae; our formulae were chosen with other criteria.

It is, on the other hand, advantageous to our investigation that our RF-qualities are also the *definientes* of Parry's systems. Most characters are referred to by regular formulae, and are therefore handled by the traditional technique. The Trojans are not. Since it is impossible to doubt that the Trojans were a part of the tradition, it is all the more perplexing that they are not handled in the expected fashion. This will lead us to the hypothesis that the Trojans once did possess regular formulae—but that is a later step in the argument. Let us concentrate for the moment on their deviance.

3. *Explaining the Trojan deficit*

We begin with another brief look at the RF and IF that we have isolated by setting a minimum for RF at 6 occurrences (see the lists on Table VI). Most (55 out of 67, or 82%) of the RF possess all of the RF-qualities. Of the remaining 12 formulae, 11 lack just one quality; only one RF (1.5%) actually lacks as many as two of the five. (I am not counting as a lack the cases where the formula could not possess the quality, as when formulae that do not use the basic name a fortiori do not put it at the L-point.) On the other side: a few of the IF (19) have all five qualities, while the vast majority (520 out of 539; 96.5%) lack at least one, and most lack several. The exceptions begin in earnest at 5 occurrences (see the list of 4- and 5-occurrences IF on Table VI). This surge of exceptions, together with the virtual uniformity of the RF, allows us to determine a persuasive minimum number at or near 6.

Equipped with logically satisfactory groups of RF and IF, we can now proceed to divide the formulae for each of our 38 characters accordingly. We take the regular formulaic occurrences (RFO) of each one as a percentage of the total formulaic occurrences (TFO) and call this that character's regularity. We avoid taking RFO as a percentage of TO, because that would put the regularity at the mercy of the formularity, which we have already evaluated. A character with 80% formularity, half of whose formulae are RF, would have the same regularity as a character with only 40% formularity, all of whose formulae were RF, and we should have lost some important information. We then proceed to calculate regularity for the basic name and for all the names. The Trojans, of course, have zero regularity.

In order to evaluate this finding, we attempt to divide our 38 characters into classes with uniform regularity, hoping to isolate metrical or semantic similarities and disparities among them, as we did successfully with formularity. If the Trojans deviate significantly while all the other characters have a normal regularity, and if all possess some feature which the Trojans lack, we have not only demonstrated their deviance but are well on the way towards explaining it. But we find, somewhat surprisingly at first, that while the Trojans do indeed deviate, we are unable to form uniform classes for the others—or rather that we require at least 6, no one of which is large enough to be safely called normal. There must be a reason for this: another variable that is disturbing the uniformity.

Naturally we suspect meter. We can measure its effect on the basic names, at least, by isolating the regularity and localization for each of our characters, just as we isolated localization and formularity (*supra* 358f). When we compare the figures for localization and regularity on Table IV, we note that both vary a good deal, and indeed seem to rise and fall together. We therefore construct a graph for 22 of the 23 characters on Table I, with x as the localization and y the regularity (see Graph V). We omit the Trojans, with their zero regularity, since we know that they are abnormal and we are seeking a measure of normal behavior. We eschew Table II to avoid cases such as Paris' where the difference, possibly due to chance, between 5 and 6 occurrences makes a difference of 28% in the regularity. The points appear to form a good linear curve; linear regression gives us the equation $y = .87\,x + 3$, with a Pearson correlation coefficient of .92, a very high figure; the P-value is .0001, making correlation virtually certain. As a check, we eliminate the five characters mentioned in Appendix II who have fewer TFO than the Trojans, and recalculate. This time, $y = .78\,x + 10$, with a Pearson correlation coefficient of .93, an even higher figure; the P-value is still .0001. The root-mean-square residuals (roughly, the average distances of points from the curves) are 9.7 for the first curve and 8.2 for the second, both reasonably low figures. The most striking departure from them is Hera's at nearly twice the mean residual from the second curve; Hera has exceptionally high regularity, but not enough to be declared deviant. Both curves permit us to state, with real confidence, that the more often a character's basic name falls at the L-point, the higher will be its regularity. And the reason that we cannot form meaningful classes with uniform regularity is that the figures for localization are distributed continuously from 27% to 99%: as the localization changes steadily, the regularity follows suit.

The relationship between regularity and localization we have seen before. When we made our first observations of frequent formulae, we noticed that almost all put the basic name at the L-point. We also saw that as formulaic frequency decreased below 6 occurrences per formula, the percentage of occurrences at the L-point decreased with it (*supra* 366 and Graph III), with the result that a large number of IF (60%, in fact) do not put the name at the L-point. It follows that the greater the percentage of RF that a Homeric character possesses, the more highly localized its basic name will be; the greater the percentage of IF, the more likely that its localization will be lower.

We appear to have a cause-and-effect relationship beween frequency and localization; but which is the cause and which the effect? On Table IV we can compare localizations of the various characters with the localizations of words of the same shape on O'Neill's tables. We note some deviations, but many more similarities.[34] Since O'Neill's figures are for all the words, not just proper names, it seems likely that on the whole the proper names fall where all words of the same shape fall. They are obeying some global rule of versification, not merely occurring where they do because the frequent occurrence of certain formulae is putting them there. This is a strong indication that localization is the cause, regularity the effect. A highly localized word will build up many formulae at the L-point, and a high percentage of regular formulae will result. Of the total of 22 characters on our curve, 20 have an L-point and 15 display a localization that we would have predicted from O'Neill.

Still, we notice a few exceptions (the figures for the actual localization, as well as O'Neill's figures, may be found on Table IV). Strange-looking RF, such as μητιέτα Ζεύς, probably twice created an unusual L-point (final position) for Zeus, and RF caused an unusually high percentage of L-point occurrences for Hera, Nestor, and Telemachus. On the other hand, RF may have given Eumaeus and the Suitors a lower than expected percentage, since each has an RF that does not fall at the L-point, and if we adjust for these, the percentages are about the same as O'Neill's. The other two exceptions, however, are only apparent: Menelaus twice—once in each poem—looks more deviant than he is. He (like Penelope) has a short final syllable: O'Neill counts such words as having a long final syllable when they come at the end of the verse, and a short or a

[34] O'Neill (138–48) does not break down localization figures for nouns, subject nouns, and names; these might well differ from the figures for other parts of speech. Subsequent investigation must take into account the updated figures of J. T. McDonough, *The Structural Metrics of the Iliad* (diss.Columbia 1966), and the arguments of Bakker (*supra* n.8) 165–86.

long otherwise. Menelaus therefore has two of O'Neill's metrical shapes, not one; he is more free to wander than if his final vowel were long, and therefore has a lower localization than the true ionics a minore. Thus we can count just five cases where regularity can be shown to have influenced localization, either in the determination of the L-point (Zeus in each poem), or in the percentage (Hera, Nestor, and Telemachus).

When we look more closely at just how localization works as a cause, we notice at once that it does not work alone but is joined by formularity and economy. The poet, we recall, tends to be formular about 70% of the time with individuals and 45% of the time for groups. Consider a hypothetical word with high localization, *i.e.*, a word confined mainly to a given spot in the line. Practically speaking, there are only a certain number of formulae that can fit a word into this spot without beginning to overlap each other. Some overlaps are tolerable, of course, and require no extra tools (see Appendix II); but there are not a great many of these. It follows that if this highly localized word occurs frequently, the formulae that place the word into this spot are going to appear over and over again, if the word observes normal formularity. Hence we shall find a large number of RF. But the word rarely falls anywhere else; hence we shall find few IF.

Consider now a different hypothetical word, one that wanders quite often from the L-point into other places. If this word occurs frequently and observes normal formularity, we are bound to find some formulae often repeated at the L-point; these will be our RF. But the percentage at the L-point is lower than with the first word, and the second word often occurs in different places in the line. If normal formularity is to be maintained, formulae must occur at the other spots. But these are by definition less popular spots, and there is usually more than one of them, so that the formulae occurring there will almost always be infrequent formulae. For words like this, the number of IF will necessarily be higher and the percentage of RF necessarily lower than for words of the first kind. And the decrease in RF is directly correlated with the decrease in localization.

We should keep in mind that the percentage of regular formulae is the result of all three phenomena: localization, formularity, and economy. Without the tendency to localize, a word could vary in position and not occur in any one place often enough for RF to develop. But if its wandering is limited by its shape, and if it is used frequently, RF can readily come into being. Without formularity, all the occurrences could be non-formulaic. With it, a name with high localization is forced to develop formulae at the L-point and thus RF, while a name with lower localization is forced to meet its quota of total formulaic occurrences by the use of IF in the less favored positions. Without the principle of economy, we could place many different overlapping formulae at the L-point, never using any of them often enough to develop RF.

The localization/regularity curve is thus an entirely comprehensible phenomenon. It indicates that if a word localizes more than 20% and has more than 26 TF, it ought to have RF; otherwise it will be more than twice the mean residual—the average distance—of points from the curve, and this is too far. The only word-shape that localizes as infrequently as 20% is the short monosyllable. All other shapes should generate RF if the number of TF is high enough.

What, then, can the curve tell us about the Trojans? With their zero regularity, they would fall reasonably near the curve only if their localization were low: preferably 10%, no more than 20%. If it were 15%, say, we would have a metrical answer to our initial query: the Trojans have no RF because the word wanders about the line so freely that RF are not developed. But the localization of the word Τρῶες is in fact 43%; ideally, from the curve, the Trojans should have 41% regularity. They are more than 4 times the root mean square residual distant from this point, an enormous deviation. (Using the curve for 17 characters, the curve that lacks the 5 characters with fewer TF than the Trojans, we find the Trojans 6 times the mean residual away.)

We can now state precisely how the Trojans deviate: it is not simply that they lack RF, but that their lack is inconsistent with their localization. And we can also affirm that it would be unwise to attribute the Trojan deficiency in RF to the unusual meter of the word Τρῶες. With high initial localization we might well expect to find at least one RF running from 1–5, such as Ἕκτωρ Πριαμίδης, or Παλλὰς Ἀθηναίη in the *Odyssey*: the existing Τρῶες ὑπέρθυμοι would fit, or the existing Τρῶες ὑπερφίαλοι, moved backwards into initial position. Or perhaps Τρῶες, which can wander about the line, might have localized in the middle of it, as do Τηλέμαχος and Μνηστῆρες, and built up RF there. Granted, such RF might well not have fallen at the major cola; they might have been exceptional in that respect. But Telemachus' chief RF is similarly exceptional; so is Antinous' and Idomeneus', whose names have much the same meter as Telemachus'. Unusual meters can appropriate different cola for RF.[35] It is also puzzling that Τρῶες ἀγαυοί, which falls at the bucolic diaeresis, is not more common—unless perhaps the adjective suggests a moral similarity to the Μνηστῆρες ἀγαυοί that the poet may not wish to emphasize frequently.

Is there any way to avoid the inference that meter is not responsible for the Trojan deviance? Consider the argument that Τρῶες has a challenging shape: as a word capable of trochaic or spondaic scansion, it is freer than its 43% localization would suggest. Since it occupies 8 positions in the line, the same as Zeus in the *Odyssey*, and since Zeus has 29% localization there, we might therefore amend the Trojan figure to 29%. But we cannot put it lower, because Τρῶες is not freer than Ζεύς; and at 29% the Trojans are still too far from the curve. Again, the word is hampered because it does not fall in final position, the normal L-point for a spondee. It is no more hampered, however, than Τηλέμαχος, Μνηστῆρες, Ἀλέξανδρος, or Πρίαμος, all of whom have basic-name RF. Let us concede that the word Τρῶες is so challenging that any one poet might have failed to develop RF for it. But not the entire epic tradition.

The case of Μνηστῆρες is exceptionally revealing. The word is at least as awkward metrically as Τρῶες. Like the Trojans, the Suitors are a group and have low formularity. But though they occur much less often than the Trojans, the Suitors have an RF while the Trojans do not. And in the phrase Μνηστῆρες ἀγήνορες, which occurs 4 times, they might have had another RF had they been mentioned as frequently as the Trojans. This phrase is a far more typical noun-epithet formula than the two Trojan formulae that occur 4 times (καὶ Πρίαμος καὶ λαός and Τρῶες ... ἀολλέες).[36] The Trojans' low regularity is exceptional, and meter does not appear to be the culprit. Whatever the Trojan metrical recalcitrance, the generations

[35] Since Telemachus, Idomeneus, and Antinous fit into what we might have made the fourth major colon, from 3–8 (*supra* n.29), their RF should perhaps not be called exceptional. On the other hand, they display only 3 out of the 67 RF. The low number seems testimony to the fact that the meter of these names is unusual; that the RF exist at all testifies to the poet's capacity to adapt to such problems.

[36] The second of these can reasonably be considered a noun-verb formula in three of its occurrences, but not in the fourth (see Table VII). Since we are concerned with the weakness of noun-epithets for the Trojans, it seems advisable to count whatever meets our criteria; if we considered Τρῶες ... ἀολλέες as a noun-verb, the Trojan formularity would remain the same, and the noun-epithets would look even more forlorn.

of poets who must have composed poetry about them should have found the corrective. To discover what is to blame, we must examine the Trojan semantic set itself for other signs of deviance.

IV. The Trojans

As we have seen (*supra* 344), several noun-epithet formulae for the Trojans include harshly condemnatory epithets similar or identical to those used of the Suitors. Homer avoids these when speaking in his own voice. The implication is that the poet is himself sympathetic to city. He is composing an *Iliad*, an Ilios-poem, and Troy is one of his tragic heroes. We cannot elaborate this view and its ramifications here, but I should like to discuss briefly the hostile epithets.

The most important are ὑπερφίαλοι and ὑπερηνορέοντες. The adjective ὑπερφίαλος is used of Zeus by an angry Hera (*Il.* 15.94), of Diomedes by an angry Ares (5.881), of Priam's children by a hostile Agamemnon (3.106), of the crazed Ajax by Menelaus (*Od.* 4.503), of some of the Phaeacians by Nausicaa, warning Odysseus (6.274), and of the Cyclopes by Homer himself, in condemnation (9.106); it is rejected as inappropriate to his θυμός by Menelaus (*Il.* 23.611). Otherwise it is confined to the Trojans and the Suitors: to the Suitors by Homer and others; to the Trojans, by a hostile Athena (*Il.* 21.414), a hostile Poseidon (21.459), a hostile Achilles (21.224), and a violently antagonistic Menelaus (13.621). The adverb ὑπερφιάλως is used of anticipated Achaean criticism by Idomeneus (*Il.* 13.293); of anticipated Trojan recalcitrance, by Hector (18.300); and of Telemachus by Antinous (*Od.* 4.663) and Eurymachus (16.346) Otherwise it is applied only to the Suitors. Similarly ὑπερηνορέοντες, used of Deiphobus by an angry Meriones (*Il.* 13.258), is otherwise confined to the Trojans collectively (by an angry Agamemnon, 4.176) and the Suitors. Both words are used very carefully, so that we never feel that Homer himself is attributing to the Trojans the qualities the adjectives convey. A third epithet, φιλοπτόλεμοι, which occurs with the Trojans in the dative, is just as inaccurate in the context of the *Iliad*. It too is avoided by Homer speaking in his own voice.[37]

[37] φιλοπτόλεμος is used of the Trojans three times: once by Achilles; once by Hector, who is at times fond of war; and once by Homer, in a passage where he is looking through Hector's eyes (17.194). Of the other adjectives that have been taken pejoratively, ἀγήνορες and ἀγαυοί will be discussed shortly; ὑβρισταί is used

These noun-epithet formulae are therefore most remarkable. They can be employed only with great care and constraint; their epithets are by nature particularized, and indeed seem to violate the very spirit of the ornamental epithet as Parry conceived it. Now, we have just seen that the Suitors share ὑπερφίαλοι and ὑπερηνορέοντες with the Trojans; they share two others as well: ἀγαυοί and ἀγήνορες. Indeed, the Suitors have all four of these adjectives as epithets in regular formulae: ἀγαυοί in the nominative and accusative, ἀγήνορες in the accusative, ὑπερφίαλοι in the dative, and ὑπερηνορέοντες in the genitive, with νέων and ἀνδρῶν. In addition, they have ἀναιδέσι as an RF-epithet in the dative, a word as powerfully negative as ὑπερηνορέοντες and ὑπερφίαλοι. The force of ἀγαυοί and ἀγήνορες is disputed: Page (*supra* n.2: 251f) includes them among terms conveying arrogance; Cunliffe, LSJ, and the *Lexikon des frühgriechischen Epos* find ἀγήνορες ambivalent and ἀγαυοί positive. It seems improbable that the Suitors should be the objects of formulaic commendation; but rather than argue with the lexicographers, let us set these two words aside. There is no disputing the other three: they are words that blame, deplore, condemn. The "essential idea" conveyed by μνηστῆρες ὑπερφίαλοι ought not to omit the force of the adjective; in my reformulation of Parry's definition these RF denote the Suitors but have a powerfully negative connotation, depicting them as a villainous lot. Yet because we all agree on the moral character of the Suitors as a group, these epithets are free of context; the formulae in which they occur need not be, and are not, employed with any more constraint than any other RF. Achilles is swift-footed whatever he does; whatever they do the Suitors are devoid of moral feeling. Can it be that, traditionally, the Trojans were as villainous as the Suitors, but that the *Iliad* disagrees? That the tradition used Τρῶες ὑπερφίαλοι and ὑπερηνορέοντες as regular building blocks, as RF, but the *Iliad* relegated them to IF with highly restricted use?

If so, the traditional poets shared the Achaean attitude towards

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once, by a violently hostile Menelaus, while ἀγέρωχοι, μεγάθυμοι, μεγαλήτορες, and ὑπέρθυμοι are given a generally good sense by Cunliffe, LSJ, and the *Lexikon des frühgriechischen Epos*. Page (*supra* n.2: 252) asserts that all these adjectives emphasize "a single quality" and identifies that quality as arrogance. This cannot be right for the generics μεγάθυμοι and μεγαλήτορες; the ὑπέρ in ὑπέρθυμοι may at times be felt negatively, despite the word's normal positive force; the meaning of ἀγέρωχοι is apparently uncertain.

the Trojans and handed on to Homer a set of formulae that he could not employ as RF because he looked upon the Trojans with much greater favor than they did. The consequences of Homer's careful employment of the hostile epithets are therefore essential to an understanding of how the oral poet worked.

First, we have already maintained that the the poet and his audience must have been thoroughly alive to the meaning of the RF epithets.[38] They were chosen to be colorful—πόδας ὠκύς, βοὴν ἀγαθός, κορυθαίολος, ἐυκνήμιδες, περίφρων, κτλ.—and ubiqitously employable, just because the poets anticipated the attentiveness of their audiences. They may not always have been the mots justes, and in a few cases they appear to have been used either carelessly or ironically. But they were heard. Similarly, the epithets used chiefly as generics, sometimes in RF, mostly in IF, tend to be a little less colorful—just because they will not only be heard throughout the poem but will also be applicable to almost anyone in it. The obvious care with which Homer allots harshly indicting Trojan formulae exclusively to the enemy suggests that he assumed that the audience would pay attention if he used such a formula while speaking in his own voice. We see traces of the same care elsewhere: when he substitutes "great-souled Achilles" for "swift-footed Achilles" to avoid a harsh echo (23.168);[39] when he refuses to say "moves the thick cloud cloud-gathering Zeus" (16.298; *cf. MHV* 187f); when he rejects the redundancy in "Of the Cretans Idomeneus, leader of the Cretans, was the leader" (2.645).

There are in fact two conclusions to be drawn here: the epic tradition constructed its formulae carefully, and Homer constructed his *Iliad* carefully. Both, I believe, are consistent with the assumption that the *Iliad* was orally composed. The principles of RF construction, and no doubt many of the formulae themselves, are very old. Regular formulae are the heart and soul of orality; whatever position we take on the question of Homer and writing, it would be rash to deny that composition with RF was oral in origin. If it is a principle of RF construction that the epithets should be

[38] *Supra* 346, 364, 369; Appendix II.1. See also the important studies of the epithets by W. Whallon, *Formula, Character and Context* (Cambridge [Mass.] 1969); P. Vivante, *The Epithets of Homer* (New Haven 1982); N. Austin, *Archery at the Dark of the Moon* (Berkeley 1975) 11–80; and E. Bakker, "Peripheral and Nuclear Semantics in Homeric Diction," *Mnemosyne* (forthcoming).

[39] See Hainsworth 9 n.2, citing G. Beck, *Die Stellung des 24. Buch der Ilias* (diss.Tübingen 1964) 40 n.2.

universally usable, then it is the assumption of oral composition that the audience heard the meaning of the epithets. When Homer makes the same assumption in using the savage Trojan formulae, his thinking is quite in keeping with that of an oral poet.

The theory of oral composition has unfortunately been tied to the view that composition in performance restricts the poet's freedom to say what he wants in any way but a formula: the oral poet "expresses only ideas for which he has a fixed means of expression" (*MHV* 270). Perhaps Homer *has* a fixed means for almost all of his ideas; but even with a radical liberalization of our criteria for nominative naming formulae, it is simply not the case that he always *uses* one. He is free to refer to the Trojans in the nominative non-formulaically, and does so many times. It was this freedom that permitted him to use the harsh Trojan epithets carefully.

The conclusion that such freedom and such care mean that Homer must be a pen-poet seems to me wholly unnecessary. The consistency with which most of our characters are about 70% formulaic certainly suggests that maintaining a certain percentage of non-formulaic references was built into the technique, not accidentally achieved each time by a literate Homer. It is irrelevant that by adding minimal formulae we can raise the formularity in a number of cases: the technique allows for the cases where we cannot. It is hard to escape the conclusion that the traditional poet was expected to be able to compose non-formulaically, just as he was expected to pay attention to the meaning of his epithets.

As Hoekstra has observed (*supra* n.28: 7), the instrument upon which Homer played was a remarkable one. The *Chanson de Roland* is a wonderful poem, and Turoldus a great poet; but the instrument he played was much less subtle and complex than Homer's. The very length of the hexameter line; the fact of one, two, or three caesurae; the rich color, extent, and variety of the RF system; the huge array of generics—all these are part of Homer's inheritance not duplicated in my experience of the oral traditions of Europe. It takes considerable training and experience to play such an instrument at all. If Homer, as an oral poet, could master it, and if he was a great genius with a superb memory, there seems no good reason to think that he could not create a work of art as subtle and complex, as profound and beautiful as the poem of any pen-poet. Scholars may argue that writing was necessary to preserve masterpieces of such length as the Homeric epics. But however carefully constructed—however ποικίλα, καλά, δαίδαλα—we do not need to believe that writing was necessary to compose them.

APPENDIX I: Additional Remarks on Nominative Naming Formulae

1. *Syntactical Criteria*

We have argued (*supra* 349f) for the omission of name-plus-conjunction or name-plus-adverb phrases from our statistical counts. Another way of stating our argument for this omission is worth mentioning here. The phrase αὐτὰρ Ἀχιλλεύς owes most of its frequency to the fact that Ἀχιλλεύς is almost always found at the end of the verse, where αὐτάρ can readily precede it. Similarly, αὐτὰρ Ὀδυσσεύς, common in the *Odyssey*, occurs there only in final position. Names such as Τηλέμαχος and Ἥρη, on the other hand, which mainly localize elsewhere in the line, are found with αὐτάρ much less often. One of our equations indicates a weak but genuine correlation between formularity and localization; the second indicates high correlation between localization and regularity. These equations would be much less useful to us were we to build into them a formularity that appears to be a mere accident of the meter of some names but not others. For the same reason we cannot, in this study, declare instances of a single name, of just one word occurring in a fixed position, to be formulaic; we would jeopardize the statistics for those of our names that do not localize and whose meters elude fixity.

2. *Inexact repetition and unique formulae*

On 351 we insisted on a rigid definition of the phrase "exact repetition," and then went on to choose certain fairly elaborate criteria for what was to count as a unique formula. In order to make both aspects of this procedure clearer, it is useful to turn to J. Russo's extremely helpful arrangement of formulae on levels. Level 1 is the exactly repeated word-group; level 2 has one fixed term and at least one variable; levels 3–5 are based on structural and rhythmic patterns. These last three levels must be left aside in this paper, but we can readily employ levels 1 and 2, provided that we clarify some details.[40]

On level 1 we shall put noun-verb and noun-epithet groups exactly repeated. But what do we mean by "exact"? Russo himself allows for inflectional variation: the accusative form of a formula as well as the nominative, for example. Since we are counting nominatives, we shall naturally

[40] See J. A. Russo, "Homer's Formulaic Style," in *Oral Literature and the Formula*, edd. B. A. Stolz and R. S. Shannon (Ann Arbor 1976) 31–37, for a discussion of five possible kinds of formula, including his own structural formulae (syntactic-rhythmic patterns with no fixed terms), which derive from Parry's "general type of formula" (*MHV* 313). Level-2 formulae are the same as A. B. Lord's "formulaic expression" (see *The Singer of Tales* [Cambridge (Mass.) 1960] 47) and Parry's broken-line underlinings (301). Level 2, like the syntactical and rhythmic structures on levels 3–5, is generative: by containing variables, it permits the production of an indefinitely large number of phrases. But unlike formulae on the other generative levels, each formula on level 2 contains a visible signifier and hence lends itself to being quantified.

avoid accusatives; but what about the nominative form of an accusative formula: if it occurs only once, do we count it? And what of the other variations detailed by Hainsworth in his study of formulaic flexibility: the occurrence of the same words at different places in the line, or separated from one another, or inverted, and so on (*supra* 351)? When they occur only once in the altered form, they are not exact repeats; yet they do not belong on level 2, where one of the words is totally different: Μυρμιδόνες μεγαλήτορες/Τρῶες μεγαλήτορες. And to omit them altogether is to reject Hainsworth's highly persuasive arguments.

Our hesitation here may look at first like an exercise in pedantry: why not simply define "exact repeat" as "exact repetition plus Hainsworth-alterations"? But there are two good reasons for being cautious. First, we have already mentioned the importance of localization: much of our analysis will depend upon the precise place in the hexameter line occupied by the character's basic name, the noun whose meaning defines the semantic set. Formulae that put the noun in different places must therefore be distinguished from one another somehow, even when the words themselves are identical; and exact repetition must be taken to imply precisely the same metrical conditions. Second, we are trying to give a statistical meaning to the intuition that the Trojans lack frequently-occurring formulae. We need to know exactly how often a formula occurs. If, for example, we count all the Hainsworth-alterations of Ζεὺς Κρονίδης, we can observe the number of occurrences of this phrase go from 5 to 12. Should we compare it with another phrase repeated 12 times with no alteration? Or with one repeated 5 times? The Trojans have Τρῶες ... ἠδ' ἐπίκουροι, which I consider noun-epithetic and which, counting Hainsworth-alterations and doing a certain amount of juggling, could be said to occur 7 times in the nominative (see Table VII; it also occurs 4 times in the vocative). To declare this just as frequent as ἱερὴ ἴς Τηλεμάχοιο and commoner than ἀργυρότοξος Ἀπόλλων seems to me misleading; it obscures the lengths to which we must go to assign the Trojans a formula which might be called "regularly employed." On the other hand, Hainsworth-alterations must be counted as formulae. But how?

In "Formularity" I counted a Hainsworth-alteration of an exactly repeated phrase as a formula, but a different formula (*supra* n.5). This procedure is precise without omitting any phrases we might wish to retain, and has been adopted here, except in one particular. An extension of a repeated formula, since it contains the repeated formula, is itself an exact repetition as well as a modification, and hence will not be counted as a different formula. The phrase θεὰ γλαυκῶπις Ἀθήνη exactly repeats γλαυκῶπις Ἀθήνη, and cannot be called different, even though it is not the same either: if we want to know how often the formula γλαυκῶπις Ἀθήνη occurs at the end of the verse, we cannot fail to count it when it is extended. By the same reasoning, formulaic shortenings of extended formulae ought not to count as different.

To accommodate Hainsworth-alterations (and two other special cases) we must divide level 1 into two levels: exact repetition (level 1a), and somewhat inexact (level 1b). On level 1a, we insist that formulae have the same words, the same letters, the same syntax and sense, that they refer to the same character in the same poem, and that they occur in the same part of the verse. The only exception allowable will be when a single letter (such as τ' or δ') is inserted without effect on the meter of the words before and after the formula. On level 1b, we put phrases which are never exactly repeated, but are Hainsworth-alterations: alterations either of level-1a formulae, or of phrases which themselves occur only once but have the same syntactical structure as level-1a formulae. We also include the two special cases: phrases that occur only once but exactly repeat phrases in the other Homeric poem, and a few exact repetitions of parts of other (long) formulae.

The function of level 1b can be described as follows. We find θοῦρος Ἄρης, for instance, once in position 1–3 and once in 5–7. It is therefore what Hainsworth calls a "mobile formula," and as such occurs twice. For us, however, the precise position in the hexameter line which a phrase occupies is important, and so we cannot call this an exact repetition. But to omit it would be to repudiate Hainsworth without wishing to; we count it therefore as two different formulae. Similar are ποδήμενος ... Ἶρις, an instance of what Hainsworth calls separation, and Ὀδυσσεὺς δῖος (inversion). ὀξὺς Ἄρης and οὖλος Ἄρης, for example, are found only once, but resurface in the accusative (indeed ὀξὺν Ἄρηα is exactly repeated 6 times) and can without offense be placed on level 1b.

A phrase that occurs only once in the *Iliad* but also appears in the *Odyssey*, or vice versa, I usually consider to be a formula (a different formula, however, since we are regarding a character in the *Odyssey* as different from a character in the *Iliad*). 13 formulae fall into this category. (Of course the poems share many more phrases than this, but most of them occur more than once in both poems.) Here again, as with the question of deliberate echoing in the same poem, we have the problem of deciding between imitation and formulaic repetition.[41] In this case, however, I have counted every repetition as a formula.

A total of 394 formula fall on level 1: 317 on 1a, and 77 on 1b. The latter include 60 Hainsworth-alterations, 13 echoes of the other poem, and four formulae that repeat parts of extended formulae (an example is κούρη Ἰκαρίοιο, which appears once by itself and 4 times with περίφρων Πηνελόπεια).

The rest of the once-only formulae are found on Russo's level 2, which we must now examine. Here we put formulae with one fixed and one or more variable terms. Most of those in our nominative sets are instances of

[41] On deliberate echoing, most often by ring- and refrain-composition, see *supra* 347.

a name plus a generic adjective, generic noun, or generic verb that belong to more than one character and are usable of a number of characters: μεγάθυμος Ἀχιλλεύς, ἱερὸν μένος Ἀντινόοιο, Αἰνείας ... οὔτασε δουρί. In such formulae the fixed element is the generic word or words, the variable the name. The generic is normally bound to a fixed place in the line, though it is at times subject to Hainsworth-alteration. We count 197 such generic formulae that occur only once, *i.e.*, where a particular name is juxtaposed to a particular generic just once.

There are 17 other once-only formulae that belong on level 2 but whose fixed elements cannot properly be called generic. One is Αἰνείας Τρώων ἀγός (*cf.* Ἰδομενεὺς Κρητῶν ἀγός in the same part of the line), where we might perhaps call ἀγός generic, but not Τρώων ἀγός, which is *hapax legomenon*. Antilochus shares Νηλήιος with his father; we can hardly call this generic, but most scholars would call it formulaic. Ἄρης ἐγχέσπαλος shares its epithet with no other god, but with a mortal; there are 9 other such cases. Similar is στεροπ-ηγερέτα Ζεύς (*cf.* νεφελ-ηγερέτα Ζεύς), where one word and part of another are fixed; we also have χαλκο-κνημῖδες Ἀχαιοί (*cf.* ἐυ-κνημῖδες). Finally, in Αἴας Τελαμωνιάδης and two other cases, two names for the character are combined, each having its own formulae in addition. Each name could be regarded as fixed or variable.

Our characters display a total of 291 once-only formulae: 197 generic formulae (formulae with generic epithets) and 94 distinctive formulae; the latter include 60 Hainsworth alterations, 13 echoes of the other poem, 4 that repeat parts of long formulae, and the 17 quasi-generics just discussed. This is nearly half the total of 606 different formulae (539 IF plus 67 RF). By employing these criteria, we can endorse Parry's position that a phrase can occur only once and still be a formula, without sacrificing statistical precision.

When a name is combined with another name, we get a doubling phrase, sometimes formulaic. Doubling phrases are not easy to classify as formulae for a given idea if their only formulaic quality is their conjunction with the name for the other idea. Ἀθηναίη τε καὶ Ἥρη, for instance, is exactly repeated 6 times; it is obviously a formula; but it is only formulaic for the two ideas taken together. Yet we can hardly call it non-formulaic. Hence I have decided simply not to count it at all, either as a formula or as a non-formulaic occurrence. It is a non-voting member of each semantic set. But Ζεὺς τ' αἰγίοχος καὶ Ἀθήνη I count as formulaic for Zeus (not for Athena), on the grounds that the epithet makes that portion of the phrase a Zeus formula. A few phrases, moreover, seem to be doubling phrases but have an essentially singular sense and are counted among noun-epithet formulae: Ζεὺς (Ποσειδάων) καὶ θεοὶ ἄλλοι, which are generic formulae where the phrase καὶ θεοὶ ἄλλοι has the function of a generic epithet; Τρῶες καὶ Τρώων ἄλοχοι, Τρῶες καὶ Δαρδανίωνες, Τρῶες ... ἐπίκουροι, even Τρῶές τε καὶ Ἕκτωρ; but not, of course, Ἀχαιοί τε

Τρῶές τε. The Trojans are rich in these doubling phrases. I have counted them in the Trojan set whenever they occur on level 1 and the referent is the Trojans in either the broad sense (the people on the Trojan side) or the narrow (the male citizens of Troy-city)—*i.e.*, wherever the signifier is essentially collective rather than disjunctive. Without them the formularity of the Trojans becomes deviantly low. Of course deviantly low Trojan formularity is easy enough to understand on the basis of my final conclusion, that Homer drastically restricted the use of some of the Trojan formulae he inherited. He avoided his inherited regular formulae, and so the Trojan formularity dropped off. But this leaves a question: if Homer reduced the frequency of some formulae, why would he not use others more, if they existed or could be invented, as the occurrence of these doubling phrases apparently indicates that they did or could?

Also problematic are phrases with ἄλλοι. This word alters the identity of the referent, just as so many doubling phrases do: ἄλλοι Τρῶες is a smaller group than Τρῶες, and the adjective has a radically different sense from an ordinary epithet. On the other hand, it is hard to rule out ἄλλοι Τρῶες ἀγαυοί as a Trojan formula, since Τρῶες ἀγαυοί in itself is a formula. Hence I regard word-groups with ἄλλοι, when they are found with the name alone, as non-voting members of their sets. But πάντες (Ἀχαιοί κτλ.) I have somewhat hesitantly admitted as a formula for the Achaeans (*etc.*); I interpret it as having the same referent as Ἀχαιοί but a qualitatively different sense: not just "the Achaeans in general" but "every single Achaean."

Deep-structure formulae occur on Russo's level 3, 4, and 5, and here too it is natural to class those rejected minimal formulae, those single words or noun-conjunction and noun-adverb phrases whose formulaic nature depends on repetition in a fixed place in the line. For statistical purposes I have therefore grouped into the category "non-formulaic" (NF) examples of both phenomena, together with all other references that are not level-1 and level-2 formulae. The uniformities and deviations this categorization reveals are real, as the statistical tests confirm. Future fine-tuning may decompose NF into deep structures and minimal formulae while leaving intact the results arrived at here.

3. *Doubtful cases*

In "Formularity" I employed a category called "semi-formulae" for doubtful cases. This procedure, which seemed necessary when dealing statistically with some of the small sets I was comparing, is probably an unnecessary encumbrance when the sets are uniformly larger than 20 members, as ours are. I have therefore reclassified certain kinds of phrases. For instance, I there counted Hainsworth-alterations that occur only once as "semi-formulae" if the phrases they alter occur only once themselves; here, we have counted all Hainsworth-alterations as formulae—different formulae—even if each phrase occurs but once.

Other doubtful cases occur when we cannot be certain whether a given phrase is part of the basic compositional technique or is repeated for some other reason: deliberate echo, part of a repeated passage not itself formulaic, repeated references to an event in progress (*supra* 347). If the repetition itself recurs somewhere else in the poem, where no aesthetic echo is discernible, we have no problem counting all three references as formulae. If it occurs in a long formula, such as a typical eating scene, we shall consider it formulaic. When it occurs in repeated non-typical descriptions (such as the descent of Athena and Hera in Books 5 and 8), and occurs only there, we shall probably not want to call it formulaic. We need not consider here recurrent similes, since the mortal characters never, and the gods rarely, occur in similes; but many other passages remain problematic. I have tended to sin in the direction of calling a phrase formulaic rather than non-formulaic, feeling however that experimental error is unavoidable. Fortunately a maximum of three phrases per character can be wrongly counted for this reason, and that maximum is reached only by a few characters, whose occurrences number in the hundreds. Hence our statistics cannot be seriously compromised.

Appendix II: The Minimum Number for Regular Formulae

1. *Determining a minimum*

In searching for the point at which our five RF-qualities begin to fail significantly, we first ask how many formulae occur once, how many twice, and so on; we then ask what percentage of the formulae that occur at this level possess a given quality. 58 formulae occur 3 times, for instance; 31 of these, or 53.4%, are noun-epithets. We then construct a table for each quality, pairing off the level of occurrence with the percentage of formulae at each level with that quality. In theory, once we observe the number of occurrences (n) paired off with 100% such that each higher level is also paired with 100%, then n should be our minimum number for that quality. In practice, it does not work so neatly, in that a few formulae that lack one or another quality occur frequently. The percentage drops for these, then goes back up to 100% (see Graphs III and IV). Hence we ask instead, as we follow the levels of occurrence downwards, where the percentage drops below 100% and continues to decline. If it did not continue, but began to rise sharply and reached or nearly reached 100% again, we would worry about the accuracy of the selected minimum. Fortunately, this never happens.

As we proceed through the qualities, statistical accuracy requires us to impose certain restrictions. Only noun-epithet formulae occur more than 5 times in the nominative, so that when we take up the other four qualities, we get a changed population as we move from formulae occurring five times to those occurring six times. Hence to avoid misleading comparisons, we consider the other four qualities only in noun-epithets, and not noun-verbs. Similarly, with the the L-point criterion we confine ourselves to the basic names: with words that occur as infrequently as do many of the alternate names, it is impossible to determine a meaningful L-point. The results are gratifying. For three qualities—noun-epithet, L-point, major cola—there is a definite level of occurrences below which the percentage of formulae possessing the quality drops under 100% and continues to decline steadily thereafter. For the other two, the number of formulae that fail to possess the quality is too small to permit such elegant mathematical formulations; and this result is heartening because the exceptions are so few. We also discover, most significantly in looking for a minimum, that above a certain level of occurrences (which varies slightly from one criterion to another) each quality is either invariably or almost invariably present.

Our 38 characters possess 291 nominative formulae that occur only once, 132 of them noun-epithets; 147 that occur twice, 52 of them noun-epithets; and so on (see Table III). If we express these facts in percentages, we can construct the following table:

Frequency of occurrence:	1*x*	2*x*	3*x*	4*x*	5*x*	6*x*...
Percentage noun-epithets:	45	35	53	80	61	100...

After 6*x* the percentage is always 100; among the nominative formulae, only noun-epithets occur more than 5 times. If we plot these facts on a graph, letting x = frequency and y = percent, we can employ linear regression to construct a straight line from (0, 24) to (7, 100) with the equation $y = 11.0x + 24$. The correlation coefficient is .85, the P-value .03, indicating a good fit (see Graph II; logically, of course, the line makes no sense at $x = 0$). Between 1 and 6 occurrences, we are entitled to say that the more often a formula occurs, the more likely it is to be a noun-epithet. After (7, 100) this statement is meaningless, since for our data there cannot be percentages higher than 100; at (7, 100) the graph must therefore make an angle and run parallel to the x-axis at y = 100%, all the way to x = 79. The existence of this angle points to a discontinuity: from 1 to 6 occurrences we have one rule, thereafter we have another. (Mathematically, the curve itself is not discontinuous at [7, 100]; but its derivative is, and this entitles us to speak of two functions, two rules.) This gives us one obvious place for a line dividing frequent and infrequent; a regular formula (RF) would have to occur a minimum of 6 times. This would guarantee a syntactical uniformity to the RF.

Consider now what percentage of our noun-epithets fall in a major colon (setting aside the noun-verb formulae to avoid comparing apples and oranges). We get:

Frequency of occurrence:	1*x*	2x	3*x*	4*x*	5*x*	6*x*	7*x*	8*x*...
Percentage at major cola:	13	19	42	30	46	56	67	100...

After 8 occurrences, only two formulae fail to occur at the major cola: one at $11x$ and one at $46x$. Isolating these two as exceptions, we can construct another graph, again letting x = frequency, and letting y = percent at major cola. Employing linear regression, we construct a straight line from (0, –2.0) to (9.1, 100) with the equation $y = 10.8x - 2$ (see Graph III). The correlation coefficient is .94, the P-value .0005, again indicating an excellent fit. But after $x = 9.1$ the graph becomes—except for the two sharp dips at $11x$ and $46x$—a line parallel to the x-axis, again running out to $x = 79$. The idea of marking a division between RF and IF at 8 occurrences obviously suggests itself; only 3% of the RF group then would fall at a non-major colon, the two exceptions just mentioned.[42]

Next we isolate the basic-name noun-epithet formulae for our 38 characters and ask what percentage put the name at the L-point:

Frequency of occurrence:	$1x$	$2x$	$3x$	$4x$	$5x$	$6x$	$7x$	$8x$	$9x$	$10x$...
Percentage at L-point:	35	46	38	56	50	71	67	80	67	100...

After $10x$ all our nominative naming formulae without exception place the name at the L-point. The equation of our line from $1x$ to $10x$ is $y = 6.0x + 28$; the correlation coefficient is .91, the P-value .0003, indicating another good fit (see Graph IV). Again we construct an angle, this time at $x = 12.0$, and draw a straight line parallel to the x-axis for 12 occurrences and more. This time a minimum of 10 occurrences is suggested for the formation of our RF group.

Localization is a sufficiently precise function of frequency for us to conclude that the relationship expresses a fundamental law of epic verse-making. As it happens, we shall not be selecting 10 times as the minimum number of occurrences for RF, since a somewhat lower figure will do better justice to all five qualities. But the force of the frequency/localization function shows up again when we calculate the relationship between each character's percentage of basic-name RF and its basic-name localization (*supra* 372f).

The angles on our three graphs reassure us that the minima they suggest will genuinely separate more frequent from less, especially since the suggested minima are so close to each other. Below the minima, our rule states that the less often a formula occurs, the less likely it is to possess our qualities. Above them, the qualities are nearly always found. Now it

[42] I have classed Ἀντίνοος ... Εὐπείθεος υἱόος as occurring at the major colon because it could if it were not extended: perhaps it should be seen as a third exception. In constructing our curve we might employ exponential regression and run the curve from (0, 12) to (8.1, 100) with the equation $y = 12.08e^{.260x}$ and a correlation coefficient of .95, which would make the choice of $8x$ as a minimum number clearer and give us an even higher correlation. But the simpler linear relationship is probably close enough. Similarly, exponential regression for the L-point curve to be discussed next gives $y = 33.3e^{.101x}$ (correlation coefficient .92), which intersects $y = 100$ at 10.9; this makes clearer the choice of $10x$ as a minimum, but again the distinction is probably over-nice.

is of course possible that we ought instead to have avoided these angles by constructing curves which approached 100% asymptotically. But it is not easy to find curves that fit well between $x = 5$ and $x = 10$; moreover, they imply that 100% satisfaction of our criteria is a limiting condition, when in fact it is a commonly achieved reality. And of course they make the task of identifying a minimum number for the RF more complicated.[43] Our graphs and their angles make it clear exactly what we are doing when we select a minimum number.

The quantification of the RF-quality of context-free epithets must proceed a little differently. Parry called these "ornamental," and thought that the audience was indifferent to their "particularized meanings." This puzzling phrase can be interpreted variously. Sometimes it appears to refer strictly to an epithet's denotation. The epithet "expresses the heroic character of a person or thing" (*MHV* 140). That is to say, its denotation —that Achilles' feet really are swift—is lost through repetition, while its connotation—the heroic character of a person or thing—is retained. But at other times, the "particularized meaning" includes the connotation as well, as when Parry cites a passage intended to demonstrate that the audience is indifferent "not only to the meaning of the epithet, but to its connotations of nobility" for a given character, in this case Mestor and Troilus (*MHV* 136). What is left when you take away denotation and connotation is, I suppose, another kind of connotation: the epithet is "an element ennobling the style" (*MHV* 140) but not the character.

At still other times, "particularized meaning" seems to refer to the meaning of the epithet in a particular passage, as when Parry says that the poet was not guided by the effect the epithet "might produce in its particular context," or that the fixed epithet "is invariably used without relevance to the immediate action" (*MHV* 118). This sense of "particularized" is different from the other two, for an epithet can have a connotation and even a denotation and still not be relevant to the immediate action. If an epithet expresses a quality that a character can be assumed to possess no matter what happens, there is no need to treat it as relevant to a given occasion. Hence if Parry means that an epithet was not chosen in order to produce an effect specific to a given passage, that is one thing; but if he means that its denotation, or even its "connotations of nobility," are not heard at all, that is quite another. Parry's argument (*MHV* 119–45, esp. 127–30) seems intended to say the latter, though the former might be

[43] The curves that will fit best probably resemble the following, which is most simply stated with x to the left of the equals-sign: $x = ny + k(y/1-y)^{1/n}$. n is a number close to the point on our graphs where the two straight lines intersect; k is a constant less than 1. This curve, of course, will go through the origin; the more general statement is more complex. Actually fitting such a curve asks for computer software and expertise not at my disposal; moreover its value is questionable, since it seems likely that we really do have two functions, one where y is less than 100% and one where it = 100%.

thought sufficient to support the overall position, that meter always determined the choice of which epithet to use in a given passage.

Parry does not really need to say this much. His basic theory is that the epithets found in the systems of noun-epithets were chosen for the sake of their meter, their color, and their ennobling power, but not their applicability to specific contexts. They must be usable anywhere that the requirements of meter may call for their use; they must be independent of any context in which a character was likely to be found. And so they are. They will be found appropriate sometimes, neither appropriate nor inappropriate most of the time, ironic on rare occasions, but almost never at odds with their context. Were Menelaus suddenly and permanently unable to speak above a whisper, were Diomedes to become a deaf-mute, then some epithet other than βοὴν ἀγαθός would normally be called for; but it does no harm to remember their excellence at the war-cry when Diomedes is speaking off the battle-field, or even when Menelaus is back home in Sparta. Indeed it may accomplish some poetic effect that the creator of the epithet cannot have anticipated. Sometimes, to be sure, an unexpected context may threaten to produce awkwardness, as when στεροπηγερέτα Ζεύς replaces νεφεληγερέτα where the poet is speaking of Zeus' scattering the clouds (*cf. MHV* 188). Sometimes, indeed, the possibility of awkwardness seems to be realized. But mostly the epithets can be used in any place in the poem without embarrassing the poet.

Some formulae are more restricted in their use. Almost all of our nominative proper-name noun-verb formulae assert that a person is performing some particular action, and can only be used on particular occasions. Most of our noun-epithet formulae are free of context and entirely useful, but not all. Exceptions include πάντες Ἀχαιοί—every single Achaean, not just the Achaeans in general—(5*x*), φαίδιμος υἱός used of Telemachus in the context of Odysseus (4*x*), Θέτις κατὰ δάκρυ χέουσα and πατὴρ ἐμὸς ἐσθλὸς Ὀδυσσεύς (3*x*), and 12 others, 16 in all, of which 11 are instances of unusual structures, such as a doubling formula used in a singular sense (*supra* 385). A total number of 16 is too small for statistical comparison, but it is important that none of them occurs more than 5 times. Under the influence of usefulness as a criterion, we would put the minimum number for an RF at 6 occurrences.

Measurements of economy pose a similar problem: the number of exceptions is very small. At first sight there seem to be nearly 60 phrases that overlap, almost 10% of our total of 606; but it must be remembered that, logically, half of these are innocent of any violation of economy. Only one of a pair of overlapping formulae can be the villain, though we often cannot tell which one it is. Moreover, a number of these seeming overlaps, including two of the most notorious, μεγάθυμος/πόδας ὠκὺς Ἀχιλλεύς and θεὰ λευκώλενος/βοῶπις πότνια Ἥρη, do not actually violate the rule of economy. The purpose of economy is to avoid excess baggage, and there is none here. One of the necessary tools of oral composition is the basic unextended formula. Another is the group of generic words such as ἀρήιος, θεά, ἄναξ, ἥρως, and the like, which can be added to single words to make a formula or to formulae to extend them. When the poet thus extends a formula (such as λευκώλενος Ἥρη with θεά, or Διὸς υἱὸς Ἀπόλλων with ἄναξ) so as to overlap another, he has not added any new baggage. Similarly, when he adds a generic word such as μεγάθυμος to a name such as Ἀχιλλεύς, the number of tools in his kit remains exactly the same.

If we eliminate all the overlaps created by generic epithets, we are left with only 24 (12 villains and 12 victims) and some even of these are defensible. Κρόνου παῖς ἀγκυλομήτεω overlaps πατὴρ ἀνδρῶν τε θεῶν τε. The former, however, can appear in the full form or shortened to Κρόνου παῖς, and is therefore more flexible than πατὴρ ἀνδρῶν τε θεῶν τε. No less important is the meaning: there are times when a poet may want to say "father of gods and men" and not "son of devious Cronus." Note that there can be no question here of audience indifference to the particularized meaning of a fixed epithet. These are not epithets, but alternate names. They are not used in conjunction with the word Ζεύς. Therefore they cannot be understood at all—we cannot possibly reach the referent, Zeus—without grasping their (very different) connotations "father of gods" and "son of Cronus." Again, ἑκάεργος Ἀπόλλων overlaps Διὸς υἱὸς Ἀπόλλων in Homer's actual practice. But ἑκάεργος, like Ἑκάβη, is ambivalent; it can create a preceding elision (22.15) as well as make position (21.600, 9.560). Moreover, it is not truly ornamental, but richly significant, while Διὸς υἱός is much more formal. (The extensions of each formula with ἄναξ are, of course, examples of extension with generic words.) A full discussion of the other 10 cases must be postponed; let us agree to 10 violations of economy. Now if we have a pair of overlapping phrases, and agree to identify the formula which occurs less often as the villain (making a random choice when they occur equally often), then I do not find any villain that occurs more than twice. From the point of view of economy, 3 occurrences could be the minimum for a regular formula.

Four different potential minima for our RF have thus emerged: $10x$, $8x$, $6x$, and $3x$. The choice of $10x$ probaby omits too much. If we use $8x$, our RF will fall short of absolute uniformity by just 4 exceptions (two for localization and two for the major cola), and it may well be that the dividing line belongs here. I have chosen $6x$ instead, in order to include as many noun-epithets as possible while still excluding noun-verb formulae and formulae not fully useful. This entails including 8 more formulae which do not occur at the major cola or do not put the name at the L-point (and in one case do neither); we can thereby include 15 more formulae in the RF. Readers should inspect the list of RF on Table VI to decide for themselves whether these formulae are worth including; the structure of the rest of the argument of this paper will not be significantly affected if we make 8x the minimum. (though the Trojans, of course, will look even more forlorn.) If we were to put the dividing line at 3 we would add many more formulae to our RF, but most of them would be noun-verbal, or fall outside the major cola, or fail to place the basic name at the L-point. Only 10 out of the 101 additional formulae would possess the five qualities which characterize frequent formulae. We could give the Trojans two unattractive RF thereby, but their percentage of RF, their regularity, would still be deviantly low, since most of the others would also gain RF. And the cost to the uniformity of the RF would be too great.

By using a minimum number of 6, we have formed a group that is very nearly, but not quite, uniform: a few frequent formulae fall in unusual cola, or fail to localize the basic name. What is astonishing, though, is not only the extent to which the features that most fascinated Parry are in fact possessed by those formulae which occur the most often, but also the precision with which two of them—noun-epithet and major cola—are abandoned as formulaic frequency decreases. Equally gratifying is the small number of exceptions to the principles of context-free epithets and economy. Parry's recognition of the significance of thrift has come under fire recently, and we can readily justify it by dividing RF from IF.[44]

Let us not fail to note, however, one area where the use of a minimum number produces a result slightly at variance with Parry. 19 noun-epithetic formulae place the basic name at the L-point, fill a major colon, are useful and economical, and yet do not occur often enough to be RF. 9 of these have generic epithets, and may all have arisen in response to ad hoc compositional needs; they are no loss to the RF group, which is intended to include only basic tools. But the other 10 we would have been glad to include had they occurred more often. φιλομμειδὴς Ἀφροδίτη is one, ἑλίκωπες Ἀχαιοί another. Parry would have included them. But whether by accident or design, they are rarely used. These 10 formulae, less than 2% of the whole, may be looked upon as the price we pay for using a minimum number to separate RF from IF.

The minimum of 6 works for both *Iliad* and *Odyssey*. Indeed a minimum of 5 for the shorter *Odyssey* would be very awkward; it would introduce into the RF only noun-verb formulae and Τηλέμαχος θεοειδής, which extends from 7 to 12 and is thus is metrically irregular. A much shorter poem would no doubt require a smaller minimum; this problem, however, can be deferred.

[44] See the critique of Parry by D. Shive, *Naming Achilles* (Oxford 1987). One is glad to have Shive's evidence and arguments; but they miss the point that economy is essentially a fact, not of all formulae, but of formula-systems. And when we restate the principle in such a way that genuine semantic variation is consistent with economy, and extension with generics is no violation, we render it much less vulnerable to Shive's criticisms.

2. *Minimum percentages*

In trying to pinpoint the deficiency of the Trojans, we have selected a minimum number and constructed a group of RF, and are able to say that the Trojans have no RF. All the other 37, except Aeneas and Meriones who occur much less often than the Trojans, have RF. Now suppose that a character, not the Trojans, has only a few TF—20, say—and just one RF, which occurs 6 times; if there had been just one less occurrence, or if we had put the minimum just one formula higher, that character would have had no RF, and the Trojans would have had more company. Are we not in danger of letting just one occurrence make the Trojans look bad? Might not a minimum percentage of a character's formulae avoid this and similar problems?

It turns out to be impossible to find a satisfactory percentage. πολύμητις 'Οδυσσεύς occurs 68 times in the *Odyssey*, 21.5% of his 316 total. πόδας ὠκὺς 'Αχιλλεύς occurs 30 times, 12.9%; βοὴν ἀγαθὸς Διομήδης 21 times, 26.9%. There are phrases, however, that occur less often than this, but which we very much want to call RF: εὐρυόπα Ζεύς (9 occurrences in the *Iliad*, 3.8%); ἐυκνήμιδες 'Αχαιοί (10 occurrences in the *Iliad*, 4.4%). If we use a minimum percentage of 3.8%, however, we find that if a character appears fewer than 52 times, its RF will include formulae that appear just twice. That Θέτις μήτηρ and 'Αντίλοχος δ' ἐπόρουσε with only 2 occurrences each should have the same status as εὐρυόπα Ζεύς or πόδας ὠκὺς 'Αχιλλεύς seems intuitively to be a sign of poor methodology.

We might not say this if most of those characters who occur fewer than 52 times lacked genuinely frequent formulae. But there is no such lack; far from it. Διὸς θυγάτηρ 'Αφροδίτη occurs 8 times in the *Iliad*, Aphrodite herself only 22 times; ὄβριμος Ἄρης occurs 6 times, Ares 43; περικλυτὸς 'Αμφιγυήεις 7 times, Hephaestus 25; 'Αλέξανδρος θεοειδής 10 times, Paris 27; and so on. Iris occurs only 27 times altogether but has a formula that occurs 20 times. Thetis herself has a formula used 9 times. Indeed there are characters who appear too seldom to be usable for our statistical comparisons and who nevertheless have regular formulae: Nestor in the *Odyssey* has one formula which occurs 10 times, though he himself makes only 19 appearances; similar are the lesser Ajax, Calypso, and Hermes. The rarity of Θέτις μήτηρ is due to factors other than the relatively small number of Thetis' appearances. A minimum percentage obscures this.

The assumption behind using a minimum percentage to determine RF is that each character has approximately the same number of different formulae, so that the more often a character is mentioned, the more often any given formula out of its set will be used. A character with 200 TFO will, it is assumed, average 5 times as many occurrences per formula as one with 40 TFO. Apply a minimum number, and all formulae of the former might occur more than the minimum, none of the latter's, yet the latter might have perfectly good formulae that would be obvious RF if he or she were mentioned more often. A minimum percentage will avoid this contingency.

But in fact the system does not work this way. There is virtually no correlation between either TO or TFO and occurrences per formula. And it is quite false that each character has about the same number of different formulae. Indeed the contrary principle is much closer to the truth: the lower a character's TO, the fewer the number of different formulae he or she displays. We saw this result before, when we asked whether the number of different formulae displayed by the Trojans was abnormal (*supra* 353f). We took all 38 characters, and plotted their total occurrences (TO) against the number of different formulae (DF) for each, and got the equation DF = .13TO + 5, with a correlation coefficient of .80 and a P-value of .0001—not the whole story, but quite enough to discredit the contrary hypothesis, that average formularity is chiefly maintained by increasing and decreasing the number of occurrences of each formula.[45]

Apart from this false hypothesis, the only other advantage of a minimum percent is that it avoids the case where a single formulaic occurrence can have a disproportionate effect upon the statistics. The phrase Ἀλέξανδρος Ἑλένης πόσις ἠυκόμοιο occurs just 5 times and is therefore classified as an IF, while Alexander occurs 27 times in all. If the phrase had occurred just one more time in our text, Alexander's regularity in the basic name would have been 84% (16+19) instead of 56% (10+18). But we have allowed for this; we have put characters who appear as seldom as Paris on Table II to avoid just such risks. On Table I, we have a lower limit of 26 TF, which keeps the theoretical fluctuation in regularity to 20%. We might have made the limit higher and ruled out certain characters—Menelaus in the *Odyssey*, Nestor in the *Iliad*, Ares (*Iliad*), Eumaeus (*Odyssey*), the Suitors (*Odyssey*)—who have fewer TF than the Trojans and for whom, therefore, a single 6-occurrence RF might produce an unfairly high regularity in comparison. In fact the regularity of the formulae for the Suitors and Ares is abnormally low, not high; further, we have seen (*supra* 372) that if these 5 characters are omitted, the Trojans

[45] If we calculate for 214 common and proper nouns (almost all the nouns in Homer with at least one RF) in all grammatical cases, and if we correct for localization (loc.) and the particular effect of infrequent formulaic occurrences (IFO), we get the following equation:

$$DF = .30\left(\frac{12TO}{\text{loc.}} + IFO\right) + 1.5$$

The correlation coefficient is extremely high, at .98; the root mean square residual is less than 1.5. Predictions based on this equation are rarely off by more than 2. For these 214 nouns, there is even less correlation between TO and occurrences per formula (the coefficient is .08). We can regard it as quite certain that as TO rises and falls, the number of different formulae is affected precisely, but the occurrences per formula not at all.

look even worse than they do when all 5 are included. And to make it absolutely clear that the low regularity of the Trojans is not due to any deficiency in total formulae, some characters with fewer TF should be part of the comparison.[46]

WASHINGTON UNIVERSITY
November, 1989

[46] The list of people who have contributed to the composition of this article is a long one: Dee Clayman of CUNY, Mark Edwards of Stanford, Richard Janko of UCLA, Leonard Muellner of Brandeis, Gregory Nagy of Harvard, Anne Perkins of Webster University, Nancy Rubin of the University of Georgia, Ruth Scodel of the University of Michigan, David Shive of Wayne State, Edward Vastola of Plattsburgh, N.Y.; and Alfred Holtzer (Chemistry) and Edward Spitznagel (Mathematics) of Washington University in St. Louis.

TABLE I:
Formularity of the 23 characters with TFO > 25 in the basic name

	Basic name						All names					
	TO	NFO	TFO	TFO/TO	RFO	IFO	TO	NFO	TFO	TFO/TO	RFO	IFO
Class A												
Agam I	95	16	79	83%	75	4	In Class B					
Diom I	44	0	44	100%	41	3	75	12	63	84%	52	11
Mene I	61	10	51	84%	33	18	69	13	56	81%	33	23
Mene O	32	3	29	91%	22	7	35	4	31	89%	22	9
Pene O	52	6	46	88%	40	6	53	6	47	88%	40	7
Total	284	35	249	87.7%	211	38	232	35	197	84.9%	147	50
Chi-square P-value				.056						.624		
Class B												
Achi I	171	50	121	71%	91	30	232	82	150	65%	91	59
Agam I	In Class A						121	35	86	71%	75	11
Ajax I	80	22	58	73%	21	37	83	22	61	73%	21	40
Apol I	92	29	63	68%	54	9	100	31	69	69%	54	15
Ares I	43	13	30	70%	6	24	43	13	30	70%	6	24
Athe I	81	24	57	70%	51	6	98	26	72	74%	51	21
Athe O	109	24	85	78%	68	17	133	31	102	77%	74	28
Euma O	45	18	27	60%	21	6	67	20	47	70%	34	13
Hect I	197	67	130	66%	73	57	198	67	131	66%	73	58
Hera I	72	17	55	76%	43	12	72	17	55	76%	43	12
Nest I	40	9	31	78%	22	9	40	9	31	78%	22	9
Ody I	52	10	42	81%	37	5	75	18	57	76%	37	20
Ody O	256	65	191	75%	145	46	317	98	219	69%	145	74
Tele O	124	34	90	73%	46	44	149	34	115	77%	68	47
Zeus I	163	57	106	65%	46	60	237	84	153	65%	70	83
Zeus O	87	22	65	75%	15	50	108	28	80	74%	15	65
Total	1612	461	1151	71.4%	739	412	2073	615	1458	70.3%	879	579
Chi-square P-value				.231						.161		
Class C												
Acha I	182	90	92	51%	65	27	228	124	104	46%	65	39
Suit O	56	30	26	46%	6	20	62	36	26	42%	6	20
Troj I	96	56	40	42%	0	40	100	56	44	44%	0	44
Total	334	176	158	47.3%	71	87	390	216	174	44.6%	71	103
Chi-square P-value				.366						.929		
Total	2230	672	1558		1021	537	2695	866	1829		1097	732
Formularity, all classes				69.8%						67.9%		

TABLE II:
Formularity of the characters with TFO < 25 in the basic name

Basic Names							All Names					
	TO	NFO	TFO	TFO/TO	RFO	IFO	TO	NFO	TFO	TFO/TO	RFO	IFO
Class A												
Alex I	21	3	18	86%	10	8	in Class B					
Aphr I	22	2	20	91%	8	12	22	2	20	91%	8	12
Heph I	insufficient TO						25	4	21	84%	7	14
Iris I	27	3	24	89%	20	4	27	3	24	89%	20	4
Pose I	25	5	20	80%	14	6	in Class B					
Pria I	29	6	23	79%	8	15	29	6	23	79%	8	15
Total	124	19	105	84.7%	60	45	103	15	88	85.4%	43	45
Chi-square P-value:				.715						.636		
Class B												
Aene I	31	13	18	58%	0	18	34	13	21	62%	0	21
Alcin O	20	6	14	70%	0	14	31	6	25	81%	11	14
Alex I	in Class A						27	8	19	70%	10	9
Antil I*	30	10	20	67%	0	20	36	11	25	69%	7	18
Antin O	31	8	23	74%	10	13	32	8	24	75%	10	14
Thet I	26	5	21	81%	9	12	26	5	21	81%	9	12
Idom I	31	11	20	65%	6	14	32	11	21	66%	6	15
Meri I	38	15	23	61%	0	23	38	15	23	61%	0	23
Pose I	in Class A						46	10	36	78%	20	16
Pose O	20	5	15	75%	10	5	30	10	20	67%	10	10
Total	227	73	154	67.8%	35	119	332	97	235	70.8%	83	152
Chi-square P-value				.594						.515		
Class C												
Patr I	43	29	14	33%	0	14	61	33	28	46%	8	20
Total	394	121	273		95	178	496	145	351		134	217
Formularity				69.1%						70.6%		
Tables I and II:												
Total	2624	793	1831		1116	715	3191	1011	2180		1231	949
Formularity				69.8%						68.3%		
Mean Formularity				72.1%						71.6%		

* Antilochus' IFO for all the names is less than for the basic name because his RF for all the names is an IF for the basic name.

TABLE III: IF for the 38 characters on Tables I and II

Occurrences per formula	Noun-epithet Distinctive DF	Noun-epithet Distinctive Occ	Noun-epithet Generic DF	Noun-epithet Generic Occ	Noun-verb Distinctive DF	Noun-verb Distinctive Occ	Noun-verb Generic DF	Noun-verb Generic Occ	Total DF	Total Occ
1x	69	69	63	63	25	25	134	134	291	291
2x	36	72	16	32	58	116	37	74	147	294
3x	22	66	9	27	13	39	14	42	58	174
4x	14	56	6	24	2	8	3	12	25	100
5x	6	30	5	25	2	10	5	25	18	90
Total	147	293	99	171	100	198	193	287	539	949

TABLE IV: Regularity and localization (basic name, TF > 25)

		Local	Regul	Formu	O'Neill (name in final position unless noted)
Class A	Agam I	98	95	83	96.2
	Diom I	98	93	100	96.2
	Mene I	66	65	84	96.2 (ionic a minore)
	Mene O	88	76	91	100 (ionic a minore)
	Pene O	98	87	88	100.0 (ultima treated as long)
Class B	Achi I	94	75	71	92.1
	Ajax I	40	39	73	41.3
	Apol I	92	86	68	92.1
	Ares I	35	21	70	41.3 (spondaic)
	Athe I	98	89	70	92.1
	Athe O	99	80	78	92.9
	Euma O	76	78	60	92.9
	Hect I	48	56	65	41.3
	Hera I	67	78	76	41.3
	Nest I	60	71	78	41.3
	Ody I	94	88	81	92.1
	Ody O	95	76	75	92.9
	Tele O	60	51	73	48.6 (3–5)
	Zeus I	40	43	65	3.1
	Zeus O	28	23	75	3.6
Class C	Acha I	94	71	51	92.1
	Suit O	43	22	48	54.4 (4–5 1/2)
	Troj I	43	0	42	28.7 (trochaic)

TABLE V: Oblique cases

	TO	NFO	TFO	TFO/TO	RFO	IFO	RFO/TFO
Acha G	426	112	314	74%	205	109	65%
Troj G	173	71	102	59%	25	77	26%
Suit G	45	16	29	64%	17	12	59%
Total	644	199	445	69.1%	247	198	55.5%
Chi-square P-value				.001			.000
(without Trojans, Fisher's exact)				.217			.543
Troj D	170	87	83	49%	19	64	23%
Acha D	124	62	72	54%	9	63	13%
Suit D	74	34	40	54%	13	27	33%
Total D	378	183	195	51.6%	41	154	21.0%
Chi-square P-value				.623			.039
Acha A	122	56	66	54%	39	27	59%
Troj A	56	35	21	38%	0	21	0%
Suit A	53	24	29	55%	8	21	28%
Total A	231	115	116	50.2%	47	69	40.5%
Chi-square P-value				.091			.000
(without Trojans, Fisher's exact)							.007
Acha V	23	2	21	91%	7	14	33%
Troj V	23	2	21	91%	13	8	62%
Suit V	13	1	12	92%	0	12	0%
Total V	59	5	54	92%	20	34	37%

TABLE VI: Formula lists

1. The RF in order of number of occurrences
   (Totals include extensions, indicated in parentheses; unless otherwise noted, the formula contains the basic name and the name occurs at the L-point.)

Αἴας ἢ Ἰδομενεὺς ἢ <u>δῖος Ὀδυσσεὺς</u> *Odyssey* (πολύτλας 37x)	79x
εἶσεν ἄγων· ἐν δ' ἀρχὸς ἔβη <u>πολύμητις Ὀδυσσεύς</u> *Odyssey*	66x
Ἀτρείδης τε ἄναξ ἀνδρῶν καὶ <u>δῖος Ἀχιλλεύς</u> *Iliad* (ποδάρκης 21x)	55x
τὸν δὲ παρισταμένη προσέφη <u>γλαυκῶπις Ἀθήνη</u> *Odyssey* (θεὰ 32x)	50x
τὴν δ' αὖ <u>Τηλέμαχος πεπνυμένος</u> ἀντίον ηὔδα *Odyssey*	46x
τῶν ἑκατὸν νηῶν ἦρχε <u>κρείων Ἀγαμέμνων</u> *Iliad* (ἥρως 3x, Ἀτρείδης 10x, εὐρὺ 11x)	40x
τὴν δῷ ἠμείβετ' ἔπειτα <u>περίφρων Πηνελόπεια</u> *Odyssey* (κούρη Ἰκαρίοιο 8x)	40x

στεῦται γάρ τι ἔπος ἐρέειν κορυθαίολος Ἕκτωρ *Iliad* (μέγας 12x)	37x
οὐδὲ μὲν οὐδέ μ' ἔασκες, ὅτ' ἄνδρ' ἐμὸν ὠκὺς Ἀχιλλεὺς *Iliad* (πόδας 30x)	36x
Τὸν δ' ἠμείβετ' ἔπειτα ἄναξ ἀνδρῶν Ἀγαμέμνων *Iliad*	35x
Ὣς ἔφατ' εὐχόμενος, τοῦ δ' ἔκλυε Φοῖβος Ἀπόλλων *Iliad*	32x
ᾧ ἔπι πολλὰ μόγησα, δόσαν δέ μοι υἷες Ἀχαιῶν *Iliad* (ἀρήιοι 6x)*	32x
χώρησαν δ' ὑπό τε πρόμαχοι καὶ φαίδιμος Ἕκτωρ *Iliad*	29x
ἀγχοῦ δ' ἱσταμένη προσέφη γλαυκῶπις Ἀθήνη *Iliad* (θεὰ 19x)	28x
τῷ ἐικυῖ' ἤιξεν ἐπὶ χθόνα Παλλὰς Ἀθήνη *Iliad*	23x
οὐ γάρ πω τέθνηκεν ἐπὶ χθονὶ δῖος Ὀδυσσεύς *Iliad* (πολύτλας 5x)	23x
τῶν αὖθ' ἡγεμόνευε βοὴν ἀγαθὸς Διομήδης *Iliad* (shortened ἀγαθὸς Διομήδης 1x)	22x
Ὣς φάτο· τὴν δ' οὔ τι προσέφη νεφεληγερέτα Ζεύς *Iliad*	22x
Ὣς φάτο, τὸν δ' οὔ τι προσέφη λευκώλενος Ἥρη *Iliad* (θεὰ 19x)	22x
Τὸν δ' ἠμείβετ' ἔπειτα Γερήνιος ἱππότα Νέστωρ *Iliad*	22x
μείων, οὔ τι τόσος γε ὅσος Τελαμώνιος Αἴας *Iliad* (μέγας 12x)	21x
Ὣς ἔφατ' εὐχόμενος, νεμέσησε δὲ πότνια Ἥρη *Iliad* (βοῶπις 11x)	21x
ἀγχοῦ δ' ἱσταμένη προσέφη πόδας ὠκέα Ἶρις *Iliad* (ποδήμενος ὠκέα 9x)	20x
Ὣς φάτο, τὸν δ' οὔ τι προσέφη κρατερὸς Διομήδης *Iliad*	19x
ὣς εἰπὼν ἡγεῖθ', ἡ δ' ἕσπετο Παλλὰς Ἀθήνη *Odyssey*	18x
τόσσοι ἐπὶ Τρώεσσι κάρη κομόωντες Ἀχαιοὶ *Iliad*	17x
τὸν δ' ἀπαμειβόμενος προσέφης, Εὔμαιε συβῶτα *Odyssey*	15x
οἵ κέ με τιμήσουσι, μάλιστα δὲ μητίετα Ζεύς *Iliad*	15x
ὀψὲ δὲ δὴ μετὰ νῶι κίε ξανθὸς Μενέλαος *Odyssey*	14x
Ἀργεῖοι, μετὰ δέ σφιν ἔβη πολύμητις Ὀδυσσεύς *Iliad*	14x
τοῖσι δὲ μύθων ἦρχε Ποσειδάων ἐνοσίχθων *Iliad*	14x
ὣς εἰπὼν κλισίηνδ' ἡγήσατο δῖος ὑφορβός *Odyssey* (not basic name)	13x
εἰ δέ κ' Ἀλέξανδρον κτείνῃ ξανθὸς Μενέλαος *Iliad*	13x
Τὴν δ' ἠμείβετ' ἔπειτα πατὴρ ἀνδρῶν τε θεῶν τε *Iliad* (not basic name)	12x
ὧδε γὰρ ἠπείλησε Κρόνου πάις, ἧ τελέει περ *Iliad* (ἀγκυλομήτεω 9x; not basic name)	12x
αὐτόματος δέ οἱ ἦλθε βοὴν ἀγαθὸς Μενέλαος *Iliad*	12x
αὐτὰρ ἐπεὶ τό γ' ἄκουσ' ἱερὸν μένος Ἀλκινόοιο *Odyssey* (not basic name)**	11x
νήπιος, οὐδὲ τὸ οἶδε κατὰ φρένα Τυδέος υἱός *Iliad* (not basic name)	11x
Τρωσὶν μὲν προμάχιζεν Ἀλέξανδρος θεοειδής *Iliad*	10x
τὸν δ' αὖτ' Ἀντίνοος προσέφη, Εὐπείθεος υἱός *Odyssey*	10x
ὣς δ' αὔτως ἑτέρωθεν ἐυκνήμιδες Ἀχαιοὶ *Iliad*	10x
ἐκ τοῦ δὴ Ὀδυσῆα Ποσειδάων ἐνοσίχθων *Odyssey*	10x
τοῖσιν δ' ἴκμενον οὖρον ἵει ἑκάεργος Ἀπόλλων *Iliad* (ἄναξ 2x)	9x
τῆς γάρ τοι γενεῆς ἧς Τρωσὶ περ εὐρύοπα Ζεὺς *Iliad*	9x
Ἡφαίστου δ' ἵκανε δόμον Θέτις ἀργυρόπεζα *Iliad* (not L-point)	9x

* Ἀχαιῶν is is here considered the basic name because in this formula its metrical behavior is identical with that of Ἀχαιοί.

** Ἀλκινόοιο (contrast Ἀχαιῶν) is metrically dissimilar to Ἀλκίνοος.

ὄρνυτ' ἄρ' ἐξ εὐνῆφιν Ὀδυσσῆος φίλος υἱός *Odyssey* (not basic name)	9x
εἰ μὴ ἄρ' ὀξὺ νόησε Διὸς θυγάτηρ Ἀφροδίτη *Iliad*	8x
τὴν δ' ἀπαμειβόμενος προσέφη νεφεληγερέτα Ζεύς *Odyssey*	8x
Τὸν δ' ὡς οὖν ἐνόησεν ἀρηΐφιλος Μενέλαος *Iliad*	8x
αὐτῆμαρ δέ οἱ ἦλθε βοὴν ἀγαθὸς Μενέλαος *Odyssey*	8x
Ὣς ὃ μὲν ἐν κλισίῃσι Μενοιτίου ἄλκιμος υἱὸς *Iliad* (not basic name)	8x
Τὴν δ' αὖτε προσέειπε γέρων Πρίαμος θεοειδής *Iliad* (not L-point)	8x
ἦ ῥα καὶ ἵππον ἄγων μεγαθύμου Νέστορος υἱός *Iliad* (not basic name)*	7x
τὴν πρότερος προσέειπεν ἄναξ Διὸς υἱὸς Ἀπόλλων *Iliad* (ἄναξ 4x)	7x
Ἕκτωρ Πριαμίδης, ὅτε οἱ Ζεὺς κῦδος ἔδωκε *Iliad* (not L-point)	7x
ὣς φάτο Τηλέμαχος, τῷ δ' αἰετὼ εὐρύοπα Ζεὺς *Odyssey*	7x
ἧχι ἑκάστῳ δῶμα περικλυτὸς ἀμφιγυήεις *Iliad* (not basic name)	7x
τοῖσι δὲ καὶ μετέειφ' ἱερὴ ἲς Τηλεμάχοιο *Odyssey* (not basic name)	7x
Παλλὰς Ἀθηναίη· σὲ δ' ὀδυρομένην ἐλεαίρει *Odyssey* (not basic name)	6x
τὰς ἐν Πηρείῃ θρέψ' ἀργυρότοξος Ἀπόλλων *Iliad*	6x
δῦν' Ἄϊδος κυνέην, μή μιν ἴδοι ὄβριμος Ἄρης *Iliad*	6x
οἵ τ' ἔχον Αἴγιναν Μάσητά τε κοῦροι Ἀχαιῶν *Iliad*	6x
τοῖσι δὲ μύθων ἦρχε συβώτης, ὄρχαμος ἀνδρῶν *Odyssey* (not L-point)	6x
Τὸν δ' αὖτ' Ἰδομενεὺς Κρητῶν ἀγὸς ἀντίον ηὔδα *Iliad*	6x
"Εὐρύμαχ' ἠδὲ καὶ ἄλλοι, ὅσοι μνηστῆρες ἀγαυοί *Odyssey* (not L-point)	6x
Τὴν δὲ μέγ' ὀχθήσας προσέφη κρείων ἐνοσίχθων *Iliad* (not basic name)	6x
ἔνθ' ἦλθεν, φίλος υἱὸς Ὀδυσσῆος θείοιο *Odyssey* (not basic name)*	6x

2. IF used exactly five times: 18 different formulae

a. Noun-epithet

δούπησεν δὲ πεσών· ὃ δ' ἐπέδραμε φαίδιμος Αἴας *Iliad*
Ἕκτωρ τε Πριάμοιο πάις καὶ χάλκεος Ἄρης; *Iliad*
τῇ δ' ἄρα δίφρον ἑλοῦσα φιλομειδὴς Ἀφροδίτη *Iliad*
οἰσέτω ἐς μέσσην ἀγορήν, ἵνα πάντες Ἀχαιοὶ *Iliad*
δῖος Ἀλέξανδρος Ἑλένης πόσις ἠυκόμοιο. *Iliad* (not L-point)
ἀλλά μοι αἰγίοχος Κρονίδης Ζεὺς ἄλγε' ἔδωκεν, *Iliad* (not L-point)
Κρητῶν δ' Ἰδομενεὺς δουρὶ κλυτὸς ἡγεμόνευεν, *Iliad*
Ἀτρείδης Μενέλαος ἐπευξάμενος Διὶ πατρί· *Iliad* (not L-point)
ὣς δ' αὔτως Μενέλαος ἀρήιος ἔντε' ἔδυνεν. *Iliad* (not L-point)
τῷ δὲ καὶ ἵππους μὲν λῦσε κλυτὸς ἐννοσίγαιος, *Iliad* (not basic name)
τὴν δὲ πολὺ πρῶτος ἴδε Τηλέμαχος θεοειδής· *Odyssey* (not L-point)

* Both formulae are extended by the basic name, but fewer than 6 times, so they do not count as RF for the basic name, only for all the names.

b. Noun-verb

τὸν δ' αὖτ' Ἀλκίνοος ἀπαμείβετο φώνησέν τε· *Odyssey*
ὣς ἔφατ' Ἀντίνοος, τοῖσιν δ' ἐπιήνδανε μῦθος. *Odyssey*
Ἕκτωρ δ' ὥς ἐνόησεν ἀνέψιον ὀφθαλμοῖσιν *Iliad*
σκηπτοῦχος βασιλεύς, ᾧ τε Ζεὺς κῦδος ἔδωκεν. *Iliad*
οἷος Ὀδυσσεὺς ἔσκεν, ἀρὴν ἀπὸ οἴκου ἀμῦναι. *Odyssey*
τοῦδ' αὐτοῦ λυκάβαντος ἐλεύσεται ἐνθάδ' Ὀδυσσεύς, *Odyssey*
δὴ τότε Τηλέμαχος προσεφώνεε Νέστορος υἱόν, *Odyssey*

3. IF used exactly four times: 25 different formulae

a. Noun-epithet

Αἴας δὲ πρῶτος Τελαμώνιος ἕρκος Ἀχαιῶν *Iliad* (not L-point)
εἰ μὴ Ἀπόλλων Φοῖβος ἐυδμήτου ἐπὶ πύργου *Iliad* (not L-point)
Αἰνείας, τὸν ὑπ' Ἀγχίσῃ τέκε δῖ' Ἀφροδίτη *Iliad*
ἀμφὶ δ' ἄρ' εἰδώλῳ Τρῶες καὶ δῖοι Ἀχαιοὶ *Iliad*
κάλλιφ', ὅτ' ἐν Θήβῃσιν ἀπώλετο λαὸς Ἀχαιῶν. *Iliad*
οὐ γὰρ πρὶν πολέμου ἀποπαύσεται ὄβριμος Ἕκτωρ *Iliad*
Ζεὺς ὑψιβρεμέτης· νῦν δ' οὐδέ με τυτθὸν ἔτισεν· *Iliad* (not L-point)
ὅρκια δὲ Ζεὺς ἴστω ἐρίγδουπος πόσις Ἥρης. *Iliad*
υἱὸς Πειριθόοιο τὸν ἀθάνατος τέκετο Ζεύς· *Iliad*
Ζεύς με μέγα Κρονίδης ἄτῃ ἐνέδησε βαρείῃ *Iliad* (not L-point)
Ζεὺς δὲ πατὴρ Ἴδηθεν ἐπεὶ ἴδε χώσατ' ἄρ' αἰνῶς, *Iliad* (not L-point)
Ζεὺς γάρ που τό γε οἶδε καὶ ἀθάνατοι θεοὶ ἄλλοι, *Odyssey* (not L-point)
ἀλλά μιν Ἀτρείδης δουρικλειτὸς Μενέλαος *Iliad*
Μηριόνης τ' ἀτάλαντος Ἐνυαλίῳ ἀνδρειφόντῃ · *Iliad* (not L-point)
ἐς δ' ἦλθον μνηστῆρες ἀγήνορες· οἱ μὲν ἔπειτα *Odyssey*
Ὣς φάτο, τοῦ δ' Ὀδυσεὺς δουρικλυτὸς ἐγγύθεν ἐλθὼν *Iliad* (not basic name)
ἔπλετο· τοῖος γὰρ γαιήοχος ἐννοσίγαιος *Iliad* (not basic name)
καὶ Πρίαμος καὶ λαὸς ἐυμμελίω Πριάμοιο. *Iliad* (formulaic for Trojans; not basic name; shortened καὶ Πρίαμος καὶ λαὸς 1x)
τὸν δ' ἀπαμειβόμενος προσεφώνεε φαίδιμος υἱός· *Odyssey* (not basic name)
Τρῶες δὲ φλογὶ ἶσοι ἀολλέες ἠὲ θυέλλῃ *Iliad*

b. Noun-verb

Ἀντίνοος δ' ἐνένιπεν ἔπος τ' ἔφατ' ἔκ τ' ὀνόμαζε· *Odyssey*
Τρῶες δὲ προὔτυψαν ἀολλέες, ἦρχε δ' ἄρ' Ἕκτωρ *Iliad*
ἴστω νῦν Ζεὺς πρῶτα θεῶν ξενίη τε τράπεζα *Odyssey*
μνηστῆρες δ' ὁμάδησαν ἀνὰ μέγαρα σκιόεντα· *Odyssey*
Τηλέμαχος δ' ἑτάροισιν ἐποτρύνων ἐκέλευσεν *Odyssey*

TABLE VII: The Trojan semantic set

Total formulae: 44 occurrences

1. Noun-epithet formulae: 13 different F, 30 occurrences (26 Τρῶες, 4 λαός)

a. Distinctive: 8 different F, 18x

Τρῶες ὑπέρθυμοι ἕλον ἔγχεσιν ἱέμενοί περ, *Il.* 17.276
Τρῶες ὑπέρθυμοι τηλεκλειτοί τ' ἐπίκουροι *Il.* 9.233
Τρῶες ὑπέρθυμοι πολυηγερέες τ' ἐπίκουροι *Il.* 11.564

ἔνθα τότε Τρῶές τε διέκριθεν ἠδ' ἐπίκουροι. (Doubling F in a singular sense) *Il.* 2.815
δαίνυντο, Τρῶες δὲ κατὰ πτόλιν ἠδ' ἐπίκουροι· *Il.* 7.477

πολλοὶ μὲν γὰρ ἐμοὶ Τρῶες κλειτοί τ' ἐπίκουροι (DoubF) *Il.* 6.227
τρὶς δὲ κυκήθησαν Τρῶες κλειτοί τ' ἐπίκουροι. *Il.* 18.229

Ἔνθ' ἄλλοι Τρῶες τηλεκλειτοί τ' ἐπίκουροι (DoubF) *Il.* 12.108

αὖτις ἀν' ἰωχμόν· ἐπὶ δὲ Τρῶές τε καὶ Ἕκτωρ (DoubF) *Il.* 8.158
ὣς τρέσε Νεστορίδης, ἐπὶ δὲ Τρῶές τε καὶ Ἕκτωρ *Il.* 15.589

καὶ Πρίαμος καὶ λαὸς ἐϋμμελίω Πριάμοιο. (DoubF extended) *Il.* 4.47
καὶ Πρίαμος καὶ λαὸς ἐϋμμελίω Πριάμοιο, *Il.* 4.165
καὶ Πρίαμος καὶ λαὸς ἐϋμμελίω Πριάμοιο. *Il.* 6.449
καὶ Πρίαμος καὶ λαὸς Ἀλεξάνδρου ἕνεκ' ἄτης, (shortened) *Il.* 24.28

οἳ δ' ἕατ' εἰν ἀγορῇ Τρῶες καὶ Δαρδανίωνες (DoubF) *Il.* 7.414
ἀλλ' οὐ πείσονται Τρῶες καὶ Δαρδανίωνες *Il.* 8.154

Τρῶες καὶ Τρώων ἄλοχοι λελάχωσι θανόντα. (DoubF) *Il.* 7.80
Τρῶες καὶ Τρώων ἄλοχοι λελάχωσι θανόντα. *Il.* 22.343

b. Generic: 5 different F, 12x

Τρῶες δὲ μεγάθυμοι ἐπεὶ ἴδον υἷε Δάρητος *Il.* 5.27
Τρῶες δὲ μεγάθυμοι ὅπως ἴδον αἷμ' Ὀδυσῆος *Il.* 11.459
Τρῶες δὲ μεγάθυμοι ἐπεὶ κατὰ τεῖχος ἔβησαν *Il.* 13.737

ἦ μάλα δὴ Τρῶες μεγαλήτορες οὕς περ ἔπεφνον *Il.* 21.55

πειρᾷ ὥς κε Τρῶες ὑπερφίαλοι ἀπόλωνται *Il.* 21.459

ἠνώγει Πρίαμός τε καὶ ἄλλοι Τρῶες ἀγαυοὶ *Il.* 7.386
Ἕκτωρ τε προέηκε καὶ ἄλλοι Τρῶες ἀγαυοί. *Il.* 10.563
δάμνα μιν Ζηνός τε νόος καὶ Τρῶες ἀγαυοὶ *Il.* 16.103

Τρῶες δὲ φλογὶ ἶσοι ἀολλέες ἠὲ θυέλλῃ *Il.* 13.39
Τρῶες δὲ προὔτυψαν ἀολλέες, ἦρχε δ' ἄρ' Ἕκτωρ *Il.* 13.136
Τρῶες δὲ προὔτυψαν ἀολλέες, ἦρχε δ' ἄρ' Ἕκτωρ *Il.* 15.306
Τρῶες δὲ προὔτυψαν ἀολλέες· ἦρχε δ' ἄρ' Ἕκτωρ. *Il.* 17.262

2. Verbal formulae: 7 different F, 14 occurrences

a. Distinctive: 5 different F, 12 occurrences

ἀμφὶ ἓ παπτήνας· ὑπὸ δὲ Τρῶες κεκάδοντο *Il.* 4.497
ἀμφὶ ἓ παπτήνας· ὑπὸ δὲ Τρῶες κεκάδοντο *Il.* 15.574

Τρῶες δ' αὖθ' ἑτέρωθεν ἐπὶ θρωσμῷ πεδίοιο· (verb to be supplied) *Il.* 20.3
Τρῶες δ' αὖθ' ἑτέρωθεν ἐπὶ θρωσμῷ πεδίοιο " *Il.* 11.56

αἴ κέ σε τῷ εἴσκοντες ἀπόσχωνται πολέμοιο
Τρῶες, ἀναπνεύσωσι δ' ἀρήιοι υἷες Ἀχαιῶν *Il.* 11.798
αἴ κ' ἐμὲ σοὶ ἴσκοντες ἀπόσχωνται πολέμοιο
Τρῶες, ἀναπνεύσωσι δ' ἀρήιοι υἷες Ἀχαιῶν *Il.* 16.41
αἴ κέ σ' ὑποδείσαντες ἀπόσχωνται πολέμοιο
Τρῶες, ἀναπνεύσωσι δ' ἀρήιοι υἷες Ἀχαιῶν *Il.* 18.199

Ἔνθά κεν αὖτε Τρῶες ἀρηιφίλων ὑπ' Ἀχαιῶν
Ἴλιον εἰσανέβησαν ἀναλκείῃσι δαμέντες, *Il.* 17.319
ἔνθά κεν αὖτε Τρῶες ἀρηιφίλων ὑπ' Ἀχαιῶν
Ἴλιον εἰσανέβησαν ἀναλκείῃσι δαμέντες, *Il.* 6.73

Ὦσαν δὲ πρότεροι Τρῶες ἑλίκωπας Ἀχαιούς· *Il.* 16.569
Ὦσαν δὲ πρότεροι Τρῶες ἑλίκωπας Ἀχαιούς· *Il.* 17.274

b. Generic: 2 different F, 3 occurrences

Ὣς ἄρ' ἔφη, Τρῶες δὲ μάλα σχεδὸν ἤλυθον αὐτῶν. *Il.* 5.607

Ὣς Ἕκτωρ ἀγόρευ', ἐπὶ δὲ Τρῶες κελάδησαν. *Il.* 8.542
Ὣς Ἕκτωρ ἀγόρευ', ἐπὶ δὲ Τρῶες κελάδησαν *Il.* 18.310

Non-formulaic instances: 56 occurrences

1. Doubling formulae and other phrases in a plural sense: 14 occurrences

εἴ περ γάρ κ' ἐθέλοιμεν Ἀχαιοί τε Τρῶές τε *Il.* 2.123
Ὣς ἔφαθ', οἳ δ' ἐχάρησαν Ἀχαιοί τε Τρῶές τε *Il.* 3.111
Πάτροκλος δ' εἷος μὲν Ἀχαιοί τε Τρῶές τε *Il.* 15.390
τοῦ περ δὴ περὶ νηὸς Ἀχαιοί τε Τρῶές τε *Il.* 15.707
ἀμφὶ δ' ἄρ' εἰδώλῳ Τρῶες καὶ δῖοι Ἀχαιοὶ *Il.* 5.451
ὣς Τρῶες καὶ Ἀχαιοὶ ἐπ' ἀλλήλοισι θορόντες *Il.* 11.70
ὣς Τρῶες καὶ Ἀχαιοὶ ἐπ' ἀλλήλοισι θορόντες *Il.* 16.770
μίμνειν ἐν πεδίῳ, ὅθι περ Τρῶες καὶ Ἀχαιοὶ *Il.* 18.263
Ἀργεῖοι καὶ Τρῶες ὁμιλαδόν· οὐδ' ἄρ' ἔμελλε *Il.* 12.3
Οὐδ' ἄν πω τότε γε Τρῶες καὶ φαίδιμος Ἕκτωρ *Il.* 12.290
Τρῶες καὶ Δαναοὶ σύναγον κρατερὴν ὑσμίνην. *Il.* 14.448
Τρῶες καὶ Δαναοὶ σύναγον κρατερὴν ὑσμίνην. *Il.* 16.764
Τρῶες καὶ Λύκιοι καὶ Μυρμιδόνες καὶ Ἀχαιοί, *Il.* 16.564
ὑψηλόν, τό ῥά οἱ Τρῶες καὶ Παλλὰς Ἀθήνη *Il.* 20.146

2. ἄλλοι: 5 occurrences

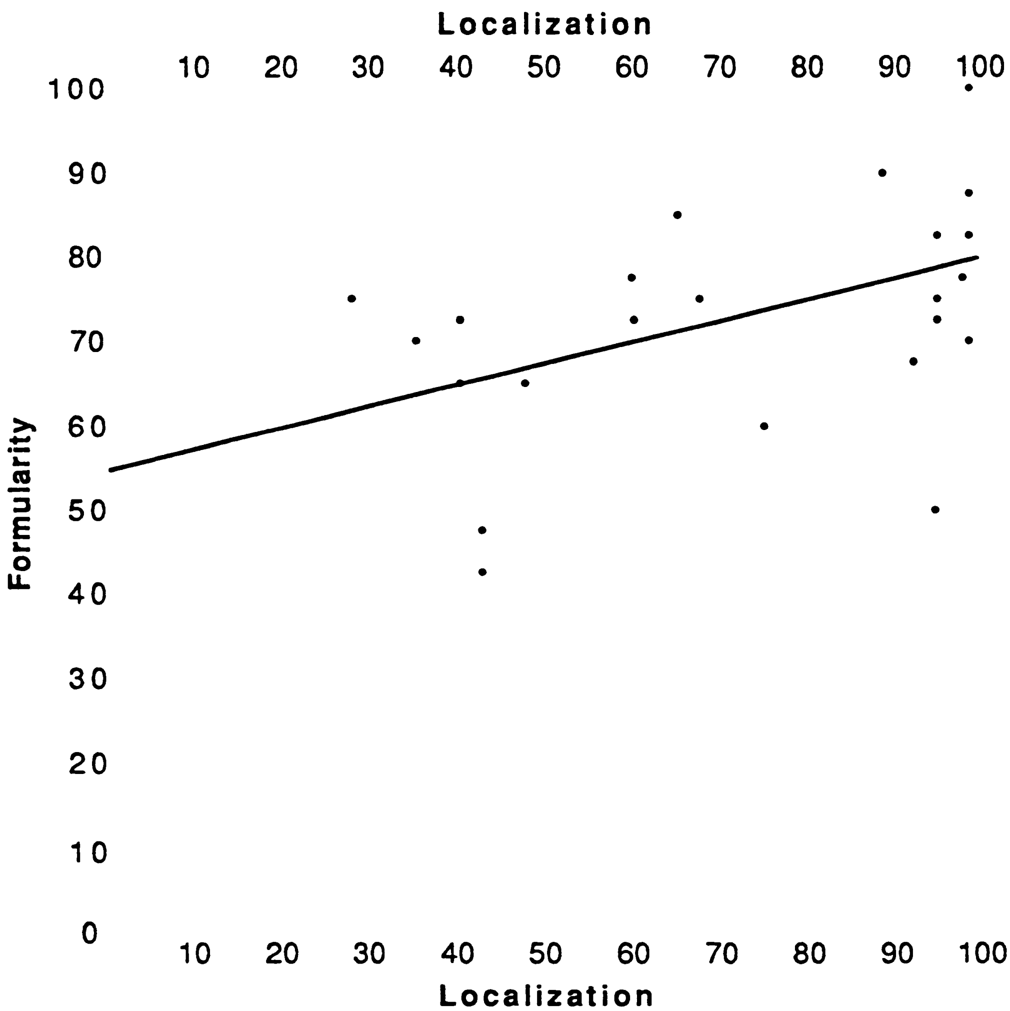
ἄλλοι τε Τρῶες μέγα κεν κεχαροίατο θυμῷ *Il.* 1.256

ἐσχατιῇ πολέμοιο δυσηχέος· οἱ δὲ δὴ ἄλλοι
Τρῶες ὀρίνονται ἐπιμὶξ ἵπποι τε καὶ αὐτοί. *Il.* 11.525

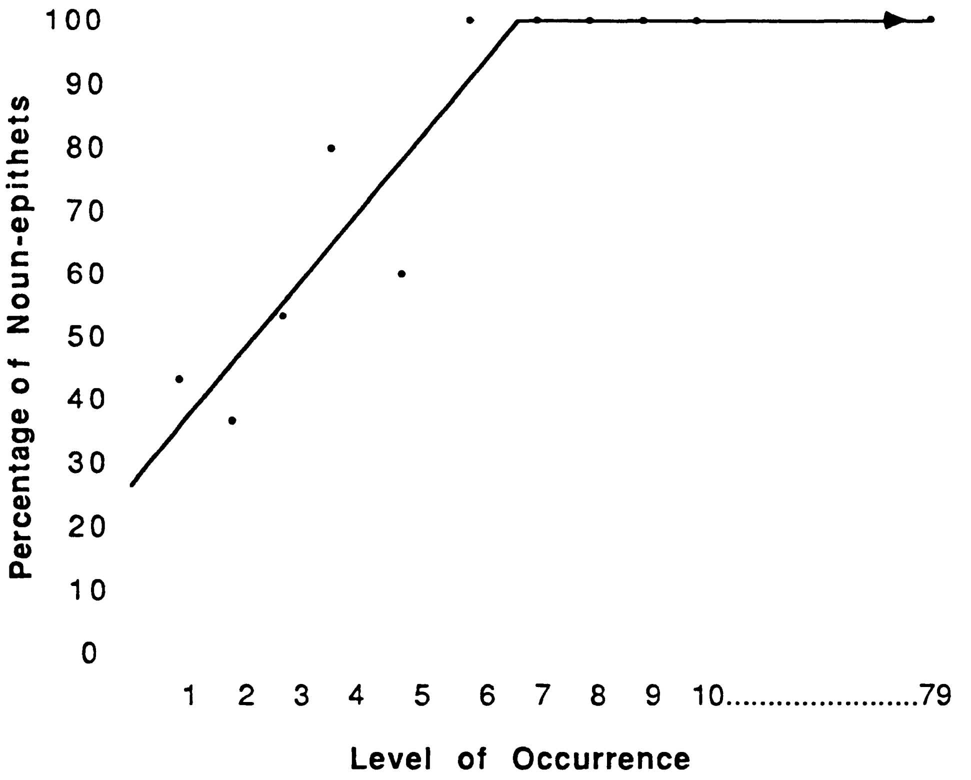
οὐδὲ μὲν ἄλλοι Τρῶες ἐφ' ἵππων ἠγερέθοντο, *Il.* 12.82

οἳ δ' ἄλλοι Τρῶες καὶ ἐυκνήμιδες Ἀχαιοὶ *Il.* 17.370
τόφρ' ἄλλοι Τρῶες πεφοβημένοι ἦλθον ὁμίλῳ *Il.* 21.606

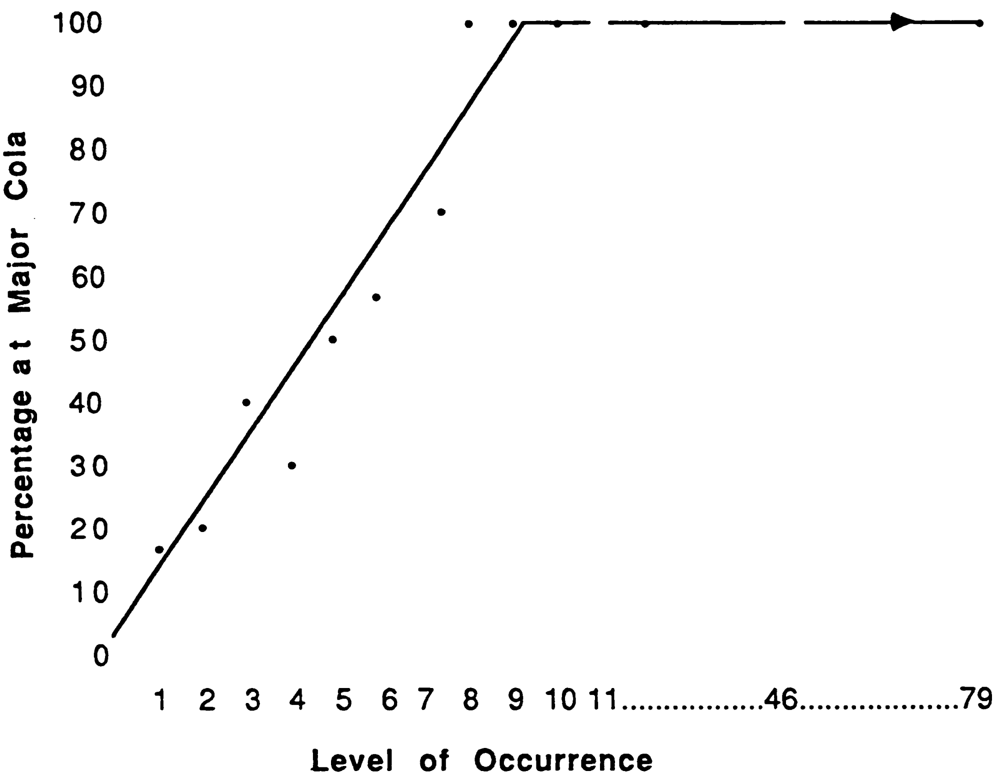
Graph I: The Formularity/localization Curve



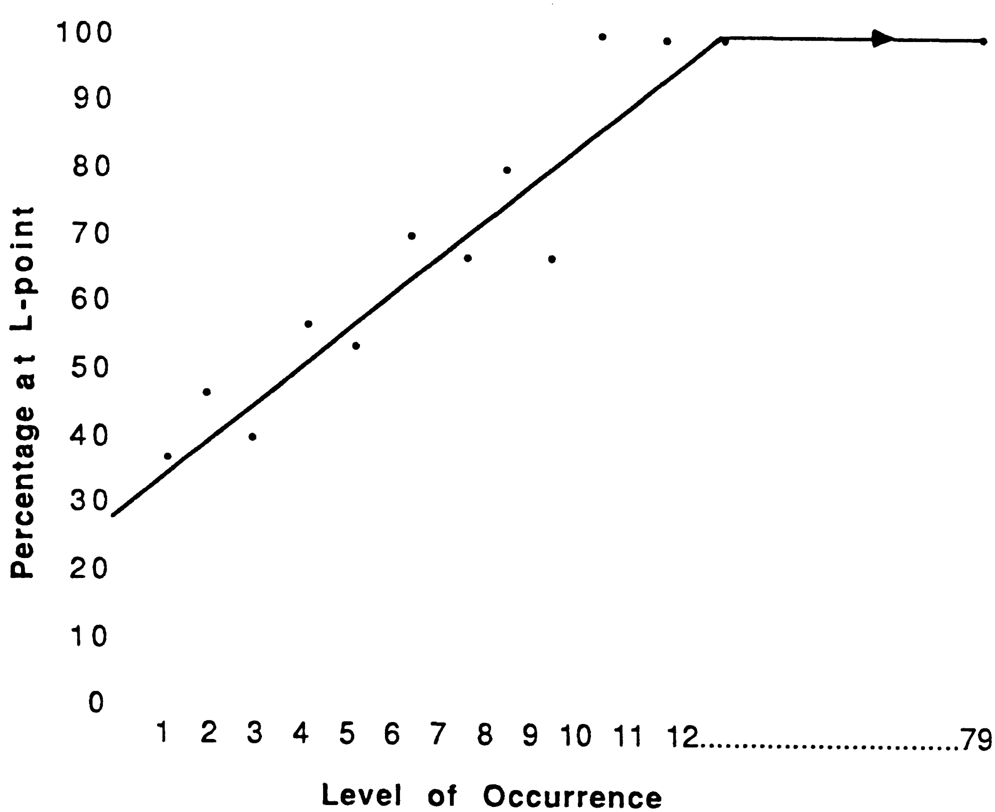
Graph II: Frequency of Noun-epithet Occurrences



Graph III: Frequency of Occurrences at Major Cola



Graph IV: Frequency of Occurrences at L-point



Graph V: The Regularity/localization Curve