

RHIME, ASSONANCE, AND MORPHEME ANALYSIS¹

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1. Analysts, returning from their impressive conquest of phonology, bring with them the weapon that stood them in good stead: the principle of oppositions, of absolute identity versus absolute difference. It is only natural that a weapon which proved itself in one field should be favored by those who used it there when they pass to another field, much as sea power may be favored in an air age because it won earlier wars for its advocates. In the little that has been done with morpheme analysis up to now, linguists have displayed their bias for identity-difference.² But new wars demand new weapons, and a different kind of work demands different tools. I shall try to show that in describing the morphemes of English, the principle of identity-difference will have to be modified to make room for mere similarity-dissimilarity.

2. IDENTITY-DIFFERENCE VERSUS SIMILARITY-DISSIMILARITY. The phonologist regards any two phonemes *qua* phonemes as absolutely distinct, with whatever similarities may subsist between them being relegated to another level of investigation. This procedure of absolute oppositions (whether reified, as by some linguists, or frankly regarded as expedient, as by some others) has worked very well with phonemes, which may number a dozen, or forty, or a hundred. It even works with morphemes when one addresses only a few morphemes, as analysts have done thus far in English within the narrow zone of tense, number, case, and one or two other safe-and-same inflexions. But the exploring analyst must face the multiple and pluralistic stock of English with its twenty or thirty thousand discrete—or not so discrete?—forms popularly used.³ Are absolute identity and opposition any longer practical, and is the area not too crowded for such compartmentalization? Whatever formulations we may eventually set up on the basis of lines sharply drawn, it is first incumbent on us to find our land-

¹ For their valuable suggestions I am indebted to Allen Walker Read and to Fred W. Householder, Jr. The latter's help has been extensive, so much so that not all of it can be explicitly acknowledged in these footnotes.

² Voegelin looks to 'equivalence in meaning' to determine morpheme alternants (Language 24.132, 134); Bloch separates into two or more morphemes verbs that have even a slight difference in their meaning and that have identical bases, if the conjugation type differs in the barest degree (Language 23.405).

³ Twenty thousand probably lies somewhere between the extremes of active vocabulary on the one hand, and recognition vocabulary on the other, of a highly literate person. An approximate figure is the best we can do, though if a comparison with phonemes is valid, our reliance upon it is not misplaced: alphabetic writing was also an approximation, which roughed out the phonemes before phonemic theory was hit upon. Now in what proportion did phonemic theory reduce these crude original phonemes? By fifty per cent? Let us suppose a reduction of seventy-five per cent in the number of our morphemes, once all duplications have been weeded out—the resulting figure of five thousand is still far larger than any complement of phonemes. On the other hand, it is unlikely that any such reduction, using the methods proposed by Bloch, could be effected: his system calls for such an apparatus of homonyms and other subdivisions (?? a separate morpheme for *not*, *bit*, *get*, *have*, etc. divided into two words) that the total might be increased rather than reduced.

marks, and to do so, to treat facts which are themselves, at the level of exploration, loose facts, we need to trace associations rather than identities.⁴

3. INFERENCES FROM PRESENT PROCEDURES. Though not much has been attempted in English morphemics aside from the most easily systematizable phenomena of paradigms, a few hints have been dropped as to what might be done should these safe moorings be cut. Bloch writes: 'the base of the verb *sing* has the alternants /sit/, /sæt/, and /sʌn/ before the inflexional morphemes, but the alternant /sohn/ before a zero derivational suffix in the noun *song*'.⁵ He adds, in a significant footnote, 'It goes without saying that historical considerations play no part in structural description. The actual historical relation between *sing* and *song* is irrelevant here; all that is relevant is their morphological relation in the structure of present-day English.'⁶ Hockett lets fall a more conservative hint: 'Even if *men* were an isolated case in English, this resemblance would be worthy of mention. But it is, of course, far from isolated; we have also *mouse:mice, foot:feet, woman:women* (if *woman* is a SINGLE MORPHEME), *slide:slid, sing:sang*, and many others.'⁷ Says Nida: 'The forms *him, them, and whom* bear a partial phonetic-semantic resemblance to each other, and we are obliged to regard *-m* as a morpheme (even though its distribution is very limited).'⁸ In most dialects *whom* would have to be dropped, leaving only *him* and *them*; Nida also lists⁹ the forms /wəz/ and /wɜ:/ as containing 'a recurrent partial, namely /wə-/.'

⁴ This is not to say that a given instance of similarity may not be reduced, at the level of psychology, to a something held in common which is identical, against two somethings, or sums of things, which are different. Identity at this level would be, perhaps, the stimulation of a single nerve by two stimuli separately presented—the identity resting upon the oneness of the nerve stimulated. When we attribute the sameness to the stimuli, however, we are extrapolating. I would go along with the assumption that similarity and identity are quantitatively distinguished, and that similarity can be reduced to identity plus some difference. But I do not believe that we are equipped to discover enough identities in morphemes to justify the extrapolation and make the concentrated search for identities in English worth while.

⁵ To Nida (Morphology, Ann Arbor 1949, p. 72), *song* would not be an 'alternant' but would contain a 'replacive morpheme.' The latter may consist of nothing more than stress (cf. *ibid.* 74), or, what is still more nebulous, an epiphany of stress (Language 24.441). This is more realistic, but since there is utterly no way, in English, of predicting where such replacives will fall, what function they will perform (in verbs like *heave-heaved-hove* they are transitive-intransitive markers as well as tense markers), or even what form they will take, it is hardly rewarding to do more than list them.

⁶ Language 23.407 (1947).

⁷ The emphasis is mine.

⁸ Language 23.339 (1947). But can etymology be so easily dismissed? Undoubtedly it ought to be, and synchronic analysis would like to be regarded as uninfluenced by the etymology of the forms that they analyze. That they do not have the courage of their convictions is shown, however, by the almost complete lack of examples, in their works, of any analysis that cannot be justified on etymological grounds. When etymology and non-etymology are in the balance, the former is likely to weigh more heavily, as in Nida's implied analysis of *solemnize* (Morphology p. 30) (English has no formulable *-nize* for *-ize*).

⁹ Language 24.423 (1948).

to *Ibid.* 429.

We infer: (1) that etymology is irrelevant; (2) that given phonemic similarity and semantic similarity of two forms, we have enough to justify analysis into separate morphemes one or more of which have constant meaning and are held in common, the difference being due to other morphemes not held in common and having meanings (including zero meaning) of their own; (3) that syntactic classes may be crossed (*sing* is a verb, *song* is a noun); (4) that a distribution as narrow as two forms is sufficient to establish a morpheme; (5) that differences in phonemic shape may be rationalized (*song* is an alternant of *sing*). Since (5) is a concession to necessity, if we can avoid it in establishing a given morpheme, our case will be all the stronger.

4. IMPLICATIONS OF THESE INFERENCES. Making bolder than has been attempted thus far, let us see what happens when we apply the reasoning of the preceding paragraph.

Syntactically *often* and *off and on* are the same: *He does it often, He does it off and on*. In view of the kinship in meaning (degrees of frequency) and of the formal similarity, the two contain the same morpheme /ɔfn/, without suffix, or with zero suffix, in *often*, and with the added suffix /ɔn/ in *off and on*.

If *shine n.* and *shine, shone v.* contain the same morpheme, then *sheen* (etymologically 'beautiful' but now a type of 'shine') contains it too.

If *handle* (the act) and *hand* (the organ performing the act) contain the same morpheme, then *hear* (act) and *ear* (organ) likewise contain the same morpheme, despite probably dissimilar origins.

If *sing* (the act) and *song* (that upon which the act is performed)¹¹ contain the same morpheme, then the same is true of *see* and *scene*.

Probably no native speaker can escape the impression that gangrene is attended by a greenish color of the necrosed flesh. Hence *gan/grene*.

If the etymologically related *sue-suit, line-life, trail-train, crumb-crumble, sears-sew, show-showed, drip-drop, and shake-shock*, and the doubtfully-etymologically related *harrass-harry, tackle-attack, ruffian-rough, and knock-knuck* are to be analyzed as pairs showing the same morpheme, the same must be done with the etymologically unrelated *cover-lager-over, crape-drape, sway-swasion, blood-blow, strut-straight, face-phiz, bride-breed* (or *bride-brood*), *bride-broad* (the latter a name for 'woman'), *futility-witity, discomfort-discomfort* (discounting the common affixes), *coffin-sarcophagus, mold-mildew, slim-lean, tie-tigh, dope-dip, wile v.-while v., sponge v.t.-expunge v.t.*

We need not limit ourselves to pairs, but may look for larger patterns. One tempting example is the cross-patterning of /gl/ 'phenomena of light' and /h/ 'phenomena of movement' with (1) /tr/ 'intermittent,' (2) /ow/ 'steady,' and (3) /er/ 'intense':

glitter *flitter*
glow *flow*
glare *flare*

¹¹ Here using *song* as an entity apart from the act of singing: *A composed a song, B sang it, or What he sang was not so much a chant.*

I leave the question of /gl/ and /h/ to the later consideration of the large cluster of forms attached to each one. As for the terminal 'morphemes' in the above words, we find (1) evidenced also in *titter*, *jitter*, *bitter*, *iterate*; (2) in *slow*, *grow*, and *low*; and (3) in *blare*, *stare*, and *tear*. But a number of things mar the neatness of the pattern: we might add *gleam-flame*, but *flame*, along with *flare*, and also *flicker* and *flambeau*, has to do with fire and hence 'light' as much as 'movement'; *glide* refers to movement, not light, and *flee* is a glance, not a movement. Still, these difficulties can be explained away as homonyms if there is any value in doing so.

A pattern which shows numerous intersections but little or no cross-patterning is that of /kr/ 'bent': *crawl* ('slow'—encountered also in *drawl*), *cringe* ('winching pain'—also in *twinge*), *creep* ('secretive'—also in *peep*), *crouch* ('slowly' or 'low'—in *slouch* and *couch*), *crumple* ('wrinkle'—also in *rumple*¹³), and probably others.

Patterns as well as pairs may show the complete irrelevance of etymology, despite close formal and semantic kinship. One such is the *-amble* family, all of whose members except *bramble*¹³ have at least one homonym referring to locomotion and differing in origin from the others: *amble*, *ramble*, *scramble*, *gambol*, and *shamble* (*scamble* may relate to *shamble* or *scramble*). Etymological morphemes may be recombined into new 'morphemes': the *-ast* of *must*, *rust*, *crust*, *just*, and *dust* evinces perhaps the synonymy of 'surface formation'¹⁴; but with the increment of the suffix *-y* the resulting *-usty* in *musty*, *rusty*, *crusty*, *justy*, and *dusty* gives several clear-cut synonyms for 'old'. (Compare *but* dissimilar to *fat* but *batten* v. i. almost precisely synonymous with *fallen* in some dialects). *Irre-*, combining *in-* and *re-*, means 'utterly'.¹⁵ *Lessness* has become so suggestive of 'indifference' (*lawlessness*, *carelessness*, *worthlessness*, *shiftlessness*) that I unconsciously used the term *librariness* in the sense of 'indifferent use of a library'.

5. THE TRAP OF MEANING. Meaning has, with good reason, been shunned in the handling of phonemes, except the minimal 'any difference in meaning at all' necessary to establish contrasts like *lag-lag*. Some would like to continue doing this with morphemes.¹⁶ But meaning is the criterion of the morpheme, and unless we are willing to develop a theory of meaning and apply it consistently, morpheme analysis will have heavy going. I list some of the facts that must be accounted for in such a theory, and try to show how each one affects the analysis of one or more morphemes:

Meanings occur in clusters. There are few words in English that have but

¹³ Householder assigns *crumple* and *rumple* to a group that also includes *wrinkle*, *dimple*, *crinkle*, *crumble*, *bundle*, and, *mangle*, all with homorganic nasal plus stop plus /al/.

¹⁴ But ask what someone's feelings are as to the difference between *bramble* and *brier*, and the reply is likely to be that brambles are *rambling* thorny bushes.

¹⁵ Suggested by Householder.

¹⁶ Bolinger, *Word Affinities*, American Speech 15:69-70 (1940).

¹⁷ Bloch notes the morphological identity of *sew* and *soo*, and says wistfully 'Sew and soo differ only in meaning (and spelling), but perhaps not more widely than different senses of certain verbs listed only once.' *Language* 23:413 (1947).

one clear-cut meaning. In analyzing *dusty*, for example, are we to prefer the primary meaning 'covered with dust' and analyze *dust/ly*, ignoring the derived meaning which analyzes *d/ustly*? And in what sense is a meaning 'primary'? It may be primary historically, but etymology is banned; it may be primary statistically, but there is no time to make repeated counts whenever the wind blows from a different direction. This could be obviated by recognizing each sense as a separate form and analyzing accordingly, but the result would be an unmanageable number of derivatives. A refractory case is that of *pack*. We have the words *pack*, *packed*, *package*, and *compact* (pack of cosmetics) which seem to contain the same morpheme. Since *pack* v. is defined as 'to put together compactly', and also because of the formal similarity with *compact*, we should have to include the adjective *compact*. Now *compact* also includes 'pact' in its cluster of meanings, but this meaning is comparatively remote from that of *pack*. Do we then analyze *compact* twice, once for the adjective *compact*, the verb *compact* in one of its senses, and the noun *compact* in one of its senses, and a second time for the other senses of the verb and noun? The noun *flight* has a neat cluster of meanings that do not make for splitting it into two homonyms; yet it belongs to both *flee* and *fly*.¹⁷ Or take *ideal*. It includes in its cluster the principal meanings 'something worshiped' and 'something perfect'. The first of these verges upon *idol*, the second upon the chief modern sense of *ideal* ('a perfect state of happiness'). We can hardly identify *ideal* with either unless we identify it with the other, and it is hardly possible to identify it with both unless *idol* and *ideal* are themselves identified. But this kind of ad hoc solution is so cavalier with the obvious main differences in meaning between *idol* and *ideal* (against the twofold unity of *ideal*) that were we to attempt it there would be no good reason for excluding *idle* (since idyllically people should not have to work), whence we would want to take in *dole* (that upon which idle people live), and from there *doleful* (the way people on the dole feel), and so on.

Continuity of meaning is rare among sub-word morphemes, if they are traced through all of their occurrences, for the free form is almost invariably more or less than the sum of its parts. Stanley S. Newman expresses it as follows: 'In spite of rationalizations from etymology regarding the semantic force of the component elements in *dispile*, the word is a close-knit semantic unity.'¹⁸ He distinguishes two types of affixes, 'fused' and 'unfused,' which only partly solves the problem because *all* affixes are affected in some degree. In Von Planta's title *Worterbuch* the 'same' morpheme appears twice, once fused and once unfused. The base is also likely to be affected: derivatives of *facere* defy attempts to base a potentially infinite series upon them, even when the items are selected so as to preserve the greatest formal similarity. *Defect*, *affect*, *perfect*, *inflect* are vaguely related in meaning ('having or keeping a state or condition'—a meaning chosen ad hoc, for it is not primary in any of them). *Confact* and *effect*

¹⁷ If this problem is solved by positing two morphemes, then *modest* is also two morphemes, one (with a moral sense) which can combine with the prefix *in-* and one (non-moral) which cannot: we can have a modest house but not an immoral one.

¹⁸ *Word* 2:182 (1946).

(verbs) are mutually related, but bear little resemblance in meaning to the others. *Perfected* is entirely out of the orbit, and further derivation only confuses the picture, for in their primary meanings *affection* and *affect*, *defection* and *defect*, and *confection* and *confect* have separated completely, while *fascinations* and *fascious*, and *fact* and *fiction* (popularly associated), have brought together the results of disparate origins. Where a form is infinitely productive, as with the pluralizing morpheme, we do not go astray; but with narrowly limited distribution 'potentially infinite' founders on 'actually finite.' When there is sufficient phonemic bulk, as in *Greco-*, *pseudo-*, *-ology*, *-ism*, and *-itis* we have enough to identify the morpheme, or react to it, when it is alone (proved by the fact that the three suffixes named here are now and then used as words). But in the diminutive /ɪ/, without much consistency in either sense of the word, there is little anchorage for meaning: it is obvious in *false*, dead in *bully*, and non-existent in *carrie*. In many of its occurrences it is hardly more than a sub-morpheme differential, as, to reduce it to an absurdity, one might find in /h/ versus /d/ in *hog* and *dog*, where /h/ = 'porcine,' /d/ = 'canine,' and /ag/ = 'animal.' The problem of 'morphemes' with low phonemic content will appear in bolder relief as we treat more extensive constellations of related words.

Meanings fluctuate with speech level. To a person of some sophistication, *breakfast* may contain two morphemes, clearly identifiable as to meaning and with the compound the clear resultant of the combination. To others *breakfast* is not analyzable at all.

Meanings vary in specificity.¹⁸ A working principle would be that THE LOWER THE SPECIFICITY OF MEANING, THE LARGER IS THE NUMBER OF FORMS THAT MAY BE SUBSUMED UNDER ONE MORPHEME. Theoretically it would be possible to find a few lowest common denominators for all the words in English, thereby, with extensive rationalization, deriving them all from those few 'morphemes.' Low specificity may be illustrated by a few absurd examples. Take, for instance, the concept of 'energy.' Now the manifestations of energy comprise virtually every verb in the language, and a large proportion of nouns, adjectives, and adverbs as well. But 'energy' is deceptively clear-cut and unified, and if we are unaware of the level of specificity at which we are operating we may seize upon the zero *erg* 'unit of energy,' set up *irk* 'energetically annoy' as an alternative with zero suffix, and go merrily on to:

1. *w/ork* 'apply energy' (prefix also in *w/ill*)
2. *sh/irk* 'fail to apply energy' (prefix also in *sh/all*, *sh/ucks*, *psk/aw*)
3. *p/erk* 'enliven, apply energy to' (prefix also in *p/ep*)
4. *l/irk* 'hang about actively' (prefix in *l/oll*, *l/allgaga*, *l/oier*, *l/inger*, *l/of*)
5. *m/irk* 'active, fluid opaqueness' (prefix in *m/ud*, *m/oi*)
6. *j/irk* 'snatch energetically' (prefix in *j/olt*, *j/iggle*, etc.)
7. *B/irk* 'kill energetically' (prefix in *b/atter*, *b/low*, etc.)
8. *d/irk* 'wicked, energetic little knife' (prefix in *d/agger*)
9. *k/irk* 'place where clergyman works' (prefix in *c/lergy*, *c/urate*)

¹⁸ The semanticists' 'level of abstraction.'

10. *qu/irk* 'a lightning notion of energetic turn of character' (prefix in *qu/ern*)

11. *cl/erk* 'hard-working person'

Or by taking the low-specificity 'having to do with the earth' we are able to relate *l/amp*, *tr/amp*, *st/amp* (all 'earth-striking'), *d/amp* (a typical earth condition), *c/amp* ('fasten down'), and *r/amp* ('slope of earth').

Low specificity has been seriously resorted to in order to demarcate certain English affixes. Nida refers²⁰ to the 'suffix' /-er/ in *hammer*, *ladder*, *spider*, *otter*, *badger*, and *wader* as having some sort of 'grammatical meaning,' which he refrains from defining.²¹ The suffix -age demands recognition because the majority of its bases exist as independent morpheme words (*breakage*, *mileage*, *stoppage*, *wreckage*, *sterage*, *package*, *leakage*, *truckage*, *drayage*, *cartage*, *trackage*, *baggage*, *luggage*), and because it is still active (*voltage*, *amperage*, and *wattage* are comparatively recent, and *gruntage* is a humorous coinage²²). We cannot say that its meaning is 'nounness,' since it is added to bases that are already nouns; and it is impossible to assign it a logical meaning broad enough to include all that needs to be included without including too much—without taking in, for example, *nonage*, whose ostensible analysis is *non* plus *age* 'majority.' Yet by not taking it in we spoil the high-specificity comparison of *nonage* and *dotage*, unrelated etymologically.²³

From the standpoint of the analyst, the *irk* and *amp* connexions seem posterous. But such low-specificity kinships are by no means irrelevant to the description of English—description as distinguished from formulation.²⁴ Take the low-specificity 'sinister' and apply it to words in /swɪ:/ *coul* (symbol of the sinister in birds), *prowl* (sinister lurking), *fowl*, *scowl*, *growl*, *howl*, *rowel*, *bowel*, *jowl*. To test the power of this echoic family the terms *wimple*, *toque*, and *cowl* were written in view of a class of twenty persons, who were told that all three signified a type of head-dress, and requested to write on a slip of paper the one of the three which suggested to their minds something sinister or bad (no mention was made of rime). It was assumed that the majority of those present would not know the precise signification of any of the terms, but in order to make certain of this, the subjects were given a few seconds, after making their choice, to write a definition, if they knew one, of the word they chose. Only four did this (all had elected *cowl*), and of the four three gave the (possibly monkish and hence vaguely sinister) equivalent 'hood'; the fourth gave 'hood' but in the neutral automatic sense. The choice was *cowl* 15, *toque* 4, and *wimple* 1. The influence is plainly associative. *Wimple* could not be favored because of the innocent rime with *dimple*, *pimple*, *simple*.

Meanings differ in intensity.—When I refer to the *shoemaker* around the corner, I use a term that, as applied to him, is analyzable, for he is a *maker* (a connotative word which not only identifies him but fits him into a class) and he works in

²⁰ Language 24.430 (1948). What of *ly/re* (cp. *li/er*), *fre*, etc.?

²¹ Nida also recognizes differences in meaning which are sub-morphemic. Ibid. 433.

²² George Woodbury, John Goffe's Mill, New York, Norton, 1948.

²³ Householder suggests that formulation may be possible if several homophonous suffixes are set up, an arbitrary procedure.

²⁴ And have actually been used in formulation. See Word 5.32 (1949).

shoes. When I address my friend *Shoemaker*, however, I use a term that is completely denotative and hence unanalyzable. This is the problem of all proper names. They have little or no meaning in the connotative or intensive sense, but merely point; and they point as wholes—their parts, whatever they may be and whatever their origins may have been, do not of themselves point (i.e., are not separately denotative) or classify (i.e., are not separately connotative). *John/y* may be analyzable to the extent that its suffix classifies the object as small, although it is doubtful that -y is more than a differential here. *Joan, Jane, Jean, Jan, Janet, Jennete, Jenny, and Juanita* cannot be analyzed as containing the same morpheme, for aside from etymology they have nothing in common except the fact that all are female names—a level of specificity so low that if it is resorted to there is no reason not to include *June, Ginny, and Regina*.

In an ideally constituted lexicon, the elements of the word would relate it to more inclusive genera precisely and scientifically (condensation), and the word itself would refer to a species, or to a less inclusive genus, something at a higher level of specificity (denotation). This the botanist achieves, not fully but in part, with that portion of his terminology which names a species by combining the generic name with modifiers, e.g. *Brassica campestris*, *B. rapa*, *B. oleracea*, etc. Morphemic analysis of such forms is significant—they have been synthesized for the express purpose of showing interrelationships. The essential denotativeness of English nouns, however, is shown in their contempt of nice interrelationships, their resistance to meaning more than one definite thing at a time. The *Brassica* family itself has, or had, a base form *cole* whose meaning comprehended all the members of the genus. Yet despite its importance to nutrition and the resulting familiarity of the words, the popular names instead of drawing closer to *cole* have dispersed from it, and the uncompounded base word has not only disappeared from everyday speech but its derivatives have become more and more disguised. *Cabbage* loses *cole* entirely, *brussels sprouts* does not acquire it, the accidentally similar *broccoli* evolves no further, *colza* competes with *colseed* and *kale* with *borecole*, while *colewort* is corrupted to *collard* and *collet* and *col-slaw* to *cold-slaw*. THE NEED TO DIFFERENTIATE OUTWEIGHS AND SUBMERGES THE NEED TO INTERRELATE in our concrete vocabulary; where a relationship causes confusion it is dropped, as witness the old pair *starboard-larboard-now starboard-port*. *Kohlrabi*, *kohlrabi*, and *cauliflower* are denotative words whose ties with *cole* have been weakened to the point where they may suggest, but no longer specify, an interrelationship. Their vague suggestiveness probably contributes a sense of fitness when one reflects upon the family relationship; but this is not enough to sustain a 'morpheme' /k-1/ when a realistic description shows that the language itself has moved away from it. To this extent historical linguistics is relevant to structural analysis.

Finally, meanings vary in their degree of attachment to a given form. 'Sinister' is more closely attached to *howl* than 'energy' is to *quirk*. The attachment must be close in order to enable us to single out ONE element of the word as 'having' that particular meaning and therefore as responsible for the presence

of that meaning in the whole word. It is easier to say that /aw/ 'means' sinister (making *gr/owl* a 'sinister *gr/unt*') than to say that /ork/ 'means' energy (making *qu/irk* an 'energetic *qu/eerness*'). But, withal, attachment is only a question of degree.

Problems of meaning do not occur singly, but interlace in a bewildering way. Take the -oil family. As a first step, it may be divided into an orderly set of pairs:

toil-moil 'to work' *roil-soil* 'to dirty'
boil-broil 'to cook' *foil-spoil* 'to frustrate'

Moil, however, includes in its cluster the meaning 'to dirty'; in this sense, then, we have

roil-soil-moil 'to dirty'

By taking a lower-specificity meaning, 'to mar,' we add *spoil*, and get

roil-soil-moil-spoil 'to mar'

But in *roil* and *boil* we can factor out a reference to liquid; since this also affects *oil*, we get

roil-boil-oil 'liquid'

Etymology, however, associates *roil* and *rile*, and since both have in common 'to stir up,' we may, instead of -oil, take -l as our constant and get

roil-rile 'to stir up.'

This same process is equally valid, though not etymological, in

coil-curl 'round,'

and resorting to the roundness of the movement of stirring, and the very low-specificity association of roundness and smoothness, we have

coil-oil-boil (cp. 'rolling boil')-*curl*.

6. 'DISCOVERING' MORPHEMES. Says C. F. Voegelin, 'To investigate the entire linguistic structure of any language requires two discoveries. First, . . . we must find the phonemes; secondly, we must find the morphemes.'²⁸ 'Discovery' is not the same in these two areas. No speaker of any language is more than dimly conscious of the phonemes of his language until they have been set up by elaborate and more or less indirect processes and then taught to him. Every speaker must know something of the morphemes of his language before he can speak it (though the non-speaker may be ignorant of both). Or are these morphemes of which the speaker is not at all aware, and which must be 'discovered' by indirect processes, even when the analyst is himself a speaker, similar to those used in phonology? The answer depends partly upon our definition of 'aware-

²⁸ Language 24.133 (1948).

ness.' If we mean the ability to talk about a thing with little or no reflexion, then we can probably say that despite (and because of) its automaticity, the average speaker of English is aware of the pluralizing morpheme, since he could make a quick and sensible answer to the foreigner's question 'I know how to say *an egg*, but how can I speak of more than one?' This awareness would vary from speaker to speaker where certain other recurring phenomena are concerned, but if we entirely rule out such naive reactions we open the door to fantastic 'discoveries' some of which have already been detailed, for we have lost the key to the consistent part of consistent recurrence. All speakers are forced to correct, to paraphrase, and to explain constantly in their verbal intercourse, thereby developing knowledge of their medium as well as skill in its use. We depend upon them even at the lowest level of 'mere difference in meaning,' for things are not abstractly different but different in some respect, which respect must be known to be judged.²⁶

What are we to do with such 'discovered' morphemes when the speakers of the language show that they do not believe in them? One could argue plausibly for a common morpheme in *make* and *break*, in view of popular associations like *This experience will either make him or break him, or a make-and-break circuit*. But while the etymologist can point out, and the morphemist discover, that the same morpheme exists in *arrows* as in *or*, assuming both to be found in the same dialect, this does not square with a full description of the language, in which we find the alternant *arrow*—proof that if morphemes depend on meaning, the two words do not contain the same morpheme for many, probably for most, speakers. Formulation of a common morpheme is opposed by a full description of English.

7. CONVERGENCE AND DIVERGENCE. Let us suppose that it should become the custom in our society, all the time or a good part of the time, to prepare *bacon* by *baking* it. The two words would have converged sufficiently to create a common morpheme /beyk/.²⁷ Such actually happened with *whetstone* and *wet*, and with *belly* and *bell*. When the noun *rocket* was converted into a verb, 'to dash headlong,' it became synonymous with the verb *bucket*; convergence made it possible to discover a common morpheme. When the verb *kid* 'to hoax, humbug' came to be used in the sense 'wit, tease', it drew close enough to the older verb *cod* to share a common morpheme. It seems obvious that morphemes dependent upon such haphazard events, or at best upon a mutual attraction that cannot be predicted, would be too unstable to be worth recording; yet until better principles of analysis are laid down there is nothing to debar them, and they have undoubtedly operated in cases where etymologists would recognize a common morpheme—*scrawl* and *scribble*, for example, drawn to *scribe* and *script*. It is more plausible to find a common morpheme in *kid* and *cod* than in *sing* and the *song* of *He sold it for a song*.

²⁶ Cf. Nida, the answer to the difficulty of identifying morphemes must be found at least partially in the native speaker's response to the meaningful units in his speech. Language 24.435 (1948).

²⁷ In fact, their both being handled in the same kitchen is sufficient for this. Householder reports that *baking powder* was *bacon powder* to him as a child.

Sans etymology, a problem of convergence may be refractory indeed. Take the nouns *chute* and *shoot*. These have converged to the point that the Century Dictionary says '*Chute* coincides in pronunciation and sense with *shoot*, *n.* < *shoot*, *v.*; but the two words are independent of each other.' Independent, of course, etymologically; to the synchronic analyst they are one and the same. But, in their convergence, have they also attracted the cognate verbs? The popular phrase to *shoot the chutes* indicates something of the kind, yet *chute v.* is not the same as *shoot v.*, in view of the preteritis *chuted* and *shot* (but again, the nonce word *parashot* partially erased this distinction). The convergence has caused complications in another quarter. It causes a minimum of trouble with *parachute* and *bumbershoot* 'umbrella,' if one is willing to accept a generous dose of metaphor; but *parashot* and *parachute* are popularly identified by the OTHER half of the related words, and the fact that it is *para* which here stands for the object in question is proved by the coining of *paratroops*, in which only *para* is left. Can a situation of this kind be efficiently dealt with by oppositions? It would seem that there is simply the fact that *parachute* as a whole resembles *bumbershoot* and as a whole resembles *parashot*, while *bumbershoot* as a whole resembles *parachute* on the one hand and *umbrella* on the other.

The opposite problem may be phrased as 'how far must two forms having the same morpheme diverge before they cease to contain the same morpheme?' A special case is that of forms deliberately altered in order to escape a taboo: e.g. minced oaths like *gosh* and *gad* for *God*, *darn* for *damn*, *shoot* for *shit*, *jeepers*, *gee-whizz*, *gee-whillikers* for *Jesus*, etc.²⁸ Do these have the 'same' morphemes as their originals—for speakers who recognize the connexion?—for speakers unaware of any connexion? Most divergence is gradual. Does *dead* still contain the same morpheme as *did*, *sleed* that of *slid*, *serve* that of *serf*?²⁹ *Sinuel*, *snuffie*, *snuffe*, *sniff*, and *snuff* have diverged, but not far. A form may share other forms which resemble it but differ from each other. *Caliber* gives us *caliper*, the two relating as to 'measurement,' and also *caliver*, related to as 'gun'; but *caliper* and *caliver* are not akin in meaning. Are there, then, two *calibers*, two different morphemes, to be assumed to account for the divergence-cum-similarity? Two forms may remain in the same low-specificity area but diverge in a high-specificity area: *stroke v.* derives from *strike v.* and both still signify 'a touching motion,' but the one refers to a 'caress' and the other to a 'violent blow,' in the commonest of their senses. *Sever* has now diverged, except in the very lowest-specificity sense, from *several*, and has drawn closer to *severe* in the somewhat higher-specificity sense of 'cutting'—is it then to be reanalyzed? The identification of the now diverged *planning* and *plannive* evokes surprise in anyone but an etymologist; yet their connexion in meaning is obvious once it is pointed out, and by existing rules they contain the same morphemes.

Homonyms are a special problem. *Shorts* 'middlings' and *shorts* 'underdrawers' have diverged in meaning but not in form. Purely formal analysis must identify them unless 'form' is taken to embrace a series of contexts that cannot be stated

²⁸ See Mencken, American Language, Supplement I, New York, Knopf, 664-5 (1945).

²⁹ Nida combines *serve* and *serf*, Morphology 72.

in grammatical terms. Accurate description demands separation in forms such as *melle-mela*, where the visual morpheme of the first, the same as in *felle*, bears witness to the duality.

8. DIALECTAL AND INDIVIDUAL DIFFERENCES. Meaning is personal, and varies throughout the lifetime of the individual. As a child I related *first-rate* with *straight*—both, to me, 'contained' *straight*. The linguist naturally rejects such idiosyncrasies, but with dialectal differences he faces a more delicate problem. For English at large, *scary* and *leery* would not, in all likelihood, be regarded as having the base morpheme in common. Where *scary* becomes *steery*, however, the division into *ski/ler/y* and *l/er/y* is more insistent.

9. ATTRACTION. When two forms are encountered in the same area of greater or lesser specificity of meaning, and are also closely similar in form, they are likely to exercise a kind of magnetic attraction one upon the other. *Disburse* is more forceful than *spend* because it suggests intensive *dis-* plus *burst*. The word *pick* has veered from one of its meanings ('select') to another in the phrase *Why pick on me?* because of the formal identity of *pick* v. with *prick* v., similarity with *peck*, *poke*, *pike*, and a predisposing context. When one of the attracting elements is a whole system to itself, the gravitation becomes more pronounced. There exists in English a family of words with the fairly low-specificity meaning of sharp movement plus dull (or dull ringing) sound: *plunk* (*He plunked down the money*), *clank*, *clink* (*They clanked him over the head*), *spank*, *dunk*, *hank*; and there is a related pair containing the vowel /ɔ/ in which the ringing is not dull—*bang*, *gong*. The formal similarity of *conch* with these two groups is apparent, and an expression like *He hit him on the conch*, meaning 'on the ear,' could date back a long way. Somewhere the shift was made from 'ear' to 'nose,' and then, because of the real or imagined resonance of a blow on the head, *conch*, or *conk*, became 'head' (now unknown to some speakers except as a verb, 'to strike on the head').³⁰ The orbit of *conch* was thus contracted toward *clank* and gave us *to conk one on the head*—but not contracted all the way, since one may be *clunked* on the posteriors but *conked* only on the head.

The attraction may be extremely remote. *Renounce* is felt to be more vigorous than *dejure* because of the echo of *bounce*, *pounce*, *flounce*, *bourne*; but it would be too much by any standard to say that it contains the same morpheme.

Most speakers of English, when they hear *ambush*, are likely to think of someone hiding in the bushes. Likewise with *hierarchy* one tends to hear the element *higher*.³¹

Now the linguist is bound, by habit and training, to abhor the kind of vague resemblance that I point to here and that I stress as unavoidable in the accurate description of the English lexicon. It is possible, however, to demonstrate their validity statistically. Elaborate tests are not necessary, for the evidence is abundant. I offer a brief study of *literally* made on a group of twenty-five students, to determine the extent to which *litter* has influenced it (evidenced in *He reads*

³⁰ Further extended onomatopoeically in *The engine conked out*.

³¹ A. W. Read has collected a quantity of such 'submerged' words. See his article *English Words with Constituent Elements Having Independent Semantic Value*, in *Philologica: the Malone Anniversary Studies* (Baltimore, Johns Hopkins Press, 1949).

*current topics and litterly [sic] buries himself in trade magazines*³²). The following sentences were presented, to be graded A for good, B for fair, and C for not very good, along with instructions to assume that some were better than others and to grade them relatively. The sentences and the votes were:

- | | | | |
|---|-----|-----|-----|
| 1. He was literally overwhelmed with questions | A/8 | B/9 | C/8 |
| 2. The floor was literally covered with paper | 13 | 9 | 3 |
| 3. The ground was literally carpeted with leaves | 8 | 7 | 10 |
| 4. We were literally soaked with the wetting we got | 6 | 9 | 10 |
| 5. Her face was literally smeared with mud | 6 | 9 | 10 |
| 6. The garden was literally overgrown with weeds | 5 | 8 | 12 |
| 7. The air was literally black with smoke | 10 | 11 | 4 |
| 8. The dog was literally mad with excitement | 4 | 4 | 17 |
| 9. We were literally awed by the sight | 4 | 5 | 16 |
| 10. His head was literally crushed by the blow | 4 | 9 | 12 |

The 'C' votes on 8, 9, and 10 are significant, for there we find that the notion of 'covered' or 'filled' is absent—senses primary to *litter*.

As with intensive *literally*, so with intensive *scrupulously*, which, by virtue of the 'cleanliness' of *scrub*, *scrape*, *scour*, *score*, *scarity*, is practically monopolized by the 'cleanly' phrases *scrupulously clean* and *scrupulously honest*. *Limb* is more graceful than *leg* because of *slim* and *trim*. The French word *fleur*, dropped unceremoniously into English, was magnetized by the *fl-* words (*fling*, *flaunt*, etc.), and also probably by *air*, since a hair is had with an air; in any case, accommodating itself to the dynamics of English it has all but lost any suggestion of 'sense of smell.' When a group of cognate synonyms show definable divergences in meaning, those divergences often betray the gravitational pull of the rimes and assonances to which each word bears the greatest resemblance. The synonyms (1) *disstrait*, (2) *disstraght*, and (3) *disstracked* relate as follows:

- (1) 'absent-minded,' referring to a mind that has strayed (cf. also *away*, *pay* out a line, *ray*, *spray*, and other words suggesting centrifugal movement); (2) 'in troubled confusion,' with the unmistakable suggestion of 'wrought up' and 'frought with trouble'; (3) 'in frantic confusion,' with no close kinships but with more numerous attachments than its two congeners, to words suggesting vigorous action: *attract*, *react*, *contract*, *act*, *racked*—mostly clustering about the vowel /æ/.

Where we start with a close formal similarity, chances are good that two attracted forms will merge entirely or in part. Thus *burden* 'something borne, and burden 'restrain' have, in the *burden of proof* and the *burden of his speech*, become practically identical. But a given form may also echo a number of other forms not very closely related among themselves, and be attracted to them sufficiently to take on a cast of their meaning. To test this I offered the coined word *desiccate* (suggesting *decimate*, *castigate*, *devastate*, *desolate*, *desolation*, *degradation*, and other vaguely unfavorable words³³) to a group of twenty-

³² Topeka Daily Capital, 11 March, 1940.

³³ Compare the rough *reprobate* with the mild congener *reprove*.

eight college freshman students, giving them the choice of two contexts, *We were hungry because our provisions had been completely desiccated* and *We liked the picture because the colors were so nicely desiccated*, and asking them to choose the one that seemed more appropriate. The vote was twenty-two for the first, six for the second.

10. TWO CLASSES OF SUB-WORDS. Up to this point I have lumped together two classes of forms which pose much the same problem to formulation but which have to be distinguished for further description. They might be termed 'neutral morphemes' and 'affective morphemes' or 'phonesthemes'.³⁴ In view of their elastic boundaries, the latter should perhaps not be called morphemes at all, though since they fit the definitions of the morpheme I continue to treat them as such. In this way the problems that they pose will better reveal the need for some change in our technique.

Also it would be impossible to say where the neutral ends and the affective begins. I prefer to believe that once a phonation and a meaning are attached, the two thenceforth are felt to be appropriate to each other and become potential centers of phonesthetic radiation. Be this as it may, a large segment of English exhibits the traits that go to make up phonesthemes, as I shall now show.

11. PHONESTHEME PATTERNING. It is generally recognized that English contains a pool of forms interrelated through rime and assonance.³⁵ What is not appreciated is the vastness of the pool. A true description of this part of English shows not here and there a few pristine forms adhering together and forming neat little bundles of morphemes, but rather shows form A merging with form B, B with C (and farther away from A), C with D (and still farther away from A), and so on, until all resemblance of A with remoter steps is lost. Over-simplifying, we get a series of steps like:

ride (a horse) — *straddle*
spraddle — *spray*
sprinkle — *splat*
spatter — *putter*
bat — *bludgeon*
spike
spat — *put*
pet — *peeve*
miss — *huff*
gruff — *grumpy*
dumps
or a metastasized cancer like:
wriggle
wiggle — *wag*
squiggle
snicker — *nicker*
snigger
higgledy-piggledy — *jiggle* — *juggle* — *jigger*
struggle
struggle — *strive*
strain — *might and main*.

³⁴ I adopt the term *phonestheme* from Householder, who in turn has it from J. R. Firth.

³⁵ Cf. Sturtevant, Introduction to Linguistic Science, New Haven, 1947, 111-112.

We discover what looks like a tidy little set of synonyms for *utter*, all containing the same morpheme as *utter*: *mutter*, *stutter*, *sputter*, and *splutter*; but we must then deal with the fact that not only in these words, all of which may be used with the meaning 'say', but also in *shutter*, *futter*, and *putter* the meaning of 'discontinuity' is present, and we get a picture like the following, which, to be adequately drawn, needs more than two dimensions:

<i>sh/utter</i>		<i>r/umble</i>		<i>r/or</i>
<i>m/utter</i>		<i>m/umble</i>		<i>y/ell</i>
<i>sl/utter</i>		<i>sl/ammer</i>		<i>yl/ammer</i>
<i>sp/utter</i>		<i>sp/utter</i>		<i>sp/utter</i>
<i>fl/utter</i>		<i>fl/utter</i>		<i>l/atter</i>
<i>j/imjams</i>		<i>j/erk</i>		<i>j/itter</i>
<i>fr/utter</i>		<i>sk/itter</i>		<i>sc/atter</i>
<i>gl/eam</i>		<i>gl/ow</i>		<i>gl/itter</i>
<i>sh/utter</i>		<i>b/atter</i>		<i>b/low</i>
<i>sh/iver</i>		<i>b/ead</i>		<i>b/reak</i>
<i>sh/ake</i>		<i>qu/iver</i>		<i>qu/ake</i>
<i>sh/ake</i>		<i>qu/ake</i>		<i>qu/ake</i>

The couplings noted here are not artificial; among other evidence for their association we have phrases like *shiver and shake*, *quiver and quake*.

12. MORPHEMES AND SUB-MORPHEME DIFFERENTIALS. No sharp line could be drawn between those collocations of phonemes which, through relative uniqueness of one sort or another (unique context, unique content, unique position, etc., or combinations), show comparatively little deviation in meaning, and those which are shared by so many occurrences under such varied conditions that we must either admit extensive homonymy or not consider them as morphemes at all, in the sense that a morpheme depends on constancy of meaning. I have remarked the contrast between the diminutive /i/ and the pluralizing morpheme in point of productivity, and its contrast with affixes like *Greco-* and *pseudo-* in point of substance. The Century Dictionary calls many words containing it 'intractable to classification', as we discover for ourselves when we try to class *mauve*, *lovey-dovey*, *comfy*, *tavi*, and *buggy*. I have referred to it in these occurrences as a sub-morpheme differential.

Where, within or between morphemes and mere differentials, would our rimes and assonances fall? If we can show enough regularity in use, a rime or an assonance should be, or come very near to being, a morpheme. Let us take the form /gl/, already noted as referring to 'visual phenomena', and assay its possibilities as a morpheme. Discarding technical, learned, and dialectal words, we may list, in seven columns showing graduated fidelity to the meaning 'visual phenomena', all the base words, excluding obvious derivatives, that begin with /gl/:

	Visual	Non-visual
	<i>glacé</i>	
	<i>glacial</i>	
	<i>glacier</i>	
		<i>gladis</i>
		<i>glade</i>
		<i>gladiator</i>
		<i>gladiolus</i>
<i>glance</i>		<i>glamor</i>
<i>glare</i>		<i>gland</i>
		<i>glanders</i>
<i>gleam</i>	<i>glaze</i>	
	<i>glass</i>	
		<i>glee</i>
		<i>gleam</i>
		<i>glen</i>
		<i>glab</i>
		<i>glide</i>
<i>glim</i>		
<i>glimmer</i>		
<i>glimpse</i>		
<i>glint</i>		
<i>glisten</i>		
<i>glister</i>		
<i>glitter</i>		
<i>gloaming</i>		
	<i>gloat</i>	
<i>gloom</i>		<i>globe</i>
		<i>globe</i>
		<i>globe</i>
	<i>gloriate</i>	
	<i>glory</i>	
<i>glow</i>		
<i>glower</i>		
	<i>glaze</i>	
		<i>glue</i>
		<i>gluten</i>
		<i>glutton</i>
		<i>glycerin</i>

(Admitting dialectal words would favor the visual side slightly because of the—mostly Scottish—words *gley*, *glime*, *glisk*, and *glunch*.) If this necessarily subjective distribution is accepted, roughly half of the popular words in English that begin with /gl/ either have or are very close to the implication 'visual' (and running frequencies doubtless would compare equally well). As percentages go this is better than some of the paradigmatic suffixes, though of course /gl/ is never more than sporadically productive.

Although of a somewhat lower level of specificity, the monosyllabic rimes in *-ash* make an even better showing. The meaning is 'headlong,' 'hit,' and result of hitting, 'fragments.' There are twenty-one common or fairly common forms that fit: *ash*, *bash*, *dash*, *flash*, *gash*, *hash* (attracting *goulash*), *lash*, *plash*, *splash*, *clash*, *flash*, *slash*, *smash*, *gnash*, *gnash*, *gnash*, *crash*, *brash*, *trash*, *thrash*. (Neighboring *quash*, *squash*, *cosh*, and *slosh*, and probably also the re-jective exclamations *bosh* and *tosh*, suggest related meanings.) One dialectal word conforms: *blash*. Three existent forms do not fit: *cash* (which is nevertheless strongly suggestive of money in fragments), *tash*, and *sash* (with its obsolete congener *shash*). Twenty-four phonemically possible forms do not exist, though some of these, such as *quash*, embody low-frequency combinations. To test the potency of this rime, I offered to a group of twenty-eight students of freshman English the dialectal word *blash*, telling them that it was an invented word, suggesting no meaning for it and making no reference to rime or assonance, but asking each person to use it in a sentence that would show clearly what the word meant to him. Three had no opinion, four others used contexts too ambiguous to classify, and the remaining twenty-one employed the word in ways that clearly showed a relationship to words in *-ash* (17) or to *bl-* words (3) or to one or the other (1).

What has gone before is not an argument for saying that all rimes and assonances are related. To assume this would be as absurd an extreme as the opposite one of paying no heed to the connexions that do exist. I recognize no kinship in *spindle-bridle*, *lever-cleaner*, or *pray-ray*.

Where such unrelated rimes and assonances occur, and intersect others that are related and meaningful, we have sub-morpheme differentials. Take, for example, the group connoting 'twisting motion' and characterized by initial /tw/: *twist*, *twirl*, *tweak*, *twell*, *tweeze*, *twiddle*, *twine*, *twinge*. The differential in *twirl* also occurs in *whirl* and is therefore not sub-morphemic.²⁶ That in *twist*, however, does not seem to match anything else, and accordingly, besides creating *twist* as a unique word, serves only to distinguish it phonetically from other—especially other /tw/—words. It is a meaningless residue, like the *cram-* of *cranberry* or the *crag-* of *cragfish*.

Yet we can never say that these forms are entirely 'without meaning.' The alternant *crawfish* is used as a verb in the sense 'crawl backwards,' showing²⁶ Which will be considered the base and which the differential is probably best determined by the number of examples in either direction. Since there are about as many /fl/ words relating to 'round'—*twirl*, *curl*, *swirl*, *whirl*, *knurl*, *whirl*, *hurl*, *swirl*, *part*—as there are /tw/ words, it does not matter whether /tw/ be considered the base and /fl/ the differential, or vice versa, or both be given equal rank in some special procedure for such cases.

perhaps the 'same morpheme' as *crawl*. In the noun *fatsos*, the -so is unique as a suffix,³⁷ but it reflects the sportive -o of *jocko*, *bucco*, *bozo*; similarly in *stock-dolager*, in which the suffix -dolager plays upon any member of associations, including that of mere verbal bigness. We see, therefore, that the outlines of meaningless and meaningful rimes and assonances are infinitely scumbled, and that the analyst faces a hopeless task if he attempts to formulate them by operations.

It is even possible, so pervasive are meanings, to discover a sub-phoneme differential. Take the groups

<i>dumb</i>	<i>numb, numbskull</i>
<i>dimwit</i>	<i>nitwit</i>
<i>dolt</i>	(<i>nut</i>)
<i>dunce</i>	(<i>nonsense</i>)
<i>dense</i>	

If we accept *dumb*, *numb*, *stun*, and *burn* as containing the same morpheme /an/, we then have differentials /d/, /n/, /s/, and /b/. But we find that in this group *dumb* and *numb* are more alike than are any of the others, and we note from the vertical list above that both /d/ and /n/ appear in synonyms for 'stupid'. Therefore we are tempted to the conclusion that *numb* and *dumb* show their greater resemblance by virtue of the resemblance between /d/ and /n/. But if /d/ and /n/ are also the differentials, then we have two words which are both differentiated and assimilated by the same elements. This is untenable, so that the real differentials of *numb* and *dumb* are reduced not to /d/ and /n/ but to nasalization versus non-nasalization plus whatever other phonetic differences separate /d/ from /n/. The same is true of *guile* and *wile*, where the closer similarity of /g/ and /w/ is matched by a closer resemblance in meaning than, say, between either word and *rile*.

The smaller the phonemic content, the greater the likelihood of extensive overlappings. How much overlapping would be needed in order to drop a form from the category of a morpheme to that of sub-morpheme differential is a matter of definition, for the language will not furnish us with a clear-cut line. Initial /st/ has a variety of uses, but one clusters about the meaning 'arrest': *stop*, *stay*, *still*, *steadily*, *stanch*, *stall*, *stump*, *stick* (*ad.*); it is almost equally common, however, in words having the opposite sense: *stimulate*, *sting*, *stir*, *start*, *startle*. To suit his taste, the analyst might find morphemes here, or just sub-morpheme differentials.

Finally, there are certain interlockings which put us in a quandary as to whether to regard an element as a sub-morpheme differential or as part of a base. Thus if we compare *loot* and *boot* (both 'plunder') we find the sub-morpheme differentials to be /l/ and /b/; if we compare *boot* and *booty* (both 'plunder,' and of different origins) we find the differential /t/; if we compare *booty* and *boodle* the differentials again change. We cannot declare the morpheme to be /uw/, because to do so would sacrifice obvious resemblances. The only recourse,

³⁷ Disregarding obsolete *catsos*. Or should the analysis be *fats/so*? (Householder).

for the formalist, would have to be a complicated and artificial rationalization.

13. INFIXED DIFFERENTIALS. *Refrain* is the intransitive aspect of *restrain*; *inject* is used when the parasite is a microorganism, *inject* when it is a macroorganism. Pairs such as these give us discontinuous morphemes, with infixed differentials (the latter called 'morpheme components' by Z. S. Harris³⁸). Striking are the groups that show internal vowel alteration as in *sing* and *song*. The set /s-p/ practically runs the gamut of the vowels: *seep*, *sip*, *sep*, *soy*, *sup*, *soop*, *sipe*, and possibly *soop*.³⁹ The set /sp-t/ refers to 'rush of liquid': *sput*, *spate*, *spurt*, *spout*; the set /str-p/ to 'line having breadth': *strip*, *strop*, *strop*, *strobe*. The set /st-rt/ 'a piece of performance' (*stint*, *stent*, *stunt*) shows a regular semantic gradation as well.⁴⁰

14. CREATIVITY. A great many, perhaps most, of the resemblances of rime and assonance look to the casual observer like phenomena that once were active but have since become dead. Doubtless numerous initial consonant combinations may be traced to a common origin; but this is far from exhausting the sources of resemblance, others of which we have seen in more or less accidental convergence; and it is even farther from exhausting the resources of resemblance, which are constantly building upon each interrelated family, whether that family got its start with a single etymon, as an instance of onomatopoeia, as a verbalized gesture, as an accidental convergence, or simply as a single word whose tremendous frequency or close analogy impressed itself upon other words surrounding it. Consider the potent family of /sk/ initial and final, referring to 'swift movement': *brisk*, *frisk*, *whisk*, *scour*, *scamper*, *scatter*, *scurry*, *scuttle*, *skeddadle*, *skip*, *scoot*, *scramble*, *scat*, *skiddoo*, *skid*, *skim*, *scull*, with marginal to *scale* (a mountain or wall), *skittish*, *escape*, *skiff*, *scuffle*, *scraps*, *scrounge*, *scrabble*, *scarf*, and *sketch*. The interjections *sic!* to a dog and *ski!* (for *scat!*) to a cat must be included. *Scream* and *skiddoo* are fairly recent inventions. When C. E. Seashore, referring to 'making scattered trials so as to locate where to make intensive trials' says 'We first *skirmish* about to find for what difference the observer is likely to get about 75 per cent right,'⁴¹ the influence of the /sk/ constellation is obvious. Likewise when I once caught myself saying *Let's skin out of here*. The well-known family of -ump 'awkward, heavy, lumpyish' (*dump*, *rump*, *crump*, *hump*, *mump*, *bump*, *slump*, *stump*, *grump*, *gunp*, *thump*, etc.) has recently been enriched by the addition of *schlump*, defined as 'a guy who waits outside a revolving door until some vigorous person comes along to push it—so that he can walk through with his hands still in his pocket.'⁴² The initial 'morpheme' in this neologism is familiar from three other recent epithets: *schmoo*, *schmo*, and *schlamiel*—besides nonce words heard frequently in the interval 1946-1950 (this heretofore foreign-to-English initial /S/ plus consonant

³⁸ I owe this reference to Householder. See also footnote 5.

³⁹ Householder adds *symp* and *stump*.

⁴⁰ Word Study, October 1949, p. 6.

⁴¹ Psychology of Musical Talent, New York, Silver Burdett, 1919, p. 49.

⁴² Life Magazine, 15 March 1948, p. 23.

other than /r/ is unique in being shared by practically no other popular words). Creativity is as active in these 'morphemes'—and active in the same way—as in the conventional affixes, as, for example, *-ese* in *journalese* or *-ster* in *lamister*.

15. CONCLUSION. If announced principles of morpheme analysis are carried to their logical conclusion in English, not with the selection of a small body of affirmative data but with a firm resolve to face up to the whole lexical spread, three facts emerge: (1) within a comparatively narrow zone, formulation is both possible and valuable; (2) in a wider zone it is possible but valueless; (3) in the remaining zone it is impossible. Point (1) is not demonstrated here; it is assumed from the writings on morphemics which have dealt with identity-opposition analysis of paradigms.

Point (2) may be phrased 'a formulation that takes care of an insignificant number of forms is fruitless.' We have a comparatively easy test for worth: that the statement of the law shall be more economical than the mere ~~enumeration~~ ^{enumeration} of the phenomena for which it is supposed to account. [By this measure, nothing is gained by prodding a morpheme /-m/ out of *him* and *them*.] Says A. Martinet, 'Morphematic analysis has only one justification, that of helping us understand certain features of linguistic reality.'⁴³ It should stop before it reaches the point of creating more problems than it solves.

Point (3) is borne out by the array of forms—especially phonesthemes—which are too fluid to be penned within limits or which, when one attempts to limit them, lend themselves to contradictory formulations. I give one more example: *covert* can be matched with *covered* as a redundant past participle, like *burnt* with *burned*; but so to analyze it contradicts the almost invariable pairing, in some dialects, of *covert* with *overt*. With the principles in vogue, unarbitrary formulation is impossible, for the two equally valid analyses are mutually exclusive. The sensible answer is to recognize that there are units which show two-way (or three-way or multifarious) resemblances, to describe the latter fully, but to accept the units as organic entities.⁴⁴

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⁴³ Word 5.31 (1949).

⁴⁴ From long practise in matching and cultivating morphemes for associative effects, the poet, who knows almost instinctively that *rasp* is a rougher word than *file*, can give no little to the linguist where phonesthemes are concerned. See remarks of Jeremy Ingalls on 'chromaticism' and 'tone color' in Word Study, Oct. 1949, pp. 1-3. The vowel phonesthemes, in the shape of 'tone color' relating to size (/i/ for smallness, etc.) have been investigated by several linguists and psychologists since A. H. Tolman called attention to them in 1887 (Anderson Review 7.326-337). They continue to be the basis of popular coinage: 'Poop-squawk—that's an elderly *pinquawk*' (Fibber McGee and Molly radio program, 9 Nov. 1948); 'A myth is a female *muth*' (It Pays to be Ignorant radio program, 24 April 1949).