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12. THE OVERESTIMATION OF FUNCTIONALISM

William Labov (Philadelphia)

Functional explanations of linguistic forms are usually concerned with the communication of representational information and the distribution of information. There is a general tendency to overestimate the force of such functional explanations through the conviction that language must operate in this way, and the belief that misunderstandings are relatively rare. Results from the quantitative study of sound change, phonological variation, morphological alternations and syntactic variation are considered with a view to arriving at a more balanced view of the role of such functional factors.

0. Introduction: An ideological rift in linguistic theory

Over the past half century, there has appeared a major split among writers on linguistic theory, centering around the two concepts of "function" and "communication".[1] Some linguists believe that these are essential elements in a theory that would explain linguistic structures, and those who believe that they are not. The two terms are linked by what appears to be an obvious proposition:

(1) The function of language is to communicate.

The term "communicate" usually appears as it does here, without a specified subject, direct object, or indirect object. We are rarely told who is supposed to communicate what to who. But the default values for these arguments are not hard to find:

(1') The function of language is for the speaker to communicate information to the addressee.

What kinds of information are included in this general notion? There is very little overt discussion that bears on this point. The information referred to in functional arguments is usually a narrower range than the concept

used in information theory, but broader than truth-definitional semantics. In general, the discussion refers to the representation of states of affairs — truth definitions and their imaginative extensions — along with various kinds of emphasis, referred to as "focusing", "topicalization", "foregrounding", and their opposites "defocusing" and "backgrounding."

The range of information used for functional explanations depends on the breadth of the linguistic context taken into account. We can distinguish a series of functional positions that look to progressively broader context for explanation.

a. The communicative efficiency of structural units. Martinet's (1962) functional approach views linguistic elements within the sentence — phonological or morphological — in their paradigmatic aspect. The function of an element is its use to define the absence of a number of other elements in the same closed set. Functional explanations deal with changes in that system of oppositions that change the number of other units that a given element is opposed to — that is, its functional load. There appears to be a minimax function operating, though the theory has not explicitly defined it. If the functional load of an element is too small, it can disappear; if the load is too great, new distinctions can be introduced.

b. Semantic distinctness conditions. In 1971 Kiparsky proposed a functional constraint as one of the governing conditions of linguistic change:

(2) ... there is a tendency for semantically relevant information to be retained in surface structure.

The "function" involved here is not the opposition of one member of the system to others, but the direct relationship of a given form to a given referential meaning.

c. Discourse motivation of sentential structure. In 1967, Halliday proposed that one of the systems of his polysystemic grammar is the informational organization which relates structures in one sentence to structures in another. He links his view to the functionalist position of the Prague School, and based much of his argument on the opposition of given vs. new, theme vs. rheme. Kuno's Functional Sentence Perspective (1972) develops the relation of these factors to syntax in considerable detail but he goes considerably beyond information states in introducing "empathy" as a central concept that deals with who in the discourse the speaker takes sides with.

d. The explanation of syntactic structure by communicative principles. In Vol. XII of *Syntax and Semantics*, Givón (1979) proposes five communicative principles that govern the form of language structure: communicative stress; time pressure; degree of planning; face-to-face monitoring; and shared pragmatic background (p. 105).

e. Communicative competence. Without wishing to disturb the traditional process of grammatical description, Hymes proposes to add a broader area, the description of the rules for the appropriate social use of language, or communicative competence. More than any other scholar, Hymes (1974) has continued the functional tradition of the Prague School. The three functions of language identified by Bühler (1934) — representational, expressive, directive — have been elaborated by Jakobson and further by Hymes, to include the aesthetic, meta-communicative, ludic, and other functions.

The *CLS* parasession on Functionalism (Grossman, San & Vance, 1975) gave full representation to the points of view (b), (c) and (d). Though the great majority of papers argued for functionalism, two (Grosu and Ebert) were sceptical, at least of particular functional explanations. One does not have to look far to locate linguists who completely avoid the term *function* and functional theories. The word *function* does not appear in the indexes to *Government and Binding* (Chomsky, 1982) or *Rules and Representations* (Chomsky, 1980). The negative position towards functional arguments has several aspects:

a. General policy: the study of the use of language is something quite distinct from the study of structure, and possibly not very important to linguists. In any case, it should be studied after the structure is worked out.

b. Specific theoretical positions: syntax is autonomous and can be studied apart from semantics; the contrastive function of sounds does not determine the phonological system and can be suspended for some time without disrupting the system.

c. Ideological positions: the language faculty is an innate structure which is isolated from social interaction.

One might expect that work on the language in its social context would fall into the functional camp. Certainly that work is based on ideas and practices that run counter to points (a) and (c) above. Yet over the past five years I have become increasingly doubtful of functional arguments for a number of reasons to be outlined in the paper to follow. Close examination of quantitative evidence on the use of language tends to support position (b) above more often than not. Functional arguments are often stated vaguely; as indicated above, the kind of information being communicated is rarely specified. Moreover, there is a current of self-satisfaction in many functional arguments: a linguistic device is considered better in some sense

if it communicates more information, and worse if it does not. I find myself inherently suspicious of anything that is inherently good.

The structure-functionalism of sociologists (Merton, 1957) looks to the structural consequence of behaviors or institutions. In his discussion of the "concepts of objective consequences" (functions, dysfunctions), Merton observes two types of confusion in his own field:

(1) the tendency to confine sociological observations to the *positive* contributions of a sociological item to the social or cultural system in which it is implicated; and
(2) the tendency to confuse the subjective category of *motive* with the objective category of *function*. (p. 51)

This description might equally well be applied to linguistics. Many functionalist arguments are entered into a program that seeks to show how certain linguistic structures are to be understood by what speakers intend to do. There is no reason to think that our notions of what we intend or others intend are very accurate, or that we have any way of knowing whether they are accurate. If functional theories become theories of intentions, they will be leading us down a very slippery path indeed.

One might ask, if the communication of information does not determine the form of language, what does? Most linguists of the nineteenth century were clear on this point. Sound change, the major mechanism of linguistic change, was seen to operate in a mechanical fashion, without regard to meaning or the communicative needs of the society. There is good reason to think that this is still the most common type of change (Labov, 1981). If this is so, we can expect that much synchronic variation is also unresponsive to the need to communicate information. We will encounter ample evidence to show that morphological and syntactic variation is controlled by a tendency to preserve parallel structures in successive sentences. Other variants are the result of the arbitrary social evaluation of alternative ways of saying the same thing, the chance by-products of geographic contact. Some variation must be seen as historical residue, without any vestige of communicative function (Baugh, 1983). That is not to say that all functional arguments are illusions. Rather, we will see that the need to preserve information is relatively weak, and can be overridden by a variety of other factors.

In this paper, I hope to show that we can come to a more balanced view of functional arguments by following the principle of accountability: paying attention to all of the available data, rather than just those utterances that favor the ideas under consideration; and by using multivariate analysis that takes into account the operation of several influences that jointly determine the end result.

1. Functional explanations of sound change

1.1. Chain shifts

There is no doubt that Martinet's original conception of the functional economy of sound change (1955) has yielded profound and original insights. In our quantitative studies of sound change in progress (Labov, Yaeger & Steiner, 1972) we have found ample support for the notion of drag chains and push chains. The general principles of chain shifting are themselves illustrations of the functional interrelatedness of phonemes. For example, the first such principle is that long or tense vowels rise in chain shifts. This is true of individual sound changes too, but to a lesser degree (Sweet, 1888). If phonemes moved independently of each other, the relationship would be the other way around: it would hold more strongly for individual sound changes, less strongly for chain shifts.

At the same time, we must bear in mind that the very concept of chain shift can be an accident of our notation. When /eh/ and /oh/ rise in parallel to /ih/ and /uh/ in New York City, we call this a parallel shift, the result of rule generalization, simplification or analogy. We can represent such a generalization by simplifying the notation of the rule. The raising of a front ingliding vowel can be shown as:

(3) $[+\text{syl}] \longrightarrow [+\text{high}] \,/\, \underline{\quad} \begin{matrix}[-\text{cons}, +\text{central}] \\ [-\text{back}]\end{matrix}$

and the generalization by dropping the restriction to [−back] vowels:

(3') $[+\text{syl}] \longrightarrow [+\text{high}] \,/\, \underline{\quad} [-\text{cons}, +\text{central}]$

On the other hand, we show the back chain shift of New York City by a notation like:

(4) /ah/ ——> /oh/ ——> /uh/

because we have no notation to show this as a generalization of the raising of /oh/ to /ah/. If we move away from a binary to an n-ary notation, and introduce an algebraic feature notation x as a value held constant throughout a rule, we can express this generalization. In a system with five degrees of height, where 0 = semivowel, 1 = high vowel, 2 = upper mid, 3 = lower mid, 4 = low, 5 = low central, we have:

(4') [x high] ——> [x+1] high_____ [−cons, +central]
[+back]

which states that all back vowels before central glides add one degree of height. This generalization does not require a different explantion from the parallel raising of /ehr/ and /ohr/.

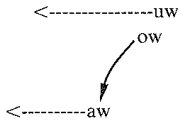
Whether or not we recognize a chain shift can also be an accident of configuration. In London working-class English, the nuclei of /uw/, /ow/ and /aw/ are all fronted from their position in many other dialects. If /ow/ moves directly across the vowel system, at about the same level of height:

<---------- uw
<---------- ow
<---------- aw

we have a parallel generalization of the fronting rule, which can be expressed by:

(5) [+syl] ——> [−back] / _____ [−cons, +back]

Yet for many speakers, /ow/ also falls in height, and often shows a nucleus in low central position, somewhat backer than the low nucleus in /ey/.



What then prevents us from recognizing a chain shift where /ow/ moves down to fill the position vacated by /aw/? If we do so, we still have to account for the parallelism of /ow/ movement with the fronting of /uw/ and the falling of /ey/. The explanation put forward to account for chain shifting are of a piece with the explanations for parallel behavior. Yet, we do not use functional arguments to account for parallel raising of mid vowels — especially when they merge with the corresponding high vowels!

One might of course say that rule simplification is functional, if it makes the language easier to speak and learn. In that case the principle of least effort is also a functional principle, and all other causal hypotheses as well. If we allow functionalism to expand to include every effect that facilitates the production or comprehension of speech, it would become all-inclusive and empty at the same time.

1.2. Constraints on sound change.

In the Middle Atlantic States, the class of English short *a* words is split into tense and lax phonemes, under a wide variety of conditions. The tense form is usally raised to a mid or high ingliding vowel. In New York City the distribution of tense vowels includes all those followed by nasals, front voiceless fricatives and voiced stops in checked syllables: *man, ham, laugh, bath, pass, mad, sad*. An important exception, shared by many other communities, is the class of *weak words*: that is, words whose only vowel can be shwa. This includes the stressed auxiliaries *can, had* and other function words like *am* and *than*: when they are stressed, the vowel is always lax.

Another rule in English simplifies final clusters ending in /t/ or /d/. This applies to the /t/ in the negative contracted suffix */n't/*, which is freqently deleted. The rule affects *can't*. The loss of this /t/ would eliminate the important difference between positive *can* and negative *can't* if it were not for the Weak Word exception, which insures lax /kæn/ and tense /kæhnt/. The Weak Word exception certainly testifies to the strength of functional principles.

However, in northern New Jersey, the raising of /æ/ to /æh/ has gone a step further, so that the auxiliarly *can* is affected. As a consequence, a very common question in northern New Jersey, where I grew up, is

(6) Did you say C-A-N or did you say C-A-N-T?

My experience has been confirmed by many native speakers from this area. The question then remains, if the functional principle supports the weak word constraint, what is the force that is powerful enough to wipe out that constraint? It is hard to see any value in a functional explanation if we cannot explain the nature of forces that can eliminate it. And it is well known that the causes of continued, long-term sound change remain unknown (Saussure, 1922; Bloomfield, 1933).

Functional explanations are advanced to explain the course of sound change in Romance languages, arguing for example that important distinctions like the plural are always preserved, in spite of the categorical loss of /s/ in pre-consonantal position. But we cannot ignore the fact that French has lost the ability to express the plural in many utterances, as in the well known quotation from De Gaulle:

(7) Je m'addresse aux peuples —— au pluriel!

The French plural is not preserved for either member of the noun phrase: neither liaison nor vowel change comes into play. The net result is linguistic

failure, and the resort to meta-linguistic patching.

1.3. Near-mergers

Many linguists believe that the governing principle of phonological structures is contrast, which defines the number of functional categories in the system. Such contrasts depend upon, or can be illustrated by, minimal pairs or near-minimal pairs. A minimal pairs test is subject to perturbation from formal norms, and it has long been recognized that people who are influenced by spelling will claim that two words are different even when they can't produce any difference between them. The presentation of minimal pairs in American English like /latter/ — /ladder/ and /which/ — /witch/ often provoke this kind of response.

At the same time, linguists have traditionally believed that if a speaker says that two sounds are the same, they are the same, even if the linguist hears a difference between them. Labov, Yaeger and Steiner (1972) reported four such cases, where speakers said that two vowels were the same, and failed to pass commutation tests, and yet continued to produce them as non-overlapping sets. Labov (1975) and Nunberg (1980) explored the consequences of near-mergers for the re-interpretation of anomalies in historical reports: as for example, the reported merger of *meat* and *mate* in the 17th century with a later separation and merger of *meat* and *meet*. If the early relation of *meat* and *mate* was a near-merger, their later separation is not so difficult to understand. Milroy (1979) gave support for this view in the finding that *meat* and *mate* still stand in the relationship of near-merger in the older strata of the Belfast dialect.

Figure 1 shows a parallel situation discovered more recently in Philadelphia. Here the distinction of short /e/ and /ʌ/ before intervocalic /r/ in pairs such as *Merry — Murray* and *ferry — furry*. Figure 1a shows spectographic measurements of the nuclei of *merry* and *Murray* as pronounced in the commutation test by a young woman from Philadelphia. The two word classes are distinct, though separated by only a narrow second formant difference. Figure 1b shows the judgements on the same data from a commutation test, where the speaker's husband attempted to identify the tokens in a random list. His success rate was only 14 out of 20.

Experiments carried out in Philadelphia have convinced us that the distinction between short /e/ and /ʌ/ does not function to distinguish words before intervocalic /r/, though it is stable in production. This confirms other indications that the historically stable set of phonemes is not fully determined by contrast.

The existence of near-mergers has important consequences for functional explanation. It appears that the communicative role of phonemic contrasts can be suspended for a considerable period of time without disturbing the integrity of the word classes and the system they participate in. There is no doubt that phonemes do function to distinguish words. But the historical development of the system of phonemes is not narrowly controlled by that communicative function. In this respect, the anti functional position taken by Chomsky and Halle (1968) in defending flip-flop rules seems fully justified, even if that is not the actual mechanism of vowel shifting.

2. Constraints on phonological variation.

2.1. Simplification of English final clusters.

Early quantitative studies of phonological variation concerned relationships between linguistic and external factors such as social class, age or sex. The first internal constraints on linguistic variation to be studied systematically concerned */t,d/* deletion in the Black English Vernacular (Labov, 1972). This is the variable appearance of final /t/ or /d/ in consonant clusters such as *first, hand*, and *passed*. Among the factors that favor or disfavor the deletion of this final consonant, one of the first to emerge was the existence of a grammatical boundary in the cluster. If the final /t,d/ is a distinct past tense morpheme, as in *passed*, it is deleted less often than if it is a part of the stem, as in *list*.

It was quickly found that this constraint operates on all English dialects, and governs the speech of almost every individual. The situation invites a functional explanation. Labov (1971) suggested as a general principle:

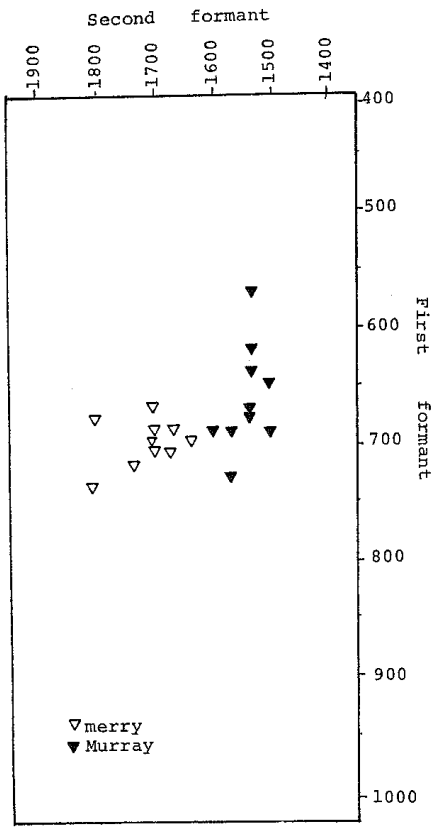
> (7) Whenever a final consonant is variably deleted, the rule will operate more often ... if it is an integral part of the word and not a separate morpheme.

At the same time, Kiparsky argued forcibly that *t,d* deletion in English supported his functional principle of historical explanation cited as (2) above.

Confidence in this universal lasted only until the next language was investigated. In Ma and Herashimchuk's (1968) study of Puerto Rican Spanish in Jersey City it was found that final /s/ was deleted *less* often in monomorphemic words like *mas* and *tres*, and more often when it was a

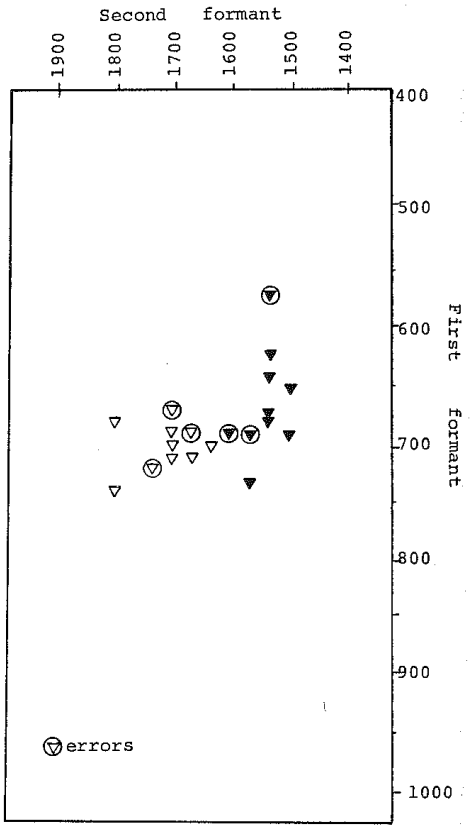
Figure 1

(1a)



Nuclei of *merry* and *Murray* as pronounced in commutation test by Debby, 23, Phila.

(1b)



Judgments of *merry* and *Murray* recorded in commutation test by Louis, 27, Phila.

grammatical inflection as in *padres*. We will explore this situation in detail below. But the limitations of a functional explanation also appeared in the study of English */t,d/*. The most extensive investigation of this variable is Guy (1980), a quantitative study of */t,d/* deletion by 26 white Philadelphians and New Yorkers: he demonstrates that each individual mirrors the pattern of the group, and that the past tense constraint is acquired early in life by children as young as 5 years old. In a later application of these facts to functional explanations, he points to the following data:

(8)

	Deletion probabilities
Monomorphemic words (e.g. *west*)	1.00
Semi-weak verbs (e.g. *kep+t, tol+d*)	.91
Regular past tense verbs (e.g. *walk#ed*)	.52
Regular participles (e.g. *have walked*)	.49

The intermediate value of .91 for the "ambiguous" cases of the semi-weak verb is one of the few examples where individual speakers vary. Guy and Boyd then showed that the value for this sub-category falls steadily with age (data given in Sankoff and Labov, 1979). One interpretation of this situation is that speakers continue to analyze derivational relationship throughout life, so that older speakers tend to treat the derivational + boundary in the same way as the inflection # boundary. In any case, the treatment of the semiweak verbs is not inconsistent with the functional explanation of the behavior of past tense words.

However, a functional explanation would predict, as Guy (1980) points out, that the *-ed* in the present perfect *have walked* would be deleted much more often than regular past tense, since the tense is marked by the auxiliary *have*, and the /t/ or /d/ is redundant. This is not what we find however; the treatment of *-ed* is not significantly different from the regular past tense.

2.2. The aspiration and deletion of Spanish /s/.

One of the most intensively studied linguistic variables is final /s/ in Spanish, which undergoes aspiration and deletion in a wide variety of European and Latin American dialects. Terrell (1981) summarizes a wide range of studies and shows that in the most extreme case /s/ can no longer be considered a base form. The most detailed exploration of the functional effects of this process is found in the work of Poplack (1979, 1980, 1981). In her

study of Puerto Rican Spanish in Philadelphia, she considered many sources of information on number besides the plural inflection /s/: morphological, syntactic, semantic and cultural factors. Poplack (1981) is the most judicious evaluation of all this data to the functional situation. Here I will draw my data from an earlier report (Poplack, 1980), to illustrate the relations between functional and non-functional explanations, considering both the deletion of variable (s) and variable (n) on the verb. To underline the application of the data to functional explanations, I will mark each data set as FUNCTIONAL or COUNTER-FUNCTIONAL.

To begin with, Poplack replicated the earlier finding of Ma and Herasimchuk (1968) that the relationship between monomorphemic and grammatical forms was reversed from that of English:

(9)

	Per cent deletion	
	(s)	(n)
Inflectional	68	9
Monomorphemic	54	1

COUNTER-FUNCTIONAL

Spanish /s/ can appear on several elements of the noun phrase: determiner, noun and adjective, as in *las cosas bonitas*. From this point on, figures will be shown as probabilities of deletion, the results of the Varbrul program: .5 is neutral, figures above .5 favor application of the rule, and figures below .5 disfavor it.

(10)

	(s) deletion
Determiner	.26
Noun	.57
Adjective	.69

FUNCTIONAL?

I write "functional" with a question-mark. This effect that the inflection appears most often on the first element of the noun phrase is generally considered functional. One can argue that if the information is presented first, it is not needed in the words that follow. But this assumes that the listeners process the words of the phrase in the order that they are received. This is a dubious assumption at best and there is much psycho-linguistic evidence against it. Guy (1981) points out that if we do accept this argument, we must then accept the idea that the English language is massively counter-functional: in English, the plural marker normally appears on the last element of the noun phrase.

Poplack explored in more detail the effect of the position of the /s/ inflection in the linear order of the noun phrase, and her results have since been replicated by others (Hochberg, 1982). When there are two preceding possible inflectional markers, we can compare the effect on the last /s/ of the situation where there is a preceding /s/ and the other situation where all preceding /s/ has been deleted:

(11)	(s) deletion
Three element strings	
/s/ preceding	.68
No /s/ preceding	.73
COUNTER-FUNCTIONAL	

This is the reverse of what would be predicted by a functional explanation. We find the same situation with strings of two elements. For the second /s/:

(12)	(s) deletion
Two element strings	
/s/ preceding	.68
No /s/ preceding	.73
COUNTER-FUNCTIONAL	

All these cases are measured in the same factor group, along with the case of noun phrases that have a single member. Here we find the lowest value for deletion:

(13)	(s) deletion
Single noun phrase	.24
FUNCTIONAL	

If there is no supporting information in the noun phrase, there is the least tendency to delete the /s/, and this appears to be a strongly functional factor.

In (11) and (12) we see the tendency of a speaker to continue the pattern set at the beginning of the noun phrase: an /s/ tends to produce an /s/, and a zero tends to produce a zero. Poplack relates this tendency towards perseverance to a principle of least effort at the grammatical level, an extension articulated by Martinet (1962).

Turning to the verbal /n/ inflection, one of the strongest effects is whether we are dealing with a regular verb, where the /n/ is the only mark of the plural, or with an irregular verb, where the plural differs from the singular in several respects (as in singular *es*, plural *son*).

(14)	(n) deletion
Regular	.78
Irregular	.22
COUNTER-FUNCTIONAL	

This finding is parallel to the pattern that emerges from the study of Brazilian Portugese, termed by Naro the "principle of salience". The more prominent the plural marking is, the greater the tendency to retain the plural inflection (Naro and Lemb, 1976; Guy, 1981). The many findings that show the effect of salience are all the reverse of what a functional argument based on the redundance of information would predict.

Poplack also considered the place of the noun phrase in respect to the verb. If the noun phrase occurs before the verb, a linguistic argument would predict that the /n/ on the verb is less likely to be needed; but if it occurs after the verb, the tendency to delete the /n/ should be less.

(15)	(n) deletion
NP phrase after verb	.69
NP before and after	.42
NP before verb	.38
COUNTER-FUNCTIONAL	

The result is the reverse of what would have been predicted by a functional argument.

The strongest functional argument of all would appear when we consider sentences where there is no disambiguating information at all. There we find no absence of /n/ at all. But as Guy pointed out, and Poplack (1981) underlines, this cannot be taken as evidence for functional explanation. It would not be possible for a listener to know that a speaker had signalled a plural inflection if the inflection did not appear and there was no other information telling the listener that it has a plural. Therefore the coder doing the linguistic analysis would automatically classify such utterance as singular.

Guy's study of parallel phenomena in Brazilian Portuguese shows that the analytical problem is not limited to the extreme case of no supporting information. In fact, he suggests that there is an effect of mis-classifying sentences which over-estimates the functional factor systematically. He demonstrates this by examining the frequency of /s/ as a whole in strings of various length.

To begin with, Guy finds 5,247 tokens of noun phrases with single nouns, without any opportunity for supporting inflections. There is 95.4 % /s/ in such cases. When we turn to two-element noun phrases, the usual procedure is to focus on the second noun, and the effect of the first element inflection on it. This shows a functional effect:

(17)	No. /s/	total	percent
/s/ inflection preceding	683	2729	25.0
no /s/ preceding	63	70	90.0

If we turn our attention to the first element of the two-element noun phrases, we should expect to find the same percentage of /s/ as in one-element noun phrases — 95.4 %. There is nothing in a functional argument that would predict otherwise, since this first element is not affected by any previous possibility of inflection.

Guy found 2799 such two-element phrases in his data. One would have expected 4.6 % with zeroes in second position, or 128, but there were only 70, or 2.5 %. What happened to the other 58 tokens? It stands to reason that they were tokens with a zero preceding a zero, since these are the type that are most likely to be classified as singular instead of plural. If we replace them we obtain:

(17')	No. /s/	total	percent
/s/ preceding	683	2729	25.0
no /s/ preceding	63	128	49.2

Here a large part of the functional effect has disappeared.

The sum total of this review of functional explanations in Spanish and Portuguese phonology shows that a functional effect can be detected, but that it is relatively weak compared to other factors. It tends to be overestimated as the result of the systematic disappearance of zero tokens from the data, and the tendency of analysts to focus on functional explanations rather than other factors.

The exploration of various disambiguating factors rests on the assumption that speakers are sensitive to the amount of information available in each utterance, and take this into account as they speak. As we have seen, there is a little evidence to support this idea, and much that runs against it. However, the linguistic system does tend to adjust to functional pressures in the long run, and studies that focus on such systematic effects have found greater success in supporting functional predictions. Flores, Myhill and

Tarallo (1981) predicted that there would be a sizeable difference in the rate of deletion of /s/ for determiners modifying masculine and feminine nouns in Spanish. In the case of the feminine, the /s/ marker on the determiner is the only indication of the plural: /la/ vs. /las/. In the masculine, the singular and plural determiners are quite different: /el/ vs. /los/. Their results justify this assumption:

(18)	masculine	feminine	
% deletion	19.7	12.5	
N	269	191	$p < .05$
FUNCTIONAL			

Many other findings confirm the existence of functional effects upon the system. Hochberg (1982) has given ample demonstration of the relationship between the presence of subject pronouns in Spanish and the presence or absence of person-differentiation in the verb.

2.3. The perfect (s) of Ladakhi

Spanish, English and Portuguese are languages that have been in contact for some time and are related through both family descent and cultural diffusion. We can obtain a much broader perspective on functional effects through Sanyukta Koshal's sociolinguistic study of Ladakhi, a Sino-Tibetian language spoken in the Himalayan region of Northwestern India. Ladakhi has final clusters ending in /s/ where the /s/ is variably deleted, in a process that affects initial clusters as well. In final position, the /s/ is sometimes a part of the stem, and sometimes the perfect marker. When the /s/ disappears, the perfect then is marked with a zero and opposed to many other tenses which have marked suffixes. But the imperative is also marked with zero, and it is not difficult to construct sentences which are ambiguous between imperative and perfect if the /s/ is missing. The situation is parallel to /*t,d*/ deletion.

Koshal's preliminary analysis, carried out at the Linguistic Laboratory at the University of Pennsylvania, distinguished lexical clusters from grammatical clusters. Men and women were analyzed separately. For men, the probabilities assigned to the lexical and grammatical factors were .50 and .50: exactly equivalent. For women, there was a small non-significant difference: .47 for grammatical, .53 for lexical. An analysis of various subgroups of the population shows no significant functional effect in either direction. The provisional conclusion is that there is no functional differen-

tiation of the deletion of Ladakhi /s/.

3. Syntactic variation

The discussion of functional effects would not be complete without a brief examination of syntactic variables. Weiner and Labov (1983) studied constraints on the agentless passive in English. Though it is often considered that the agentless passive does not alternate with an active form, since formal writers do not recognize the use of the generalized pronouns, we find the following alternation in spontaneous speech:

(19) a. The liquor closet was broken into.
b. They broke into the liquor closet.

The use of *they* here is almost equivalent to French *on* or German *man*. It is one of many pronouns used in English as dummy elements, free of singular or plural information, and containing minimal person reference. It was found that this alternation is characteristic of all social groups, with roughly equal proportions of each variant used, and almost no social differentiation. The internal factors that control the choice of agentless passive or generalized active are parallel to those considered for Spanish /s/. A functional explanation is provided by the *given* vs. *new* dimension. It would be predicted that the passive would be used more often when the object of the underlying sentence was old or given information, and less often when it is new information and would so appear in predicate position and take the main stress.

A counter-functional perseverance effect appears in the tendency of speakers to preserve parallel sentence structure, maintaining the same referent in the same position. The first variable rule analyses showed the following results:

(20)	Tokens	% passive	probability
Given	955	41	.54
New	534	25	.46
Parallel sentence structure	350	58	.62
Non-parallel sentence structure	1139	29	.38

Each of these effects was examined in greater detail, considering the distance from the current sentence that the given information occurred in, and considering how many sentences were in parallel. In each comparison, the results were the same: the given-new effect was present and detectable, but weaker and less consistent than the effect of parallel structure.

The perseverance effect appears even more strongly in another factor: the presence of a preceding passive anywhere within the preceding five sentences. There were only 126 such cases, but this subcategory showed the highest percentages of passives, and the variable rule weight, independent of the other factors considered above, was .69 for a preceding passive and .31 without.

The most general view of syntactic effects, as they begin to emerge, is that *given* vs. *new* does influence the appearance or non-appearance of subjects. But it does not seem to have as powerful an effect on sentence order as functional arguments would predict.

4. Overview

There is a consistent tendency to overestimate the effect of functional factors in linguistic change and variation, which springs from several sources. One is that evidence that shows information preserved is given more attention than other evidence. This tendency appears in the study of sound change, lexical replacement, phonological variation, morphological alternations, and syntactic rules.

Another source of bias is an artifact of analysis. A coder listening to speech will make more errors in one direction than another, in proportion to the amount of information present. Yet, if we consider the coder as an ordinary listener, the question arises as to how much misunderstanding there is in language as a whole. Here I believe there is a deeper source of systematic error. There is a tendency for members of the speech community to underestimate the amount of misunderstanding in their daily lives. The many mishearings and malcomprehensions that occur in the course of the day are quickly forgotten. In recent research, we have been attending to misunderstandings; if they are not written down immediately, they tend to disappear from memory more rapidly than other events. It seems to me that the linguist, as a native speaker, participates in this bias, and overestimates the efficiency of the phonemes, morphemes and syntactic rules that are the subject matter of the discipline.[2]

We have received a number of results that run counter to functional explanations. This is only a selection, and there is no way to estimate the size of the total body of results that demonstrate the overestimation of

functionalism. On the other hand, it would be possible to provide an unlimited number of cases that demonstrate functional effects.

It does not make sense, then, to be for or against functional explanations. The advancement of linguistic theory will be furthered by finding more sites where we can measure functional effects against competing explanations, and determine their relative strength. The data avialable so far shows that the need to communicate information is a persistent but weak constraint on the development of linguistic form. It may be likened to gravity in this respect, the weakest of the interactional forces of physics. Gravity is easy to defeat; any one of us can leap a distance into the air. But within the limits of escape velocity, whatever goes up must come down. Gravity is persistent, and it cannot be defeated indefinitely. The need to communicate information is always with us, and though it may be defeated in many ways, the system does adjust to take the loss into account. This adjustment does not seem to be an automatic feature of every-day speech: if speakers' every-day utterances are not controlled by the need to preserve information, it remains to be seen how this systemic adjustment comes about.

Notes

1 This is the latest version of a paper that I originally gave at a workshop at Trier University, and has since been developed considerably with the help of the authors I have cited throughout. I am indebted to Shana Poplack, Gregory Guy, Carmen Silva-Carvalan and Judith Hochberg for correcting my many deviations, left-wing and right-wing, from the correct assessment of the strength of functional arguments.

2 Perhaps the most striking example is the opening pages of Jakobson and Halle (1975), who begin their discussion of the phonemic principle by observing that when you are introduced to a Mr. Miller at a party, you know that it is not Diller, or Biller, Hiller that you have met, but Mr. Miller. Would that it were so!

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13. FUNCTION AND STRUCTURE IN LINGUISTIC DESCRIPTIONS

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This paper concentrates on the following subjects: 1. Retrospective: the inadequacy of a purely distributional analysis (structures without functions). — 2. The general notion of linguistic function, as compared with the more specific mathematical and logical notions. — 3. The twofold patterning of language to be accounted for without implying a dualism of 'expression'-entities and 'content'-entities: distinctive value and semantic value; determinant and synsemantic elements. — 4. Presuppositions: 'acceptable sentences' and functional differences between them. — Extensions of functional analysis beyond the sentence. — Teleological interpretation.

0. Introduction

'Functions', of one kind or another, have entered every branch of linguistic inquiry. I shall confine myself, almost exclusively, to considering a very general notion — a notion of function that has always been implicit in the central and fundamental pursuits of linguistic analysis. It is implicit in the identification of the relevant elements, phonological and grammatical, of utterances and in stating the constructive relations amongst them.

Being implicit is, of course, not the same as being recognized. In fact, such more explicit references to 'functions' as are found in the linguistic literature are generally more specific. Many of them are akin to senses in which the term is used in technological, biological, or sociological studies. The notion of function I wish to discuss is more closely related to the logician's — though, being more general even than his, it is only implicit in his uses of the term.

I do not wish to deny that richer and, in their variety, more specific notions of function can be helpful, even indispensable, for some purposes of linguistic inquiry.[1] But they are more difficult to control and should not be introduced into the basic descriptive studies, if a poorer and more powerful notion serves their purpose. The premature introduction of more