Slashes in the passive*

ARNOLD M. ZWICKY

Abstract

In existing monostratal phrase structure descriptions of the English passive, the construction is derived either by metarule or by lexical rule. Verbs that behave exceptionally with respect to the passive (like resemble *and* rumor*) present difficulties for both types of analyses, as do passivized prepositional objects (as in* This ocean has been sailed across by many explorers*). Analyses using language-particular metarules should be avoided in any case, but describing the exceptional behavior of individual verbs in the alternative, lexical-rule, framework leads to violations of the principle of morphology-free syntax. However, there is a treatment available that entails no undesirable theoretical consequences and is adequate both for English and on crosslinguistic grounds; it employs a syntactic (not strictly lexical) feature PAS associated with VPs and a SLASHlike 'missing constituent' feature restricted to a single clause. A VP that is +PAS is necessarily missing (in this restricted sense) an object NP; in English such a VP also has the morphosyntactic feature VFORM:PSP and permits the occurrence of an agent phrase.*

1. The passive in monostratal phrase structure syntax

Monostratal phrase structure accounts of the English passive derive this construction either by metarule or by lexical rule. The first approach is illustrated in (1), which is slightly adapted from the formulation given by Gazdar et al. (1985: 59),[1] the second in (2), which reformulates the relevant portions of the rule given by Pollard (1985: 141).[2]

(1)
$$\begin{array}{l} \text{VP} \longrightarrow W,\ \text{NP} \\ \quad\quad\quad\ \Downarrow \\ \text{VP[VFORM:PAS]} \longrightarrow W,\ (\text{PP}[by]) \end{array}$$

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(2) Let B be a lexical entry with syntactic part X,
where in X, VFORM has the value BSE
and SUBCAT includes both NP[SU] and NP[DO],
then there is another lexical entry B′ with syntactic part X′,
where in X′, VFORM has the value PAS
and SUBCAT includes no NP[DO] but does include PP[*by*].

The metarule approach is standard in generalized phrase structure grammar (GPSG), and a closely related analysis (predicting the existence of passive VPs from the existence of transitive VPs) has been advanced for the English passive in a categorial grammar (CG) framework by Bach (1980) and Dowty (1982: section 5.6). The metarule approach predicts, for example, the existence of the VPs in the left column of (3) from the existence of VPs with the constituents listed in the right column.

(3)	DERIVED VP[VFORM:PAS]	FORM OF SOURCE VP
a.	attacked by sharks	attack NP
b.	furnished to Marty by our friends	furnish NP PP[*to*]
c.	traded by Kim to Robin for beads	trade NP PP[*to*] PP[*for*]

The lexical rule approach is a cornerstone of lexical-functional grammar (LFG) and has also been adopted in, inter alia, Brame's (1978) base-generated syntax and in Pollard's (1984) head grammar (HG), which combines aspects of GPSG and LFG. It predicts, for example, the existence of the Vs (listed with their complements) in the left colum of (4) on the basis of the existence of the Vs (again listed with their complements) in the right column.

(4)	DERIVED V[FORM:PAS]	SOURCE V[VFORM:BSE]
a.	attacked: NP[SU], PP[*by*]	attack: NP[SU], NP[DO]
b.	furnished: NP[SU], PP[*to*], PP[*by*]	furnish: NP[SU], NP[DO], PP[*to*]
c.	traded: NP[SU], PP[*by*], PP[*to*], PP[*for*]	trade: NP[SU], NP[DO], PP[*to*], PP[*for*]

In LFG and HG, 'relation-changing rules' like the passive are necessarily lexical; there is no theoretical construct comparable to the metarule. In CG and GPSG, on the other hand, such a rule might be either lexical or syntactic, as Dowty (1982: section 5.6) has pointed out; a lexical rule

analysis might be appropriate for the passive in one language, a metarule (or other syntactic) analysis in another language, and a single language might have constructions of both types.

In any event, both approaches are designed to preserve the central syntactic generalizations of TG analyses, namely that by and large (see section 2.2 below) a verb that can occur in a passive construction (where it has no DO) is one that can occur in an active construction with a DO, and vice versa; and that the potentiality for non-DO complements within the VP is the same for corresponding passives and actives.

This much is syntax. For monostratal approaches to be satisfactory, however, they must also provide the basis for an adequate semantic description of the passive, especially in its interactions with other constructions, for instance the subject-to-object raising, subject-to-subject raising, and expletive *there* constructions in English. In multistratal approaches — including both transformational grammar (TG) of the classic variety and relational grammar (RG), as in Perlmutter and Postal (1983) — an initial stratum of representation is itself a skeletal semantic description, but in monostratal approaches the semantics must be built up by composing the effects of different surface constructions, and this is a nontrivial technical exercise. Fortunately it is one that has been sketched by Thomason (1976), Bach (1980), and Dowty (1982) for CG, by Gazdar et al. (1985: chs. 9, 10) for GPSG, by Kaplan and Bresnan (1982) for LFG, and by Pollard (1984) for HG, so that I will not pursue semantic issues further in this paper.

But with respect to the syntactic side of the analyses above, in section 2 I argue that the metarule approach is not fully satisfactory for the English passive, and in section 4 that the lexical rule approach isn't either. In their place I develop in section 5 a monostratal analysis involving a feature with some of the characteristics of the SLASH of standard GPSG. This analysis follows TG and RG in representing directly the fact that a passive VP is missing an NP and echoes the GPSG and CG analyses cited above in treating this fact as a syntactic (rather than lexical) matter.

2. The metarule approach

The first sort of monostratal analysis relies on a parochial (that is, language-particular) metarule.

2.1. *Parochial metarules*

This is in itself something of a problem, since many working in phrase structure approaches to syntax have proposed to simplify their theoretical

frameworks by restricting metarules, or even dispensing with them entirely (as in the monostratal programs enunciated by Cann 1985 and Pollard 1985). The framework of Gazdar et al. (1985), following Flickinger (1983), limits metarules to mappings from lexical ID rules to lexical ID rules, but permits parochial metarules like (1), as well as metarules supplied by universal grammar.

Now in my view (and evidently in the views of Cann and Pollard) the arguments for the particular parochial metarules that figure in the GPSG literature are not very compelling. In each case alternative analyses can be imagined,[3] and in any event the framework would be more attractive, *ceteris paribus*, without this dimension of parochial variation. The most desirable framework is one that is free of parochial metarules, though it may embrace some universal metarules.

The treatment of the passive in (1) is then undesirable insofar as it has irreducibly parochial aspects. What is at issue here is whether PP[*by*] and [VFORM:PAS] in (1) are such aspects. The first of these might be factored out as belonging to a second metarule, describing agentive passives on the basis of agentless ones, and in any event it might be possible to view the agent phrase as having the universally supplied features [BAR:2, −V, CASE:ERG], with parochial realizations of ergative case determining that English has a PP rather than an NP here, and that the P in question is *by*. Things are not so easy with the verb inflection feature [VFORM:PAS], which seems quite language-particular. As Perlmutter and Postal (1983: section 2.3) emphasize, passive constructions need not have any exponents whatsoever via inflectional morphology. Mandarin Chinese is the standard example; the language has no verbal inflection at all (though it does have agent phrases with the preposition *bèi*).

In contrast, principles governing the distribution of a missing-constituent feature, along the lines of the foot feature principle and the slash termination metarules in the GPSG literature, are fairly easily viewed as universal in character. It is necessary to assume that universal grammar provides more than one such feature, but there are precedents for this move: Pollard (1984: section 4.3f), for instance, posits a set of 'binding features' subject to different conditions (a SLASH feature associated with termination in a trace, a REFL feature associated with termination in a reflexive pronoun, and so on), and Zwicky (1987) uses a feature LAST that has most, but not all, of the properties of a GPSG foot feature like SLASH (among other things, it is crucially restricted to a single daughter, while SLASH is not).

2.2 *Misfits in subcategorization*

The metarule approach also suffers from an empirical difficulty, in that if a metarule like (1) constitutes the entire description of passivization, the analysis predicts that the set V_P of verbs subcategorized for occurrence in the passive is identical to the set V_A subcategorized for occurrence in the active. However, as is well known, V_P and V_A overlap considerably but are not the same. There are verbs in V_A but not V_P, like *resemble* in (5), and verbs in V_P but not V_A, like *rumor* in (6), and in neither case do I think it is plausible, especially in the light of examples like (5′) versus (5), and (6′) versus (6), to claim that the restriction is semantic or pragmatic in character (though this has often been suggested).[4]

(5) a. The model resembles Kim in nearly every detail.
b. *Kim is resembled by the model in nearly every detail.

(5′) a. The model $\left\{\begin{array}{c}\text{matches}\\ \text{mirrors}\\ \text{approximates}\end{array}\right\}$ Kim in nearly every detail.
b. Kim is $\left\{\begin{array}{c}\text{matched}\\ \text{mirrored}\\ \text{approximated}\end{array}\right\}$ by the model in nearly every detail.

(6) a. *Someone has rumored that Tracy is bald.
b. It has been rumored that Tracy is bald.

(6′) a. Someone has $\left\{\begin{array}{c}\text{reported}\\ \text{disclosed}\\ \text{bruited it about}\end{array}\right\}$ that Tracy is bald.
b. It has been $\left\{\begin{array}{c}\text{reported}\\ \text{disclosed}\\ \text{bruited about}\end{array}\right\}$ that Tracy is bald.

2.2.1. *Supplementing the metarule.* One way to avert this inadequacy of (1) is to treat it as only a part of the description of passivization in English. A scheme along these lines is in fact available in Gazdar (1982), according to which rather different analyses can be given for the *resemble* and the *rumor* cases.

For the *resemble* cases, Gazdar's (1982: 147–150) feature system provides a feature for transitivity, adopted from Hust and Brame (1976); *resemble* could be lexically marked as [−TR], in contrast to [+TR] verbs like *match*, *mirror*, and *approximate*. In a variant of this approach, these latter verbs are treated as occurring with sister NPs having the DO feature, while *resemble* would be described as occurring with non-DO NPs, that is, via an ID rule in which the sister NP bears some grammatical

relation feature other than DO. The passive metarule would then require V[+TR], or NP[DO], or perhaps both.

The [−TR] approach is used by Gazdar (1982) for examples like those in (7). Either it or the non-DO approach would extend naturally to middle verbs like those in (8) and verbs with bare NP adverbial complements, as in (9).

(7) a. They wanted Kim to run. *Kim was wanted to run (by them).
b. They made Bobby run. *Bobby was made to run (by them).
c. They promised Gerry to run. *Gerry was promised to run (by them).

(8) a. Those fit Stacey well. *Stacey is fitted well (by them).
b. Those suit Chris. *Chris is suited (by them).

(9) a. The play lasted six hours. *Six hours was lasted (by the play).
b. Riots occurred last night. *Last night was occurred (by riots).

I do not deny that a transitivity feature plays a role in English syntax; indeed, in section 2.3.2 below I formulate a constraint in terms of TR. The question is whether *resemble* should be treated as [−TR]. I do not believe it should. Middle verbs like *suit* and transparent intransitives like *last* do not coordinate happily with transitives, even when the sense is clear, as (10) illustrates. The verb *resemble*, however, coordinates with transitives of similar meaning, as in (11). I can see no reason to withhold the feature [+TR] from the V *resembles* in (11), or [DO] from the NP *your suspect*.

(10) a. ?The color lavender sometimes shocks and sometimes suits Bobby.
b. ?The play both depicted and lasted a period of six hours.

(11) Pat neither matches nor even resembles your suspect.

Gazdar's (1982: 167) treatment of the *rumor* cases involves a special ID rule for passive Vs with infinitival complements, like those in (12) — an analytic step that seems entirely correct for these examples, given that the appropriate input structures for metarule (1) are not available in English, as (13) illustrates. But this analysis doesn't solve the problem presented by (6) versus (14), since what is implicated there is not Gazdar's special ID rule, but rather the passive metarule; the generalization is that verbs occurring in the active construction in (14b) also occur in the passive construction in (14a). It is true that there is at least one verb in English that appears to be limited to occurrence in the special ID rule — namely, *repute*, given (12b) versus (15b) — but the restriction on *rumor* is not specific to this ID rule, as (15a) shows. Rather, *rumor* occurs in passive constructions of both sorts, and only there.

(12) a. Leslie was said/announced/seen to be in Rome.
b. Leslie was reputed/rumored to be in Rome.

(13) *They said/announced/saw Leslie to be in Rome.

(14) a. It was said/announced/seen (by them) that Leslie was in Rome.

b. They said/announced/saw that Leslie was in Rome.

(15) a. It was rumored (by them) that Leslie was in Rome.

b. *It was reputed (by them) that Leslie was in Rome.

2.2.2. *An appeal to defective paradigms.* There is a way to describe the *resemble* and *rumor* facts within a metarule analysis, though it is by no means attractive. It involves saying that what is wrong with (5b) is that the verb *resemble* lacks a passive form (rather than that it fails to occur in the passive construction), and that what is wrong with (6a) is that the verb *rumor* lacks any active forms (rather than that it fails to occur in active constructions). That is, the misfit between V_P and V_A would be claimed to be purely a matter of gaps in inflectional morphology — entirely like the failure of the verb *stride* to have a past participle, or of English modal auxiliaries to have any nonfinite forms — rather than subcategorization differences.

This is a very odd way to treat the exceptionality of verbs like *resemble* and *rumor*. What makes it odd is an EXCEPTIONLESS fact about English (recognized by everyone who has written on the passive), namely that the passive participle is always identical in form to the past participle. Indeed, traditional grammarians of English uniformly fail to recognize a distinction between V[VFORM:PAS] and V[VFORM:PSP] and simply say that the passive construction involves the latter; I will return to this view in section 3.

The point here is that gaps in the paradigm of inflectional forms constitute a type of exception, a relatively uncommon type of exception in fact, so that we should expect that if there are exceptions of this sort there will be exceptions of the garden variety, that is, inflectional forms of irregular shape. Consider the past participles of English. There are a very few verbs like *stride*, with gaps in the paradigm at this point, but a great many verbs like *break*, with past participles that are exceptions to the regularity that the past participles form is identical in shape to the past form, and even a considerable number like *sing*, with past participles that are exceptions to a secondary regularity, that the past participle form has the suffix *-en*. Now contrast the past participle situation with what the metarule approach to the passive entails: that there are a fair number of gaps in the passive participle slot of the paradigm, but absolutely no inflectional forms of irregular shape there. Nothing I know would predict this array of exception types to be impossible, but it certainly is highly unlikely, and I can think of no parallel in any language.

2.3. *Prepositional passives*

Another unsatisfactory feature of the metarule approach is that (in contrast to a TG analysis) as it stands it covers only ordinary passives like (16a) and (17a) and not prepositional passives ('pseudopassives', in the phrasing of Postal 1986) like (16b) and (17b). This is a consequence of the fact that rules licensing NP objects of prepositions introduce them as daughters of PP, not VP, so that the metarule in (1) is inapplicable. It follows that something special must be said for prepositional passives.

(16) a. These matters are handled by Robin.
b. These matters are attended to by Robin.

(17) a. This ocean has been $\left\{\begin{matrix}\text{crossed}\\ \text{traversed}\end{matrix}\right\}$ by numerous explorers.
b. This ocean has been $\left\{\begin{matrix}\text{sailed}\\ \text{traveled}\end{matrix}\right\}$ across by numerous explorers.

2.3.1. *The complex lexical verb proposal.* One common treatment of V + P + NP combinations in which the NP is passivizable is to claim that the V + P sequences in them are syntactic units, that '*march through, pay for, go over, look on, speak of, rummage around in*, and the like are complex lexical verbs having the morphological structure $[V + P]_V$', in the words of Bresnan (1982: 51). But as Postal (1986: section 6.1) observes, P + NP in these combinations can normally function as a single constituent, as in (18), which means that both P + NP and V + P must be treated as units in a syntactic description of English.[5]

(18) a. To which matters does Robin attend?
b. Across these oceans numerous explorers have $\left\{\begin{matrix}\text{sailed}\\ \text{traveled}\end{matrix}\right\}$.

In addition, these instances of V + [P + NP] and [V + P] + NP would have to be treated as semantically equivalent, and as subcategorizing V in essentially the same fashion. It is not clear to me what an entirely satisfying GPSG analysis along these lines would look like. I will not pursue the question, however, since there are several excellent arguments, enumerated by Postal (1986: 206–208), against positing a [V + P] + NP structure in alternation with V + [P + NP]. I will cite two sorts of argument here, contrasting the facts for PP complements to verbs with the facts for examples that uncontroversially have a [V + P] + NP structure, namely verb–particle combinations.

First, there are several items in English, among them *not*, *only*, and *even*, that are not comfortable modifying objects of prepositions, though

they are entirely acceptable modifying constituents of VP; contrast (19) with (20) and observe that the passivizability of the NP is irrelevant, as (21) shows.

(19) a. Flies originate not from slime, but (from) eggs.
b. Robin wrote not to Kerry, but (to) Chris.
c. They took in not a dog, but a coyote.
(20) a. ?Flies originate from not slime, but eggs.
b. ?Robin wrote to not Kerry, but Chris.
(21) a. *Slime is originated from (by flies).
b. Kerry was written to by Robin.

Second, long and complex NP constituents of VP can be shifted over other material to VP-final position, as in (22), but objects of prepositions cannot be. The fact that the shifted objects in (23) and (24) are equally ungrammatical again shows that the passivizability of the NP is irrelevant.

(22) a. They took in a dog eagerly.
b. They took in eagerly a dog with a little curly tail and an affectionate nature.
(23) a. Flies originate from slime spontaneously.
b. *Flies originate from spontaneously viscous slime that has lain in the dark for months.
(24) a. Robin wrote to Kerry about linguistics.
b. *Robin wrote to about linguistics everyone who was willing to entertain diophantine equations as a theory of grammar.

In the light of such data I will not take the tack of analyzing the prepositional passives in (16b) and (17b) by treating *attend to* and *sail/travel across* as constituents.

2.3.2. *An advancement analysis.* Postal's (1986: section 6.2) own analysis, couched within his arc pair grammar (APG), a non-phrase-structure framework for syntax,[6] builds on the standard RG assumption (as in Perlmutter and Postal 1983) that all passives are advancements of DO to SU. To accommodate prepositional passives, Postal assumes that POs (prepositional objects) can be advanced to DO (so that VPs with the constituents as in [25a] are in effect mapped into VPs with the constituents as in [25b]), and that these DOs are then obligatorily advanced to SU, that is, are obligatorily passivized.

As it happens, this analysis can be translated into GPSG fairly straightforwardly: one metarule, having the effect of liberating the daughter constituents of PP to yield the VP constituents in (25b),

corresponds to the APG advancement of POs to DO; another metarule like (1) corresponds to the RG/APG passive; and a condition on VPs, barring them from having the form in (25b), corresponds to the obligatoriness condition on the RG/APG passive.

(25) a. V[−TR], PP: sleep, in this bed
b. V[−TR], NP, P[+TR]: sleep, this bed, in

Now it would be desirable to avoid the rather ad hoc positing of an additional syntactic principle for prepositional passives, and of course it would be desirable not to posit a parochial metarule advancing POs to DO. What we should like to say is that English permits not just DOs but a whole range of NPs within its VPs to be passivized. Three considerations apparently work against this approach: the strong universal claim that only DOs are passivizable; an empirical problem with any analysis that permits POs in general to be passivized, namely that it overgenerates by predicting passive VPs like those italicized in (26);[7] and the technical problem within GPSG that a metarule along the lines of (1) cannot treat POs and DOs as forming a natural class of NPs, since a PO is a daughter of PP while a DO is a sister of this PP.

(26) a. *Robin was *given money to (by Sandy)*.
b. *Kim often is *bought hats for (by Marty)*.
c. *This ocean has been *sailed fast boats across (by many explorers)*.

A universal restriction of the passive to DO advancement cannot, I believe, be maintained, so that there is no real difficulty from that quarter. The passivization of indirect objects, as in the Mandarin Chinese examples in (27) (from Li and Thompson 1981: 504), is reasonably common, though it is usually assumed to involve two syntactic rules (as in Postal's analysis of passivized POs in English, and in the standard RG treatment of passivized indirect objects in English, as in [28]) rather than a direct passivization. However, even Postal (1986: ch. 7) admits that a two-step analysis is not always possible, given the arguments for direct passivization of instrumentals in Imbabura Quechua provided by Jake (1983). A similar case might be made for the passivization of locatives in the Bantu languages Olutsootsoo (Dalgish 1976a, 1976b) and Tshiluba (Kamwangamalu 1985), and Keenan's (1985: section 3.4) discussion of 'passives with non-patient subjects' suggests that direct passivization is the rule for Malayo-Polynesian languages. In fact, Postal (1986: section 6.5) explores direct passivization of English POs as an alternative to the two-step analysis within the APG framework; he favors the two-step analysis, but admits that 'the arguments are far from decisive' (1986: 223).

(27) tā bèi péngyǒu tōu -le qián
(s)he by friend steal PRT money
'(S)he was robbed of money by a friend.'

(28) a. Marty gave a frog to Terry.
b. Marty gave Terry a frog.
[from (a), by advancement of IO to DO and demotion of DO]
c. Terry was given a frog (by Marty).
[from (b), by advancement of DO to SU and demotion of SU]

The overgeneration problem illustrated in (26) has a straightforward solution, via a condition that all English passive VPs must satisfy, a condition prohibiting the passivization of a PO when the V has an NP complement. The constraint is not simply against V, NP, and P as daughters of VP, since this configuration occurs in the separated-particle construction, as in (30b). And it is not simply against V, NP, and P[+TR] as daughters of VP, since this configuration can occur in the object-to-subject raising construction, as in (30f). I have stated the constraint in (29),[8] in a formulation that covers not only the ungrammatical passivized POs in (30e) and (31b) but also the ungrammatical liberation of the daughters of PP (alluded to in my discussion of Postal's two-step analysis of passivized POs), as in (32b).[9]

(29) Any VP with V[−TR], NP, and P[+TR] among its daughters is ungrammatical.

(30)	a. Robin has taken off.	V[−TR], P[−TR]
	b. Robin has taken $10 off.	V[+TR], NP, P[−TR]
	c. Robin has taken $10 off the bill.	V[+TR], NP, PP
	d. $10 was taken off the bill (by Robin).	V[−TR], PP
	e. *The bill was taken $10 off (by Robin).	*V[−TR], NP, P[+TR]
	f. The bill was easy to take $10 off.	V[+TR], NP, P[+TR]
(31)	a. Sandy was given $10 (by Robin).	V[−TR], NP
	b. *Sandy was given $10 to (by Robin).	*V[−TR], NP, P[+TR]
(32)	a. Kim slept in the bed.	V[−TR], PP
	b. *Kim slept the bed in.	*V[−TR], NP, P[+TR]

The only remaining barrier to direct passivization of English POs is then the technical problem for GPSG, which I will take up in section 5 below.

3. Construction features and morphosyntactic features

Before turning to the lexical-rule approach to the passive, I will comment on one remaining unsatisfactory aspect of the analysis in (1), a character-

istic that is not forced by the metarule approach to the passive but is nevertheless standard in GPSG analyses: the double use of [VFORM: PAS], as both a CONSTRUCTION FEATURE, which labels a particular syntactic construction, and also a MORPHOSYNTACTIC FEATURE, which is inherited by lexical categories and receives expression via rules of inflectional morphology. In its use as a construction feature, PAS is like the feature INV labeling the subject–auxiliary inversion construction in English. In its use as a morphosyntactic feature, [VFORM:PAS] is like the feature [VFORM:BSE] labeling the bare infinitive form of V, [VFORM:PSP] labeling the past participle form of V that occurs with the perfect auxiliary *have*, and so on.[10]

The separation of these two sorts of information is highly desirable from the crosslinguistic point of view, as I will argue in section 3.2, and there are advantages to it even for English.

3.1. *Exceptionality again*

On the latter point, I have already noted (in section 2.2) that the metarule analysis in combination with the use of [VFORM:PAS] as a morphosyntactic feature yields a very odd treatment of the fact that some verbs occur only in the active and others only in the passive. Suppose that we dispense with [VFORM:PAS] and treat PAS as a construction feature only — that is, as a strictly syntactic feature (like the category features and the SUBCAT feature, which do not have realizations in inflectional morphology), rather than as a morphosyntactic feature (which both figures in the syntax and also has a realization in inflectional morphology). Then in English there are three exponents of the construction feature [+PAS] on a VP, as in (33).

(33) Exponents of VP[+PAS]:
  a. A missing NP within the VP.
  b. The possibility of an 'agent phrase', PP[*by*], as a daughter of VP.
  c. [VFORM:PSP], inherited by the head V of the VP.

Suppose further that this syntactic feature is a GPSG head feature, so that it is shared by the head V within the VP. Then the restrictions on verbs like *resemble* and *rumor* can be expressed by stipulating that these verbs have [−PAS] and [+PAS], respectively, among the syntactic features in their lexical entries. Construction features thus resemble SUBCAT listings from the point of view of lexical entries, but differ from them in that construction features (but not SUBCAT listings) may be shared by a lexical category and the phrasal category dominating it.

I know of one apparent drawback to treating PAS as a construction feature only: a resulting lack of parallelism between the way that the passive auxiliary *be* governs the form of its sister VP and the way that other auxiliaries govern the form of this VP. Modal auxiliaries generally govern [VFORM:BSE], though some govern [VFORM:INF] (the infinitive marked with *to*), while the progressive auxiliary *be* governs [VFORM:PRP] and the perfective auxiliary *have* [VFORM:PSP]. But on the analysis I am now recommending, the passive auxiliary *be* governs the construction feature [+PAS] rather than (as in the usual GPSG descriptions of the English auxiliary system) a morphosyntactic feature [VFORM:PAS].

But I do not view the lack of parallelism between government for the passive *be* and for the other auxiliaries as any sort of problem, since the putative generalization here, stated in (34a), is not valid. The copula *be* is certainly [+AUX], but in the analysis of Gazdar, Pullum, and Sag (1982) and of Gazdar et al. (1985) it determines the construction feature [+PRD], rather than a value of VFORM, on its sister VP. In fact, assuming that passive *be* and the other passive-determining verb in English, *get*, do NOT govern a value of VFORM will allow us to state that generalization (34b), the converse of (34a), holds for English. What is crucial here is that passive *get* is clearly not [+AUX], as (35) demonstrates.[11]

(34) a. If a V is [+AUX] then it governs a value of VFORM.
b. If a V governs a value of VFORM, then it is [+AUX].

(35)	a.	You got attacked by seagulls.	You were attacked by seagulls.
	b.	*Got you attacked by seagulls?	Were you attacked by seagulls?
	c.	Did you get attacked by seagulls?	*Did you be attacked by seagulls?

3.2. *Crosslinguistic observations*

Now a few brief remarks on the passive crosslinguistically. First consider Mandarin Chinese, in which there is no verbal inflection (much less, inflection for the passive), nor any particle word marking a VP (either on its head V or at one of its edges) as passive. It would be odd indeed to analyze the Chinese passive by means of a morphosyntactic feature. Instead a construction feature associated with VP seems appropriate.

Other languages provide evidence in favor of analyzing the passive with a construction feature IN ADDITION TO a morphosyntactic feature. There are languages that have an inflectional category expressly for the passive voice (rather than 'borrowing' a category primarily devoted to another

purpose, as English does when it presses the past participle into service for the passive). As Shibatani (1985: section 2), Keenan (1985: section 3.2), and Postal (1986: ch. 5), among others, have stressed, such languages commonly use passive morphology — that is, a morphosyntactic feature for the passive — in nonpassive constructions. Shibatani, for instance, observes that 'the Japanese morpheme *-(r)are* is used in four types of constructions — passive, potential, honorific, and spontaneous' (1985: 822),[12] while Keenan focuses on impersonal passives, citing such languages as Turkish and Tarahumara, in which passive morphology is used in constructions based on intransitive verbs. Most striking of all in this regard are languages with deponent verbs, as in the Latin examples in (36) (from Wheelock 1963: 164); here, passive morphology on the verbs *hortor* 'I urge, encourage', *sequor* 'I follow', and *patior* 'I suffer' accompanies active semantics and active syntax, right down to direct objects in the accusative case (singular *eum* in [36a], plural *haec mala* in [36b]).

(36) a. Eum hortēmur et sequāmur. [pass. pres. subj. 1 pl.]
'Let us encourage and follow him.'
b. Is haec mala fortiter patiētur. [pass. fut. indic. 3 sg.]
'He will suffer these evils bravely.'

I conclude that it is a false economy to describe passives by means of a single feature with double function (as a construction feature and as a morphosyntactic feature). A construction feature [+PAS] is universally associated with the passive, but a morphosyntactic feature is not, and in languages that have both types of features associated with the passive, the morphosyntactic feature is not invariably accompanied by [+PAS], but instead can have a grammatical life of its own.

4. The lexical rule approach

I now turn to the second approach to the passive in monostratal phrase structure syntax. There is a considerable literature, much of it of course not in a monostratal phrase structure framework, on a lexical-rule analysis of the English passive; Bresnan (1982: 3) cites ten proposals from the period between 1972 and 1978 alone, by Shopen, Freidin, Brame, Bresnan, Wasow, and Hoehle. While CG and GPSG together assume that 'the formation of passives in a language takes place at the level of verb-phrase syntax' (Keenan 1985: 246), LFG treats the passive as an operation on individual verbs.

This approach has been criticized by proponents of CG, in particular Bach (1980: section 4.2) and Dowty (1982: section 5.6), who advance evidence that in English, at least, the passive rule operates on (in Bach's

words) 'syntactically defined transitive verb phrases' (1980: 321). Bach offers two arguments, one based on the prediction of an ambiguity in examples like (37), the other on the distribution of purpose clauses with gaps in them, as in (38).

(37) Sandy was attacked and bitten.

(38) a. Robin brought in the dean for us to talk to.
b. The dean was brought in for us to talk to.
c. *The dean came in for us to talk to.

I will not evaluate these arguments here but instead will point to problems with the lexical-rule approach in a monostratal framework like Pollard's. These have to do with the proper articulation of a syntactic description with a morphological description.

4.1. *Exceptionality one more time*

As I showed in section 2.2, the standard GPSG analysis of the passive entails treating the misfit between V_P and V_A as a matter of morphological gaps, missing inflectional forms for particular verbs. My discussion in section 3.1, however, provided a way of maintaining a syntactic analysis for the passive without these unsatisfactory morphological consequences, via the features [−PAS] and [+PAS] associated with individual lexical items.

Now consider what the lexical-rule approach says about the features of passive verbs. In this approach passive verbs are separate lexical items related to active verbs as in (40), by a DERIVATIONAL RULE, a rule of the same sort that describes relationships like those in (39).

		DERIVED WORD	SOURCE WORD
(39)	a.	A bluish	A blue
	b.	V[+TR] restate	V[+TR] state
	c.	V[+TR] roll	V[−TR] roll
	d.	A escaped	V[−TR, VFORM:PSP] escaped
(40)		V[−TR] seen	V[+TR, VFORM:PSP] seen

Exceptionality is then a matter of missing lexical entries (rather than missing inflectional forms for existing lexical entries): there is no derived passive verb based on *resemble*, no source verb on which the passive verb *rumored* is based. As is well known, exceptionality of this sort is widespread in derivational morphology. English, for example, has no derived abstract nominals in *-al* based on certain Latinate verbs, as in (41a), nor any source verbs on which certain Latinate ability adjectives are based, as in (41b).

(41) a. *occurral < occur; cf. referral < refer
*derival < derive; cf. arrival < arrive
b. plausible < *plause; cf. collapsible < collapse
probable < *prob; cf. describable < describe

A derivational rule for passive verbs would scarcely be extraordinary, given Keenan's (1985: 257) observation that the morphology of passive verb forms in several language groupings — he cites the Philippine languages in general, Malagasy, and the Semitic languages — is quite clearly derivational rather than inflectional.

4.2. *The syntax–morphology interface*

What, then, is wrong with treating English passive verbs as derived lexical items in a monostratal syntax? I will argue that this analysis threatens a fundamental assumption of grammatical theory, namely the assumption (sometimes referred to as the lexicalist hypothesis) that syntax is blind to morphology:

(42) Principle of morphology-free syntax (PMFS):
Syntactic rules cannot make reference to the internal morphological composition of words or to the particular rules involved in their morphological derivation.

The PMFS allows syntactic rules to refer to morphosyntactic features (to features realized in inflectional morphology) but bars them from referring to particular inflectional affixes ([VFORM:PSP] expressed as N in *broken* rather than D in *braked*, for instance), to other paradigm classes (like 2nd versus 3rd declension in Latin nouns), or to derivational classes (affixed causatives like *soften* and *alphabetize* versus zero causatives like *boil* and *roll* versus primary causatives like *kill* and *demolish*). To give up the PMFS would be to predict that a language could have a yes–no question construction that was possible only for verbs of a particular conjugation class or for subject NPs with a head N from a particular declension class, or that a language could permit verb-last order only if the verb had one particular suffix out of a set of causative suffixes. To my knowledge, no language has syntactic rules with conditions of this sort on them.

As it stands, a derivational rule describing the relationship in (40) — between a V[+TR, VFORM:PSP] base and a V[−TR] derivative — is innocuous from the point of view of the PMFS. The stipulation of the feature [VFORM:PSP] in (40) might raise eyebrows, but I will argue in sections 4.2.3 and 4.2.4 that this presents no real problem. However, there

is one very significant point in which Pollard's analysis in (2) is not simply a formalization of the relationship in (40): it in effect stipulates not [VFORM:PSP], but [+PAS]. I observe in section 4.2.1 that in a monostratal lexical rule analysis the feature [+PAS] MUST be stipulated and then show in 4.2.2 that this stipulation violates the PMFS.

4.2.1. *The stipulation of* [+*PAS*]. If we are to get the syntactic description of English right, then a monostratal lexical rule treatment of the passive must stipulate that the derived form has the feature [+PAS], not merely [VFORM:PSP]. The point is that such a rule must allow passive VPs in contexts like those in (43) and (44) while prohibiting active VPs there (in particular, active VPs with perfect verb forms in them, even though passives and perfects both have V[VFORM:PSP] heads), and it must disallow passive VPs in contexts like the one in (45) while permitting active VPs there.

(43) *be/get* + VP[−FIN]:
  a. Kelly wants to be/get *publicly kissed by a dolphin.*
  b. *Terry wants to be/get *visited Paris in the springtime.*
  c. *Robin wants to be/get *disappeared for the weekend.*

(44) Predicative VP as a loose adjunct:
  a. *Publicly kissed by a dolphin*, Kelly was mortified.
  b. *Publicly kissing a dolphin*, Kelly embarked on a new career.
  c. **Visited Paris in the springtime*, Terry was exhilarated.
  d. **Disappeared for the weekend*, Robin will return on Monday.

(45) *have* + VP[−FIN]:
  a. *Kelly is known to have *publicly kissed by a dolphin.*
  b. Terry is known to have *visited Paris in the springtime.*
  c. Robin is known to have *disappeared for the weekend.*

It is such well-known facts about VP distributions that led Pollard to stipulate in his lexical passive rule, in (2), that VFORM has the value PAS. The LFG alternative, as in Bresnan (1982), stipulates merely that VFORM has the value PSP, but at the cost of positing TWO strata of syntactic representation, c-structure and f-structure. A genuinely monostratal lexical rule has to impose the feature [+PAS] on the derived word.

4.2.2. *On the nature of* [+*PAS*]. Consider the derived forms in (39) again, with respect to the syntactic features assigned to the derived word by the derivational rule.

In (39a) we see the operation of a rule deriving 'approximative' adjectives from other adjectives, in (39b) of a rule deriving 'repetitive' transitive verbs from other transitive verbs. Should one effect of these

rules be to mark the derived items as having +APPROX and +REPET, respectively, among their syntactic features? I take it as given that neither feature plays a role on its own in English syntax. There are still two ways in which we might want to say that derived items bear a feature like +APPROX; but in neither case would we want to identify such a feature with a syntactic feature. (Similar remarks hold for the derivational rules illustrated in [39c] and [39d], with the added wrinkle that 'zero derivation' rather than affixation is involved.)

First, 'approximative' and 'repetitive' could be taken to characterize (crudely and informally) the meaning components attributable to the derivational rules, meaning components shared with words that are not so derived, for instance approximative *off-blue* and repetitive *mimic*. Second, +APPROX and +REPET could be interpreted as indices of the particular derivational rules I am examining (in which case *off-blue* would not be +APPROX, nor *mimic* +REPET). On the first (or semantic) interpretation, we would not expect a syntactic feature to be coextensive with +APPROX, since syntactic categories in general are related to but not identical to semantic categories; saying this is only reaffirming the autonomy of syntax from semantics. On the second (or derivational morphological) interpretation, a different autonomy principle is threatened, namely the PMFS: if the feature +APPROX indexes the application of a particular derivational rule, then it must not be available to condition or constrain syntactic rules. The syntactic component must be blind to features like +APPROX.

Now consider a derivational rule R of English that imposes the feature [+PAS] on its derived form. This feature is not to be understood semantically; verbs like those in (46) are not syntactically [+PAS], despite the fact that their subjects are interpreted as patients. Instead, the feature functions as an index of R, since every item that is syntactically [+PAS] is derived by R, and no other items are syntacially [+PAS]. Again we are faced with a violation of the PMFS.

(46) a. Willie got/received an answer from the dean.
b. Tracy drew praise/criticism from the entire department.

4.2.3. *Basing derivatives on inflected forms.* The difference between derivational and inflectional morphology is crucial here. There is no conflict with the PMFS if a passive lexical rule stipulates that the derived form bears an inflectional feature like [VFORM:PSP], as in (40).

Morphophonologically there is no bar to a passive lexical rule that stipulates [VFORM:PSP]. The phonological shape of a derived passive verb would be identical to an inflected form (the past participle) of the

corresponding active verb, but the shape of a derived word is not infrequently based on a specified inflected form of the source word, as when adverbs in French are derived by suffixing *-ment* to the feminine form of a source adjective, as in (47), or when the past participle form of an English verb serves without affixation as a derived adjective, as in (39d).

(47)		Adj[MASC]	Adj[FEM]	Adv
	a.	*lent* 'slow'	*lente*	*lentement* 'slowly'
	b.	*grand* 'great'	*grande*	*grandement* 'greatly'
	c.	*heureux* 'happy'	*heureuse*	*heureusement* 'happily'
	d.	*faux* 'false'	*fausse*	*faussement* 'falsely'

4.2.4. *Predicting syntactically relevant features in derivational rules.* It will now be clear that my earlier rejection of PAS as a value of VFORM in English is also central to the demonstration that the monostratal lexical-rule analysis of the English passive is caught in an impasse. If we can use [VFORM:PAS] to label instances of [VFORM:PSP] that have [+PAS] syntactic function, then there is no violation of the PMFS here. In fact, derivational rules in which the derived form is stipulated as having a particular syntactically relevant feature are quite common; such a feature can be either a head feature (encoding an 'overt grammatical category') or a foot feature (encoding a 'covert grammatical category'), as I now illustrate with examples from German (for head features) and English and Tamil (for foot features).

In German a number of rules deriving nouns assign a particular gender to the derivative, either as a default, as in (48a), or invariably, as in (48b) and (48c) (examples from Hammer 1983: 2–4). The GEND feature in German participates in modifier–noun agreement and is clearly a GPSG head feature in the language.

(48) a. Nouns formed from strong verb stems by zero derivation:
MASC *Biss* 'bite', *Fall* 'fall, case', *Wurf* 'throw'
b. Nouns with the suffixes *-ei*, *-heit*, *-keit*, *-schaft*, *-ung*:
FEM *Schmeichelei* 'flattery', *Kindheit* 'childhood', *Freundschaft* 'friendship'
c. Diminutives in *-chen*, *-el*, *-erl*, *-lein*, *-le*, *-li*:
NEUT *Bäumchen* 'little tree', *Mädel* 'girl', *Fräulein* 'miss'

In English, the reflexive pronouns in (49a) are derived by compounding two source words as in (49b); the foot feature REFL is imposed on the derivative word.

(49) a. myself, yourself, herself, itself, ourselves, yourselves
b. PRO[CASE:POSS] + N[*self*]

In Tamil, 'almost all the basic question words begin with *e-*' and 'are members of three-term sets, of which the other two members are proximate (*i-*) and remote (*a-*) demonstratives' (Asher 1982: 6), as in (50); the derivational rule for the question words imposes the foot feature WH on the derivative.

(50) *iŋke* 'here', *aŋke* 'there', *eŋke* 'where?'

4.2.5. *Syntax-free morphology*. In the light of such examples it would seem that the lexical-rule approach to the English passive could be rescued by saying that a lexical passive rule imposes the morphological feature [VFORM:PAS] on the derivative word, much as the German rule deriving diminutive nouns in *-chen* imposes the morphological feature [GEND:NEUT] on the derivative word. But the two cases are not really parallel. Although [GEND:NEUT] is certainly a morphological feature in German, there is no independent reason to think that [VFORM:PAS] is a morphological feature in English (as opposed to Latin). The relevant morphological feature in English is [VFORM:PSP], and positing [VFORM:PAS] in addition to it would have no motivation beyond saving the lexical-rule treatment of the English passive.

Positing [VFORM:PAS] would in fact contravene what we might think of as a 'principle of syntax-free morphology' (as Ivan Sag has put it to me), a methodological, rather than theoretical, principle asserting that morphological categories must be established on morphological grounds and cannot be posited solely on the basis of differences in syntactic behavior. Without a methodological PSFM, nothing would militate against the claim that English has, in addition to a [VFORM:BSE] occurring with infinitival *to*, as in (51a), a dozen or so other verb forms, all homophonous with the base form, as in (51b–51m).

(51) a. VFORM:BSE (base): I need to *be* quiet.
b. VFORM:PRC (perceptive): I saw/heard Pat *be* abusive.
c. VFORM:CAU (causative): I made/had Chris *be* polite.
d. VFORM:PMS (permissive): I let Terry *be* in charge.
e. VFORM:AFF (affective): I've never had anyone *be* nice to me.
f. VFORM:MOD (modal): I must *be* dreaming.
g. VFORM:SBJ (subjunctive): I require that they *be* heard.
h. VFORM:IMP (imperative): *Be* still, my heart.
i. VFORM:EXC (exclamatory): Them *be* quiet! Never!
j. VFORM:INJ (injunctive): The gods *be* kind to you, my friend.

k. VFORM:HRT (hortative): Let's you and me *be* friends.
l. VFORM:SER (serial): I want you to go/come *be* nice.
m. VFORM:XCL (exclusive): Rather than *be* quiet, we whistled.

What we want to say about lists like (51), it seems to me, is that they are inventories of distinct syntactic constructions that employ, incorporate, or 'call' the same morphological form (or, in still other phrasing, that they have the same morphological form among their concomitants or exponents).[13] Adopting this view leads us to expect that each construction can have other exponents in addition to [VFORM:BSE], and by and large this expectation is satisfied. The English imperative, for instance, has as its exponents 'optionality of subject, along with the restrictions on what subjects are possible, lack of tense inflection, and the necessity for *do* with negation or emphasis, even with *be* or auxiliary *have*' (Davies 1986: 7).

4.2.6. *Syntactic features in the lexicon.* I conclude that monostratal lexical-rule analyses of the passive that are syntactically adequate either violate the PMFS or require the postulation of ad hoc features in the morphology, against the methodological PSFM. For the proper articulation of a monostratal syntax with morphology in English a syntactic, rather than lexical, analysis of the passive is called for.

Assuming that the features [−PAS] and [+PAS] can be associated with individual lexical items, as I did in section 3.1, runs up against neither the PMFS nor the PSFM. With respect to the PMFS, in my analysis there is no derivational rule imposing values of PAS on its derived words, so that there is no question of encoding the application of a derivational rule in a syntactically relevant feature, as there was in the Pollard-style analysis. And with respect to the PSFM, the feature [+PAS], unlike [VFORM: PAS] in the Pollard-style analysis, plays no role in the morphology of English.

My analysis does, of course, permit individual lexical items to be restricted to or prohibited from occurrence in particular constructions — *resemble* restricted to the passive construction, *rumor* prohibited from it. The items that are lexically marked in this way must belong to the head category for the construction (to V, in the case of the passive, which is a VP construction), and the construction feature must be a GPSG head feature (in the case of the passive, the VP feature must be inherited by the V).

Though I will not pursue the topic here, these observations point to an incipient theory of what was called *rule government* in TG. Not all construction features will be GPSG head features — I think it is reasonable to treat the construction features for topic and focus construc-

tions in English, as in (52), as nonhead features, in contrast to such head features as PAS and IMP — and as a result not all constructions will be 'governed', that is, will be capable of having lexical exceptions.

(52) a. Sashimi I am wary of, but sushi I like.
b. Who did I see in the audience but the Brothers Karamazov!

5. Toward an adequate monostratal analysis

The central defining feature of a passive VP in universal grammar is the one in (33a) above, that this VP is missing an NP — prototypically, but not necessarily, an NP[DO].[14] The possibility of an 'agent phrase' in the VP (exponent [33b]) is not an invariable concomitant of the passive; in fact, Keenan (1985: 247) defines 'basic passives' to be agentless. And as I have already noted, passive morphology on the head V (exponent [33c]) is not necessary either. RG represents the lack of an NP within VP[+PAS] directly, as the consequence of an advancement of this NP to SU, but the monostratal phrase structure approaches I have been considering are more indirect in their treatment of passive syntax, and they achieve part of the effect of RG's syntactic advancement via semantic interpretation rather than syntactic rules.

5.1. *BSLASH*

Now the GPSG mechanism for representing missing constituents is the SLASH feature, but we cannot simply adopt this in its usual version, because the standard SLASH describes unbounded filler–gap dependencies, as in the cleft sentence in (53b), while the dependency in passives is decidedly bounded. Passivization cannot reach into subordinate clauses, as (53c) illustrates, or even into NPs, as (54) shows.

(53) a. Mickey said Gerry saw Kim.
b. It was Kim that Mickey said Gerry saw.
c. *Kim said (by Mickey) Gerry saw.
(54) a. Casey took a picture of Leslie.
b. It was Leslie that Casey took a picture of.
c. *Leslie was taken a picture of (by Casey).

Indeed, though an NP is missing from a passive VP, there is no evidence to suggest that the hole in such a VP should be represented as a constituent with the feature [+NULL] (in the manner of Gazdar et al.'s current [1985: section 7.3] version of the main SLASH termination

metarule) — that is, as a trace — rather than treated as a constituent that is simply absent from the VP (in the manner of Gazdar, Klein, et al.'s older [1982: section 5] version of this SLASH termination metarule). That is, there is no evidence that the NP missing after *asked* in (55a) should be represented as a trace, like the gap after *ask* in (55b), rather than merely being absent, like the NP after *asked* in (55c).

(55) a. Robin was asked (by Sandy) to write the introduction.
b. Who did Sandy ask *t* to write the introduction?
c. Sandy asked a question.

Finally, the standard SLASH is a GPSG foot feature and so can induce multiple gaps, as in (56), though passivization can cause only one NP to be absent from a VP, as in (57). It is not clear to me that this last difference has to be stipulated, since it can be argued that (57a) is bad because the object of *opening* is not available for passivization on its own (compare [58]) and that (57b) is bad for semantic or pragmatic reasons, given that parallel object-to-subject raisings are equally bad, as in (59) versus (56b).

(56) a. Which letters did Lynn discard *t* without opening *t*?
b. These letters are tough to discard *t* without opening *t*.
(57) a. *These letters were discarded (by Lynn) without opening.
b. *These people were shown to (by Robin).
(58) a. Chris ate (dinner) without drinking this wine.
b. *This wine was eaten (dinner) (by Chris) without drinking.
(59) *These people are tough (for Robin) to show to.

So there are at least two, and maybe three, differences between the SLASH of Gazdar et al. (1985) and the feature needed to describe the passive, which I will call BSLASH:[15] BSLASH is local, that is, it cannot be propagated into an S or NP (an effect that can be obtained via feature cooccurrence restrictions specifying that BSLASH is incompatible with S and NP), while SLASH can; \NP is terminated by having an NP not appear in some construct, while /NP is terminated in an NP trace; and, perhaps, BSLASH can appear on only one daughter constituent, while SLASH (in at least some constructions) can appear on more than one. I take all of these characteristics to be universal rather than parochial:

(60) Characteristics of BSLASH in universal grammar:
a. BSLASH is a foot feature.
b. BSLASH is incompatible with S and NP.
c. \X terminates with an absent X.
(d. BSLASH cannot occur on two daughter categories.)

As I noted in section 2.1, this is not the first time that more than one SLASHlike feature has been posited as part of a framework for phrase structure grammar. In addition to the proposals I mentioned above, there is work by Thomas Hukari and Robert Levine now in progress on four missing-object constructions (object-to-subject raising, infinitival degree modification with *too* and *enough*, and infinitival purpose adverbials), in which a feature GAP is assumed that has much in common with BSLASH, though there are two, or maybe three, differences that appear to prevent identifying GAP and BSLASH: GAP is compatible with NP, as in (61) below versus (54c) above; an NP raised from subject to object can be absent via BSLASH but not via GAP, as in (62) versus (63) below; and GAP can occur on two daughter categories, as in my earlier examples (56b) versus (57a).

(61) a. Leslie is tough to take a picture of.
b. Jamie is too tall to take a picture of.
c. Pat is quiet enough to take a picture of.
d. Sandy is here for you to take a picture of.

(62) Kelly is believed (by all of us) to be a spy.

(63) a. *Kelly is tough (for us) to believe to be a spy.
b. *Gerry is too talkative (for us) to believe to be a spy.
c. *Bobby is secretive enough (for us) to believe to be a spy.
d. *They maligned Bobby (for us) to believe to be a spy.

5.2. *Sketch of the analysis*

The analysis I am proposing for English depends crucially on two features: BSLASH, just discussed, and the construction feature PAS, whose universal characteristics are specified in (64). The restriction of [+PAS] to V[−SUBJ] categories in (64b) encodes Keenan's observation that the passive is a VP, and not an S, construction. Next, the introduction of [+PAS] is achieved by a parochial government principle, as in (65). Finally, the exponents of a passive VP in English are described as in (66), which follows (33) from section 3.1 but with the incorporation of BSLASH.

(64) Characteristics of PAS in universal grammar:
a. PAS is a head feature.
b. [+PAS] occurs only with [+V, −N, −SUBJ] categories.

(65) The verbs *be* and *get* can govern VP[+PAS].

(66) Exponents of VP[+PAS] in English:
a. If VP has [+PAS] then it has [\NP].

b. VP[+PAS] can have PP[*by*] as a daughter.[16]
c. If VP has [+PAS] then it has [VFORM:PSP].

As for the exceptionality of verbs like *resemble* and *rumor*, this is represented in the way described in sections 3.1 and 4.2.6, as the syntactic features [−PAS] and [+PAS], respectively, belonging idiosyncratically to particular verbs. Ordinary verbs have neither feature in the syntactic part of their lexical entries, and so are predicted to occur in both active and passive constructions.

The rules in (65) and (66) have been stated specifically for English, but of course much of their content is predictable on universal grounds. In place of (65), universal grammar stipulates that a language that uses the feature [+PAS] introduces it via a rule requiring that the VP complements of certain verbs (which will be verbs of being, becoming, reception, motion, or experience, according to Keenan's survey; 1985: section 2.1.2) have the feature [+PAS]. As for (66), every language that uses the feature [+PAS] has the feature coefficient restriction in (66a), the 'missing constituent' clause; the unmarked situation is for the implied feature to be [\NP[DO]]. Such a language can also have a branching principle as in (66b) or a feature coefficient restriction as in (66c). The universal branching principle instantiated in the English rule (66b) permits VP[+PAS] to have a daughter with the features [−V, BAR:2, ERG], that is, a NP or PP daughter with a case feature marking agents. And the universal feature coefficient restriction instantiated in the English condition (66c) requires that VP[+PAS] have some specified value for the morphosyntactic feature VFORM; if the value belongs to the [+FIN] subset for a language, then the specified feature is [VFORM:PAS], as in Latin.

On this analysis, a language with a truly derivational passive lacks the counterpart of the English restriction in (66c). The head feature convention still requires that the feature [+PAS] be shared by the head V of VP[+PAS], and this feature is stipulated, in the derivational rule for the passive in the language, as a syntactic property of the derivative word.

Undoubtedly many of the details of my universal grammar proposal need to be refined and amended, but even this brief sketch covers nearly the full range of facts that have been cited in crosslinguistic discussions of the passive. It also goes a long way toward an adequate description of the English facts. At least one loose thread requires some comment, however.

5.3. *Objects and the overgeneration problem*

The feature BSLASH appears to provide a solution to the main outstanding problem with the metarule analysis of English prepositional passives,

as discussed in section 2.3: POs and DOs are treated as forming a natural class because they are both NPs within VP.

But not all NPs within VP are passivizable in English. Bare NP adverbials like those in (67)–(69), for instance, NEVER are. That this restriction is syntactic rather than semantic can be seen by comparing the totally ungrammatical locative passive in (67b) with the one in (67c), which is merely very hard to contextualize. Also, the passivization of demoted DOs, as in (70), is categorically rejected by some speakers but fully accepted by others.

(67) a. Millions travel home every weekend.
b. *Home is traveled every weekend by millions.
c. ?Home is traveled to every weekend by millions.
(68) a. Millions travel every Friday to Nevada.
b. *Every Friday is traveled to Nevada by millions.
(69) a. Kelly always drives that dangerous way.
b. *That dangerous way is always driven by Kelly.
(70) a. %A great deal of money was given Kim.
b. %The thousand dollars was finally paid us by our creditors.

What I want to say about facts like these is that the value NP for the feature BSLASH in (66c) is too inclusive. For English speakers generally, the only NPs that are available as values of BSLASH are DOs, demoted DOs, IOs, and POs — a class of NPs I will group together under the label OB, so that (66c) should specify [\NP[OB]] rather than just [\NP]. I intend OB to be a feature made available by universal grammar, just as other features grouping together NPs with different grammatical relations must be. (I have in mind at least a nuclear term feature NT, taking in SU and DO, and a term feature TM, taking in IO as well as SU and DO.)

A restriction to OBs excludes bare NP adverbials and also measure NPs, as in (71) versus (72). It can accommodate both sets of speakers with respect to examples like (70), if we say that demoted DOs in the double-accusative construction of English are marked, in the rule describing the construction, as belonging to the OB class for some speakers and not for others. To permit such marking is merely to permit individual phrase structure rules to stipulate the grammatical relation features belonging to NPs mentioned in the rules, an ability that must be available in the framework in any event.

(71) a. Marty the butcher weighs nearly 150 pounds these days.
b. *Nearly 150 pounds are weighed by Marty the butcher these days.
(72) a. Marty the butcher weighs nearly 150 pounds of meat every day.

b. Nearly 150 pounds of meat are weighed by Marty the butcher every day.

But even with passivization restricted to OBs in English, my account still overgenerates, as will be obvious from the prepositional passives in (73)–(75) below. There are several directions in which an account of such facts might be sought. One is in semantics and/or pragmatics.

(73) a. Robin frequently slept until noon.
b. *Noon was frequently slept until (by Robin).
(74) a. Kelly investigated with telescopes.
b. *Telescopes were investigated with (by Kelly).
(75) a. The trouble began with a gunshot.
b. *A gunshot was begun with (by the trouble).

Nearly everyone who has written on prepositional passives in English has noted that there are, apparently, semantic and pragmatic constraints on the passivizability of POs. Objects of *until*, as in (73), cannot be passivized, nor can objects of instrumental *with*, as in (74), and elative *from* and *with*, as in (21a) and (75), and it might be that their immunity from advancement in the passive has to do with the interpretability or contextualizability of the sentences that result (though perhaps we should recall from section 2.3 that instrumentals are passivizable in Imbabura Quechua). If a semantic or pragmatic account of facts like these is available, then nothing more need be said about them in a syntactic description. On the other hand, there might be systematic exclusions of NPs from the OB class for syntactic purposes, in which case these must be stipulated in syntactic rules.

I have nothing fresh to say on this subject, beyond having clarified to some extent what the descriptive issues are. A full account of the constraints on prepositional passive remains to be given, but a monostratal phrase structure framework seems entirely adequate for the task.

6. Conclusion

No fully satisfactory description of the English passive, and certainly none of the passive in universal grammar, is available in either a metarule or a lexical-rule approach, assuming a monostratal phrase structure framework for syntactic description. We could abandon phrase structure rules as the central descriptive mechanism in syntax, as APG does, or we could abandon the restriction to a single stratum of description, as LFG, RG, and TG all do, to varying degrees. Or we could give up the PMFS. Or we could give up the PSFM. But even while maintaining metatheoreti-

cal commitments to phrase structure grammar, to a single stratum, and to the PMFS and PSFM, we can still frame an account of the passive, both in English and in universal grammar, that is at least as adequate as any in the literature. This account is built upon two additions to the (putatively universal) feature system of GPSG: the head construction feature PAS and the foot feature BSLASH.

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Ohio State University
Stanford University

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1. Gazdar et al. have [PAS], rather than [VFORM:PAS], in their formulation, but it turns out that PAS functions only as a value of the feature VFORM, not as an independent feature parallel to VFORM. The matter is not merely notational, as I point out in section 3.
2. In the statement of these rules, and throughout the paper, VFORM is a GPSG head feature whose values include BSE (bare infinitive), FIN (finite), PSP (past participle), and PAS (passive participle). I follow standard GPSG practice in treating the names of prepositions as features on PP — for example, PP[*by*] in (1) — though I believe this idea is misguided; the matter does not bear on the issues examined in this paper. Nonstandardly, I treat certain grammatical relations between an NP and its V as features on the NP, and I use SU (subject) and DO (direct object), rather than 1 and 2 as is usual in RG, to indicate these grammatical relations; strictly speaking, SU and DO should be treated as values of a feature (as [GR:SU] and [GR:DO], say) but I will use the shorter representations. SUBCAT in (2) refers to the NPs subcategorizing a V; for HG SUBCAT is a list including SU, whereas in standard GPSG SUBCAT is an integer that indexes a set of arguments not including SU — another matter tangential to the issues I am concerned with here. Finally, in later discussion I will treat TR (transitive) as a two-valued feature on V, a formal move that, like the direct representation of the grammatical relations SU and DO on NP, allows for the perspicuous statement of generalizations, although the resulting system of features is scarcely minimal.
3. The relacements for metarules typically involve other innovations in the framework (the operation of liberation, as in Zwicky 1986, for instance).

4. I am not denying that there are semantic and pragmatic constraints on passivization; see Weiner and Labov (1983) and Siewierska (1984: ch. 6) for wide range of examples and for extensive bibliography. My claim is merely that not all of the conditions on passivization follow from the meanings/uses associated with the lexical items involved and with passivization itself.
5. Postal notes that many analysts posit a 'reanalysis' rule, optionally reassociating the P with the preceding V rather than the following NP, to make both P+NP and V+P available as constituents. GPSG offers no direct analogue to this treatment.
6. Whether one should call it monostratal or multistratal is not entirely clear. On the one hand, in APG all syntactic generalizations are stated as well-formedness conditions applying to single (but very complex) graphs. On the other hand, one referee for this journal has observed that the term 'stratum' was devised for just such graphs, which can be interpreted as representing a sequence of strata in omnibus fashion.
7. Postal mentions a number of other types of overgeneration, some of which I will examine in section 3.3.
8. This constraint is a filter on individual branchings. As such it is comparable both to conditions describing agreement in or government of morphosyntactic features between sister constituents, and also to linear precedence rules — and in no way comparable to metarules, which predict the membership of one set of branching (that is, immediate dominance) rules on the basis of the membership of another set. A given branching is well formed in a language if it satisfies all such conditions for that language, in addition to being an extension of some branching rule for that language.
9. The constraint would appear to rule out (i) *Kim was finally taken notice of* as an alternative to (ii) *Notice was finally taken of Kim*. However, following Bach (1980: section 5.2) I assume that *take notice of* has two structures: one in which *notice* is syntactically a complement of *take*, and for which a passivized PO is ungrammatical, though passivization of *notice* is possible; and one in which *take notice of* is a lexical V, so that its object is passivizable, while its internal noun *notice* is not. Note that there are idioms with only the first set of possibilities (**The battle was finally brought word of* versus *Word was finally brought of the battle*) and idioms with only the second (*Kim was finally gotten hold of* versus **Hold was finally gotten of Kim*).
10. Indeed, in Gazdar, Pullum, and Sag (1982: 597), the special nature of [VFORM:PAS] is suggested by its characterization as marking that a VP 'is a passivized VP', while [VFORM:BSE] is said to mark that 'the head V of the V' is a bare infinitive', [VFORM:PSP] that 'the head V of the V' is a past participle', and so on.
11. One might want to say that the copula *be* is a verb subcategorized to occur with a [+PRD] complement and that passive *be* and *get* are verbs subcategorized to occur with a [+PAS] complement, rather than that these verbs govern construction features. After all, the distinction between X being subcategorized for a complement Y having feature Z, on the one hand, and X imposing the feature Z on complement Y, on the other, is not always easy to make. What is at stake in the case of [+PRD] and [+PAS] is a possible universal generalization that only morphosyntactic features, and not construction features, can be governed. I will not attempt to decide these issues here.
12. Shibatani is also concerned with constructions in which passive semantics is expressed by nonpassive morphological means, a topic that does not bear directly on the relationship between construction features and morphosyntactic features.
13. I realize that on this view the present participle and gerundive of English verbs (which are always homophonous) should be treated as a single value of VFORM, not as distinct values PSP and GER, as is standard in the GPSG literature. I am not at all sure that this is a bad conclusion, though there are many details of the analysis that need working out.

14. As a result, the prototypical passive VP has a transitive verb as its head, and since the prototypical transitive verb has an agent SU and a patient DO, the advanced NP is prototypically a patient, the demoted NP prototypically an agent.
15. For 'backslash'. I will use '\' as shorthand for BSLASH, just as GPSG uses '/' as a shorthand for SLASH. Absolutely nothing hinges on the choice of these particular symbols and names.
16. Exponents (a) and (c) are feature cooccurrence restrictions, but (b) is a theoretical horse of a different color: an 'optional constituent' (OC) branching rule. Such rules correspond to a distinguishable subtype of metarule in the standard GPSG literature; see, for instance, Brodie's (1985) metarule analysis of optional adverbs in English. Clearly the issue at hand here goes well beyond the details of the English passive, and I cannot hope to develop or defend an account of OC branching rules in this paper. I observe only (as Christopher Culy has pointed out to me) that such a rule could supply an optional DAUGHTER, as in my statement of (b), or an optional SISTER ('V[+PAS] can have PP[*by*] as a sister'), and that the two formulations would make somewhat different predictions, since only the latter should be able to give rise to something like subcategorization (in this instance, of the lexical category V[+PAS] according to whether it occurs with PP[*by*]).

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