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BARBARA FOX
University of Colorado, Boulder

PAUL J. HOPPER
Carnegie Mellon University

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Passive Participles across Languages

Martin Haspelmath
Free University of Berlin

1. Introduction

In many European languages the passive construction is formed analytically by means of an auxiliary verb (often 'be' or 'become') and a passive participle, as in (1a). While much has been written on the syntax of such passive constructions, it has not so often been emphasized that passive participles of this kind occur not only as constituent parts of passive constructions, but also as non-finite adjective-like attributive modifiers of nouns, as in (1b).

(1)   a.   *The money was **stolen** by the banker.*
       b.   *The **stolen** money was found yesterday.*

A transformational approach would, of course, allow a derivation of the attributive participle *stolen* in (1b) from a finite passive construction as in (1a), but in real languages the reverse happens: Speakers quite generally use non-finite forms like participles, infinitives, and converbs to build up complex periphrastic constructions which are then gradually grammaticized, integrated into the verbal paradigm, and may even become synthetic forms (cf. Haspelmath (1990) specifically on the grammaticization of passive markers.)

Passive participles have been surprisingly little studied in their own right. This paper aims to contribute to our knowledge about passive participles by looking at cross-linguistic similarities and differences of passive participles and related phenomena.

After a few remarks on the notion of participle in general and a discussion of the notion of orientation in participles (section 2), I observe a cross-linguistic tendency for an asymmetric distribution of active and passive par-

ticiples over different tense-aspects (3). The following sections then discuss the various types of passive participles in turn: resultative participles (4), pure (past) passive participles (5), and (modal) non-past passive participles (and verbal adjectives) (6), and two possible explanations of the asymmetric distribution are discussed (7-8). The last two sections discuss the diachronic origins of passive participles (9) and the position of participles along the noun-verb continuum (10).

The cross-linguistic data adduced in this paper show that passive participles are entities in their own right that cannot be reduced to the concepts of "passive (voice)" and of "participle". There are no special participles for other voices, e.g. "reflexive participles" or "middle participles" (whatever is meant by "middle"). An understanding of the specific properties of participles seems a prerequisite for understanding their relationship with other voice phenomena.

2. Participles and Orientation

Participles are best defined as verbal adjectives,[1] i.e. words that behave like adjectives with respect to morphology and external syntax, but are regularly derived from verbs. Often additional features are required for a verb-derived adjective to be called a participle: it must have verbal valence and be part of the verbal inflectional paradigm. Thus, English adjectives like *understandable, reliable*, etc., which do not belong to the verbal paradigm, are not normally considered participles. However, since the inflection-derivation distinction is notoriously hard to draw, "true" participles and derivational verbal adjectives cannot always be distinguished and I will sometimes cite evidence from verbal adjectives as well.

It is quite clear that not all languages have participles. The definition of participle ("verb-derived adjective within a verbal paradigm") apparently presupposes the existence of adjectives in a language. Since there are many languages that lack primary adjectives,[2] at least these languages will also lack participles. In addition, there are many languages that do have a clearly discernible class of adjectives but that lack verb forms with adjectival properties. Nevertheless, participles are widely represented in languages of different families, although not evenly distributed. Participles seem to be common in Europe and Asia (excluding the isolating languages of South East Asia), they are rather common in Africa (again excluding the

isolating languages of West Africa, but also, surprisingly, the Bantu languages), and they appear to be rarer in the Americas and Oceania. These impressionistic remarks are only meant to be suggestive, and much more comparative work needs to be done before any firm conclusions can be reached.

Care should be taken to distinguish participles (= inflectional verbal adjectives) in this sense from verb forms used for adverbial subordination, i.e. verbal adverbs (or **converbs**, as they are called in Nedjalkov's (forthcoming) typological investigation[3]). Such verbal adverbs are also often called "participles" in the Western grammatical tradition because in several European languages participles are also used in adverbial function.[4] This usage (exemplified by English *She came in, crying*) is not characteristic of most of the participles considered in this paper.

Participles function like adjectives in that they modify the head noun with which they are combined. In a modifying relation, the modifier is relational and has a slot for its head which coincides with its referent.[5] Let us first take purely adjectival examples. Semantically the English adjectives *dreadful* and *apprehensive* both involve fear and consequently an experiencer (who experiences the fear) and a stimulus (which is the immediate cause of the fear). They differ in that the noun modified by *dreadful* is understood to be a stimulus, whereas the noun modified by *apprehensive* is understood to be an experiencer. Using the notion of **orientation** (adopted here from Lehmann 1984:152), we can say that *dreadful* is **oriented** toward its stimulus participant, and *apprehensive* is **oriented** toward its experiencer participant.[6] Such variation in orientation is possible whenever the meaning of a word is a concept involving more than one semantic participant. Participles, which are forms of verbs, could in principle be oriented toward any of the verb's participants. In practice, however, we find mainly **active participles**, which are oriented toward the verb's agent, and **passive participles**, which are oriented toward the verb's patient. Some examples:

(2) Active participles (agent-oriented)
 a. Hungarian *falat fest-ő ember* 'a man painting a wall'
 b. Arabic *ar-rajulu š-šaaribu* 'the drinking man'
 c. German *der fressende Hund* 'the eating dog'

(3) Passive participles (patient-oriented)
 a. Hungarian *fő-tt tojás* 'cooked egg'
 b. Arabic *al-maa'u l-mašruubu* 'the water that was drunk'
 c. German *der gefressene Knochen* 'the eaten bone'

In these examples, the participles are **inherently oriented** (i.e. the participial marker specifies their orientation). However, it is also possible for participles to be inherently unoriented and oriented only **contextually**. For instance, in Lezgian, the Imperfective participle *kŝizwaj* (from *kŝiz* 'write') can be oriented either toward the agent or toward the patient, as in (4a-b), or toward a peripheral participant, as in (4c-d).

(4)   Lezgian (Nakho-Daghestanian)

    a. *čar   kŝi-zwa-j   ruš*
       letter(ABS) write-IMPERF-PARTCP girl
       'the girl who is writing a letter'

    b. *ruš-a   kŝi-zwa-j   čar*
       girl-ERG write-IMPERF-PARTCP letter
       'the letter which the girl is writing'

    c. *ruš-a   čar   kŝi-zwa-j   stol*
       girl-ERG letter(ABS) write-IMPERF-PARTCP table
       'the table on which the girl is writing a letter'

    d. *ruš-a   čar   kŝi-zwa-j   juǧ*
       girl-ERG letter(ABS) write-IMPERF-PARTCP day
       'the day on which the girl is writing a letter'

In Lezgian, the orientation of participles is clear only from the syntactic context; the participle itself does not impose any restrictions. Such **contextually oriented** participles can do much more than participles with an inherent orientation, and languages that have them usually use them as their primary relative clause forming strategy. For this reason contextually oriented participles are also known as **relative participles** (cf. Lehmann 1984:49-58).

In this paper I will be mainly concerned with participles that are inherently oriented toward their patient, i.e. with passive participles.

3.   Asymmetries between Passive and Active Participles

In Esperanto we find a complete symmetry between active and passive participles in different tenses, cf. (5):

(5)   Esperanto (*skribi* 'write')

	Active	Passive	Finite verb
present	*skrib-a-nta*	*skrib-a-ta*	*skrib-a-s*
past	*skrib-i-nta*	*skrib-i-ta*	*skrib-i-s*
future	*skrib-o-nta*	*skrib-o-ta*	*skrib-o-s*

Another characteristic of Esperanto participles is that they show the same tense morphemes as finite verbs. In general, neither of these two features, complete active/passive symmetry and finite tense morphology, is exhibited by participles in natural languages. In this section I will present some data that illustrate commonly found asymmetries. Later on I will try to explain why natural languages do not show the neat patterns of (5).

True, a symmetric relationship between active and passive participles can also be found in natural languages, e.g. in Turkish:

(6)   Turkish

	Active		Passive	
present PARTCP	*yaz-an*	'writing'	*yaz-ıl-an*	'being written'
future PARTCP	*yaz-acak*	'about to write'	*yaz-ıl-acak*	'about to be written'
past PARTCP	*yaz-mış*	'having written'	*yaz-ıl-mış*	'(having been) written'

But Turkish is crucially different from Esperanto in that its passive marker *-ıl-* is completely independent of the participial markers and occurs in finite verbs as well (*yaz-dı* 'wrote', *yaz-ıl-dı* 'was written').

And natural languages where a participial marker appears to follow a finite tense (or tense/aspect) morpheme also exist, for instance Lezgian:

(7)   Lezgian

	Finite verb		Participle	
Imperfective	*fi-zwa*	'is going'	*fi-zwa-j*	'going (currently)'
Habitual	*fi-da*	'goes'	*fi-da-j*	'going (habitually)'
Perfect	*fe-nwa*	'has gone'	*fe-nwa-j*	'having gone'

But Lezgian is crucially different from Esperanto in that it does not have inherently oriented participles, but rather versatile relative participles, as we saw above (cf. (4a-d) above).

However, many languages show neither finite tense markers nor active/passive symmetry in their participles. Latin can be taken as the paradigm case of such asymmetric participial systems (cf. (7)). (Zamenhof improved on this "imperfect" state of affairs and thereby made Esperanto a rather unnatural language.)

(8) Latin (*scribere* 'to write')

	Active		Passive	
present	*scrib-ens*	'writing'	—	
past	—		*scriptus*	'written'
future	*scrip-turus*	'about to write'	*scrib-endus*	'to be written'

Such asymmetric participial systems are not uncommon across languages, cf. (9-13):

(9) Arabic (*k-t-b* 'write')

	Active		Passive	
present	*kaatibu*	'writing'	—	
past	—		*ma-ktuubu*	'written'

(10) Finnish (*luke-* 'read')

	Active		Passive	
present	*luke-va*	'reading'	*lue-tta-va*	'readable'
perfect	*luke-nut*	'having read'	*lue-ttu/luke-ma*	'read'

(11) Hungarian (*olvas-* 'read')

	Active		Passive	
present	*olvas-ó*	'reading'	—	
perfect	—		*olvas-t*	'read'
future	—		*olvas-and-ó*	'to be read'

(12) Georgian (*zrd-i-s* 'brings up')

	Active		Passive	
present	*m-zrd-eli*	'bringing up'	—	
past	—		*zrd-ili*	'brought up'
future	—		*sa-zrd-eli*	'who will be brought up'

(13) Polish (*opierać* 'to support'; Weiss 1977)

	Active		Passive	
imperfective	*opierający*	'building'	*opierany*	'(being) supported'
perfective	—		*oparty*	'supported'

It appears that a general pattern emerges from the asymmetric systems given above: The forms that are most likely to exist are the present active participle and the past passive participle. The reverse, an asymmetric participial system with only a present passive participle and a past active participle, is probably impossible. Furthermore, non-past passive participles show

a tendency to have future or modal meaning. In the next sections I will present more comparative data and attempt to explain this general pattern.

4. Resultative Participles

The participle used in passive constructions in English and other languages does not always have passive orientation. For example, in (14), the English Past Participle is oriented toward the subject of an intransitive verb and is therefore active, but it refers to a past event.

(14) a. *a recently erupted volcano*
      b. *a rotten apple*
      c. *a fallen leaf*

It has been observed by many linguists (e.g. Jespersen 1940:419ff.; Bresnan 1982) that the formation of Past Participles from intransitive verbs is subject to semantic restrictions: According to Bresnan, it is possible only when the subject of the intransitive verb has the semantic role *theme*, so that e.g. **the danced shaman*, **the meditated yogi* (where the participle would be oriented toward the verb's agent) are impossible. Alternative formulations say that say that Past Participles are possible only from unaccusative intransitive verbs (Levin and Rappaport 1986),[7] or that they are possible only with telic intransitive verbs (Abraham 1985).

The existence of participles (or verbal adjectives) that can be oriented toward the patient of transitive verbs or the subject of unaccusative intransitive verbs is by no means a peculiarity of English. It is widely attested across languages, and (15-23) give a taste of similar phenomena in the world's languages.

(15) Mongolian: verbal adjective in *-mal*
      (Dugarova and Jaxontova 1988:216)
      a. *card-mal* 'starched'   *card-ax* 'to starch'
          tovi-mol 'engraved'   *tovi-x* 'to engrave'
      b. *bee-mel* 'rotten'   *bee-x* 'to rot'
          xurs-mal 'rancid'   *xursi-x* 'get rancid'

(16) Modern Greek: participle in *-ménos*
      a. *gram-ménos* 'written'   *graf-o* 'I write'
          diavas-ménos 'read'   *diaváz-o* 'I read'
      b. *peθa-ménos* 'dead, having died' *peθén-o* 'I die'
          pije-ménos 'gone'   *pijén-o* 'I go'

(17) Kanuri (Saharan): -gátà (Lukas 1937:79)

  a. nam-gátà   'broken'   năm-ŋîn   'I break'
      lé-gátà   'touched'   lê-ŋìn   'I touch'
  b. nap-kátà   'seated'   năm-ŋîn   'I sit down'
      bo-gátà   'lying'   bô-ŋîn   'I lie down'

(18) Margi (Chadic): participle formed by complete or partial
      reduplication (Hoffmann 1963:§253-54)

  a. hwàhwà   'boiled'   hwà   'boil'
      mbùmbù   'sewn'   mbù   'sew'
  b. sásá   'lost, gone astray'   sá   'get lost, go astray'
      fĭfĭ   'swollen'   fĭ   'swell'

(19) Hungarian: past participle in -(V)tt

  a. egesít-ett 'united'   egesít   'unite'
      ismer-t   'known'   ismer   'know'
  b. tapasztal-t 'experienced'   tapasztal 'experience'
      ér-ett   'ripe'   ér   'reach'

(20) Turkish: verbal adjective in -ik/-ık/-uk/-ük

  a. kır-ık   'broken'   kır-mak   'break (tr.)'
      aç-ık   'open'   aç-mak   'open'
  b. sol-uk   'wilted'   sol-mak   'wilt'
      değiş-ik   'changed'   değiş-mek 'change (intr.)'

(21) Arabic: passive participle $maC_1C_2uuC_3$
      (Brockelmann 1908:§203)

  a. maktuub   'written'   kataba   'wrote'
      maqtuul   'killed'   qatala   'killed'
  b. matluuf   'ruined'   talifa   'be annihilated'
      makmuul   'complete(d)'   kamula   'be complete'

(22) Mam (Mayan): -na-participle (England 1983:126)

  a. yuup-na   'extinguished'   yuup-   'put out (fire)'
      toq-na   'broken'   tooq-   'break (tr.)'
  b. kyim-na   'dead'   kyim-   'die'
      noj-na   'full'   nooj-   'fill'

(23) Panare (Carib): -sa' 'nominalizer' (Payne 1990)[8]

  a. upa-sa'   'stagnant'   upa   'stagnate (water)'
      y-upu'ma-sa' 'fallen'   upu'ma   'fall'
  b. pu'ma-sa'   'killed'   pu'ma   'kill'
      y-o'ma-sa' 'changed'   o'ma   'change'

Why should languages have a grammatical morpheme that creates past passive participles from transitive verbs and past active participles from telic intransitive or unaccusative verbs? This can be understood by using the notion **resultative**. In their cross-linguistic study of resultative constructions, Nedjalkov and Jaxontov (1988:6) define this notion in the following way: "The term resultative is applied to those verb forms that express a state implying a previous event." I propose that passive/unaccusative participles should be understood as **resultative participles** in this sense. Both past passive participles (as in *the abused child*) and past unaccusative participles (as in *the wilted dandelion*) characterize their head by expressing a state that results from a previous event. The fact that they express a state has to do with the fact that they are adjectives. Adjectives are generally more time-stable than verbs (Givón 1979:320ff.; Pustet 1989) and therefore more likely to refer to (more time-stable) states than to (less time-stable) events.

But a thing cannot always be characterized by means of a state resulting from an event in which it participated. It becomes useful to characterize a thing by means of a resulting state only if the previous event affected or changed the thing somehow. *The child* in *the abused child* is affected by the transitive action whose patient it is, and *the dandelion* in *the wilted dandelion* is affected by the process whose single participant it is (cf. Comrie 1981, 1984). However, *the danced boy* ('the boy who danced') is unacceptable because the boy is not (normally) as a result of his dancing in a new state that would serve to characterize him.

In general, agents are not affected by the actions they participate in, so agentive intransitive verbs do not have resultative participles. However, agentivity is not the whole story. 'Bloom' and 'sleep' are well-known examples of unergative intransitives with a non-agentive participant. *The bloomed dandelion* and *the slept dog* are out because *bloom* and *sleep* are atelic verbs. In addition to having a non-agentive participant, intransitive verbs must be telic to show unaccusativity effects.[9] In German, *blühen* 'bloom', *schlafen* 'sleep' and similar verbs can be telicized by a locative particle, and then resultative participles can be formed from them:

(24) a. *der geblühte Löwenzahn   'the bloomed dandelion'
      b. der aufgeblühte Löwenzahn   'the bloomed ('blown')
                                        dandelion'

(25) a. *der geschlafene Hund   'the slept dog'
      b. der eingeschlafene Hund   'the dog that has fallen asleep'

German goes so far as to form resultative participles on agentive verbs if they are telic, like *tanzen* 'dance' in (26c-d), where it is used for directed motion rather than manner of motion (cf. Abraham 1985).

(26) a. *Der Junge hat eine Minute lang getanzt.*
          'The boy danced for one minute.'
      b. **der eine Minute lang getanzte Junge*
          'the boy who danced for one minute'
      c. *Der Junge ist in einer Minute über den Hof getanzt.*
          'The boy danced across the courtyard in one minute.'
      d. *OK: der in einer Minute über den Hof getanzte Junge*
          'the boy who danced across the courtyard in one minute'

The condition of telicity follows from the function of characterizing an entity by a resulting state because atelic events are not construed as resulting in any state.

Sometimes a transitive action may be such that it affects the agent, and therefore the agent can be characterized by the resulting state, so that resultative participles with active orientation can be formed. This is the case, for instance, in Hindi-Urdu (cf. Subbarao 1984:167-189, from which the following examples are taken).

The resultative participle in Hindi-Urdu is formed from the past form of the verb with the "auxiliary participle" *hu-aa*, e.g. *khariid-aa hu-aa* 'bought' (from *khariid-naa* 'to buy'). Example (27) shows that Hindi-Urdu is like German or English in that the resultative participle is possible with unaccusative (cf. 27a) verbs, but not with unergative verbs (cf. 27b).

(27) a. *kal   k-ii   aay-ii   hu-ii*
          yesterday   of-FEM.SG   come-PAST.FEM.SG   PARTCP-FEM.SG
          ciṭṭhii   kahāā
          letter(FEM.SG)   where is
          'Where is the letter that came yesterday?' (p. 178)
      b. **dauṛ-aa   hu-aa   laṛkaa*
          run-PAST.MASC.SG   PARTCP-MASC.SG   boy(MASC.SG)
          '*the run boy = the boy who ran' (p. 169)

Again, as in German, the resultative participle becomes acceptable when the context makes it clear that the situation is telic:

(27) c. *das miil dauṛ-aa hu-aa laṛkaa*
          ten mile
          'the boy who ran ten miles' (p. 170)

Now the resultative participles of certain transitive verbs can have active orientation, e.g. *khaa-naa* 'to eat':

(28) *das laḍḍuu   khaay-aa   hu-aa   laṛkaa*
      ten laddu   eat-PAST.MASC.SG   PARTCP-MASC.SG   boy(MASC.SG)
      'a boy who ate ten laddus (sweet meats)' (p. 170)

Other verbs that allow transitive active resultative participles are *dekh-naa* 'see' *siikh-naa* 'learn', *pahan-naa* 'wear', *lagaa-naa* 'put on', *pii-naa* 'drink (i.e. become drunk)'. These exceptions find a natural semantic explanation: What 'drink', 'eat', 'learn', 'see', and 'put on', 'wear' have in common is that the agent is saliently affected by the action (cf. already Brugmann 1895; Wackernagel 1920:288 on Latin exceptionally active past participles like *cenatus* 'having eaten', *potus* 'having drunk'). With experience verbs like 'see' and 'learn', only the experiencer is affected, and with ingestive verbs and verbs of wearing both the agent and the patient are affected, and not surprisingly in some of these verbs the resultative participle can have either active or passive orientation.[10]

Thus, as with the telicity condition above, a rather strange distributional behavior can be understood on the basis of the affectedness constraint that follows from the stative meaning of resultatives. The orientation of resultative participles is ultimately determined by semantics, rather than by some arbitrary formal notion like 'internal argument'.[11]

5. From Resultative Participle to Passive Participle

In the preceding sections we saw that resultative participles are semantically most natural: they are patient-oriented, in contrast to passive participles in the strict sense, which are direct-object oriented and therefore already syntacticized to a considerable extent. But such syntacticized passive participles certainly exist. For instance, the Russian past passive participle in *-(e)nn/-t* can only be formed from transitive verbs, e.g. *napisa-nn-yj* 'written', *ubi-t-yj* 'killed'. For intransitive verbs, the corresponding forms simply do not exist, e.g. for *ujti* 'go away' (stem *ujd-*) and *upast'* 'fall' (stem *upad-*), there is no **ujd-enn-yj* 'gone away' and **upad-enn-yj* 'fallen'.

But comparative evidence shows that the Slavic past passive participle in *-(e)n/-t* was a resultative participle in Proto-Indo-European (cf. the Old Indic cognate *-tá* in Vedic *ga-tá-* 'gone', *mr-tá-* 'dead, lit. died', Sanskrit

bhuk-ta- 'having eaten', *pi-ta-* 'having drunk', and also the Germanic past participle in *-n/-d*). In languages like Slavic and Latin (which also has pure passive participles), the unaccusative uses were subsequently lost, and the participle was reinterpreted as being direct-object oriented rather than patient-oriented. In some languages, for instance in Latin, such pure passive participles can even be derived from intransitive verbs. The result is then an "impersonal passive".

(29) *ventum*
      'one has come', lit. 'it has been come'

The development toward a pure passive participle can start but leave the unaccusative participles intact for a while. In German (and English), for instance, the Past Participle is not really a resultative participle any more because it can also be used with atelic transitive verbs, as in (30).

(30) a. *das vom Vater getragene Kind*
          'the child carried by her father'
      b. *der polizeilich gesuchte Dissident*
          'the dissident sought by the police'
      c. *die von allen geliebte Strassenbahn*
          'the streetcar loved by everyone'

For such cases the term "Past" Participle is not really appropriate because there is no reference to past time or temporal precedence. Thus the English and German Past Participles seem to be on their way to becoming pure passive participles, although they still have the unaccusative uses.

6. Non-Past Passive Participles

While passive participles are most typically resultative (i.e., "past"), there are also non-past passive participles, as we saw in (8-13) above. The most striking fact about non-past passive participles is that they rarely have a current present meaning. Such a current present meaning is not uncommon with active participles, but passive participles more commonly have modal (potential/necessitative) or future meaning. (Necessitative passive participles are also called **gerundives**, especially the Latin form in *-ndo-*, but also the Old Indic gerundive in *-tavyà-*, e.g. *kartavyà-* 'faciendus, to be done', and the German gerundive in *zu...-end*, e.g. *der zu bearbeitende Text* 'the text to be worked on'.)

Like past passive participles, modal passive participles are not always passive, but can sometimes be used with unaccusative intransitive verbs, too:

(31) Welsh verbal adjective in *-adwy*
      a. *dealladwy*   'understandable'
          cyraeddadwy   'attainable'
      b. *safadwy*   'stable steadfast'
          tyfadwy   'growing well ('growable')'

(32) English verbal adjective in *-able* (Horn 1980)
      a. *washable, solvable, drinkable, readable*, etc.
      b. *perishable, (un)shrinkable, variable, changeable*; **sneezable*,
          **danceable*, **barkable*, etc.

(33) German verbal adjective in *-bar*
      a. *waschbar*   'washable'
          lösbar   'solvable'
      b. *haltbar*   'unperishable'
          (un)verwelkbar '(un)wiltable'

(34) Hungarian gerundive in *-andó/-endő*
      a. *fizetendő*   'to be payed'
          megoldandó   'to be solved'
      b. *halandó*   'about to die, mortal'
          jövendő   'about to come'

(35) Persian gerundive in *-d/tæni*
      a. *kærdæni*   'to be done'
          xurdæni   'edible'
      b. *ræftæni*   '(obliged) to go'
          budæni   '(about) to be'

Whereas resultative participles characterize an entity by means of a state resulting from an event, modal participles characterize an entity by means of a potentiality for an event that is conceived of as inherent in the entity. While it is quite clear that resulting states can best characterize patients that have undergone a telic event, it is less clear to me why potentialities/eventualities are preferably conceived of as being inherent in the patient of a potential event.[12] But the facts seem to be clear: In the material that I am aware of, potential active participles or verbal adjectives are just as rare as past active participles (a possible example is the Latin future active participle).[13]

7. Explaining the Asymmetries

We can now summarize the explanation of the asymmetries in the distribution of different orientations of participles over different tenses that were observed above (Section 4). The prototypical distribution seems to be the following:

(36)   participles
                active   passive
    present   +   −
    past   −   +
    future/modal −   +

Since participles are adjectives, the situations described by them tend to be more time-stable than the situations described by finite verbs. So we do not expect to find progressive participles or hesternal past participles or immediate future participles. There are three main ways to describe a thing in terms of a sufficiently time-stable situation, for each of which there is a corresponding participle in (36) (and in many languages): habits, results and eventualities.

(A) Habitual situations are realis, non-past, non-future and dynamic (non-stative) but nevertheless so time-stable that it is worthwhile for languages to have verb-derived adjectives that characterize things in terms of them: **active participles**, e.g. English *traveling salesman, running water*, etc. Such habitual participles are generally subject/agent-oriented because habitual actions can be construed as properties of agents, not of patients like resulting states and eventualities. It is probably only secondarily that present participles are used for current events, like *flying planes, a crying baby* (except, of course, in stative verbs where they are used to express a current state, e.g. *standing, knowing*) because current events are not very time-stable.

(B) Results of perfective telic situations are states that are naturally quite time-stable, and languages make extensive use of such **resultative participles**. These are primarily oriented toward the patient of the event because the patient undergoes a change as a result of the event and can therefore be easily characterized in terms of the event. This is true for "themes" and for "true patients" of transitive events, and it is also true for themes/patients of inactive events (cf. section 4.). Such resultative participles may be extended to atelic transitive verbs and unaccusative uses can be eliminated so that they become pure **passive participles** with past time reference.

(C) Eventualities are irrealis non-stative events which are nevertheless time-stable enough to characterize a thing because they are unrealized and only potentially realized for quite some time.[14] Like results, eventualities are attributed to the participant that undergoes the event, i.e. the theme/patient. However, affectedness does not seem to be the basis for this because there are no systematic exceptions for affected agents (as far as I know), i.e. *edible* never means 'having/being able to eat', *learnable* never means 'having/being able to learn'. Potential passive participles are also apparently never used in periphrastic passives.

The explanation that I have offered here tentatively takes as crucial the fact that participles are adjectives and therefore show different types of meanings than verbs. It is thus a semantic explanation based on semantic regularities of word classes. In the following section I discuss a possible alternative explanation of the asymmetric distribution of participles based on discourse pragmatics.

8. An Alternative Explanation

A possible alternative approach to explaining the asymmetric distribution of participles would be based on the discourse functions of participles. If one assumes the general principle that languages grammaticize most consistently what speakers talk about most frequently (Du Bois 1987), then asymmetric structures could perhaps be explained with reference to asymmetries in discourse functions. Such a hypothesis cannot be directly tested on a language that has asymmetric structures (like Latin or German) because the absence or rarity of certain discourse configurations (e.g. the absence of past active participle constructions) would obviously be due to the absence of the corresponding structures. But a language like Lezgian, which has participles of all tense-aspects and without any restrictions in orientation, could be expected to show interesting results.

Since I lack spoken-language data from Lezgian, I surveyed the first 15 pages of Jaraliev (1989), a children's adventure story written in straightforward narrative prose with many dialogues. The passage surveyed contains 100 participles from non-defective verbs, i.e. verbs whose participles distinguish different tense-aspects (this excludes only some copula verbs). Table

Table 1. Distribution of tense-aspect and contextual orientation of Lezgian participles in discourse

	agent-oriented	patient-oriented	other-oriented
present tense-aspects	13 (81%)	14 (24%)	12 (48%)
past tense-aspects	3 (19%)	45 (76%)	13 (52%)
total	16 (100%)	59 (100%)	25 (100%)

1 shows the result, lumping together various past and present tense-aspects for the sake of clarity. The patient-oriented participles include both patients of transitive verbs (as in *the stolen drum*) and patients of unaccusative verbs (as in *the died horse*).

The results show a striking similarity to (36) above. This suggests that a discourse explanation may be on the right track: If agent-oriented present participles and patient-oriented past participles are most frequent in discourse, this explains why these types of participles are preferentially grammaticized in languages.

An explanation of the discourse data in Table 1 seems possible along the following lines. As has been shown in recent work by Barbara Fox and Sandra Thompson (Fox and Thompson 1990), object relative clauses in English conversation tend to be used for the function of **grounding** an NP, that is making its referent relevant for the hearer by relating it to a discourse entity already established in the prior discourse. Since participles are the standard relative clause forming strategy in Lezgian, one could argue that patient-oriented participles (the closest analog to English object-relatives) are much more often past than present because past participles are better suited for the purpose of relating an NP to a discourse entity established in the prior discourse; after all, the prior discourse is often in the past, especially in narratives.

However, it is not clear how such an explanation could be reconciled with (i) the fact that the distribution in (36) is also found in derivational verbal adjectives that are not at all frequent in discourse; and (ii) the existing evidence for the diachronic origin of participles (cf. Section 9), which suggests that participles originate in derivational verbal adjectives rather than in inflectional relative participles of the Lezgian type. Thus, rather than grammaticization from discourse, we seem to be dealing with grammaticization from the lexicon. The semantic explanation offered in Section

7 is more in line with this. But perhaps we can hope that the two approaches sketched here will ultimately turn out not to be incompatible.

9.   Where Do Passive Participles Come From?

It is well-known that many grammatical forms arise by way of the grammaticization of independent lexical items. Indeed, it has been claimed that "the process of attrition from free lexical item to bound morpheme...is apparently the only major candidate process which can explain the introduction of affixes into a language" (Hall 1988:329). One could therefore expect to find cases where a free lexical item of some sort is grammaticized into a participle-forming affix. However, in the languages whose history is known and which have been well studied from a historical-comparative point of view, this type of development is rarely attested. Rather, participles are formed with productive adjectival affixes that come to be used so regularly that the deverbal adjective can be called a participle. The processs by which they most commonly arise is therefore not grammaticization, but analogy.

There are, to be sure, some examples of the grammaticization of a second compound member as an adjectival suffix that forms verbal adjectives, e.g. German *-lich*. This is from Old High German *lih* 'body' and was originally used in exocentric compounds like *freund-lich* 'having the form of a friend = friend-like = friendly'. When used with verbal nouns (e.g. *lieb-lich* 'lovable' from *Liebe* 'love', *nütz-lich* 'useful' from *Nutzen* 'use'), *-lich* could also be related to the underlying verbs by speakers, and other forms were then derived directly from verbs on this analogy, e.g. *veränderlich* 'changeable', *verderblich* 'perishable'. These are potential passive adjectives much like the English forms in *-able*.[15] This development from second compound member to derivational suffix is clearly an instance of grammaticization (cf. Haspelmath 1992), but it is only the rise of the adjectival suffix *-lich* that can be explained in this way. The extension from nominal bases to verbal bases is due to analogy.

Another attested source for participial morphology is the cumulation of affixes. For instance, the Welsh resultative verbal adjective suffix *-edig* (e.g. *dealledig* 'understood', *syrthiedig* 'fallen') goes back to an extension of the Indo-European *-to*-suffix:*-(a)-t-ī-ko-* (Jones 1913:397). Similarly, the Modern Persian suffix *-d/te* goes back to *-ta-ka-*, an extension of the same

-*to*-participle with -*ko*-. And the Yiddish active participle suffix -*endik* is made up of Proto-Germanic *-*and*- (active participle) and *-*ig*- (< *-*ī-ko*-). Participial affixes can also "grow" by reanalysis of part of the root as belonging to the participle, e.g. French -*u* (*vu* 'seen', *venu* 'come', etc.), which arose by reanalysis of Latin forms like *solu-tus* (from *solv-ere*), *secu-tus* (from *sequ-i*) as *sol-utus*, *sec-utus*. But these cases merely illustrate the reinforcement of an older participial suffix and do not tell us anything about where participles come from in the first place.

A general problem in determining the diachronic origin of participles is that they tend to have a very long life-span. For instance, the successors of the Proto-Indo-European resultative participle suffix *-*t*-/-*n*- and the present participle suffix *-*nt*- are well and alive in many modern Germanic, Slavic, Romance and Indo-Iranian languages.

In those cases where we do have some evidence for the diachronic origin of participles and verbal adjectives, they all seem to originate in relational adjectives from verbal nouns which are then interpreted as having passive orientation. Risch (1984:169-178) enumerates a number of them.

(37) a. *-*towyo*-, as in the Old indic gerundive (e.g. *kar-tavyà*- 'to be done') and the Welsh potential verbal adjective -*dwy* (e.g. *dealladwy* 'understandable', cf. (36) above).
          From: verbal noun in *-*tu/tow/tew* (cf. Old Indic infinitives -*tum*, -*tave*) and adjectival suffix -*yo*.

      b. *-*t(e)w-o*-, as in the Ancient Greek verbal adjective in -*téos*, Old Indic gerundive in -*tva*.
          From: verbal noun in *-*tu/tow/tew* (see (a)) and thematic suffix *-*o*-.

      c. -*anīya*-, another Old Indic gerundive.
          From: Old Indic infinitive -*ana*- and adjectival suffix -*īya*-

(38) a. -*eli*, the Armenian potential passive adjective (e.g. *pasteli* 'adorable', *sireli* 'lovable', *nduneli* 'acceptable').
          From: infinitive in -*el* and adjective suffix -*i*.

      b. -*aastaj* (with vowel harmony variants), Mongolian resultative participle (e.g. *nöx-ööstej* 'darned')
          From: verbal-noun-forming suffix -*aas* and comitative/possessive suffix -*taj* (Dugarova and Jaxontova 1988:211-13)

      c. -*d/tæni*, the Persian potential adjective (e.g. *kærdæni* 'faciendus', cf. (40) above).

From: infinitive -*d/tæn* and adjectival suffix -*i* (e.g. *ab-i* 'watery', from *ab* 'water').

      d. -*ono*, the Udmurt (Finno-Ugric) gerundive (e.g. *bydestono už* 'work to be finished', *kiźono seźy* 'the oats that have to be sowed').
          From: Udmurt deverbal noun -*on* plus relational adjective suffix -*o* (Serebrennikov 1963:298).

      e. *zu*...-*end*, the German gerundive (e.g. *die zu beschreibende Konstruktion* 'the construction to be described').
          From: infinitive prefix *zu* and present active (!) participle suffix -*end*

In many diachronic paths that give rise to grammatical categories, the source meaning determines the meaning of the resulting grammatical item. However, none of the sources of participial markers mentioned in this section determine the passive or active orientation of the verbal adjectives and participles in an obvious way. So how did it arise? I have no satisfactory answer to this question and I can only offer the following (somewhat speculative) suggestions.

As is well known, the meaning of denominal relational adjectives is extremely general ('having a relation to (the base)') and is enriched only contextually by implicature. Thus, *nervous breakdown* means 'breakdown *of* the nerves', *nervous system* means 'system *consisting of* nerves', etc. Such relational adjectives often develop secondary qualitative meanings (e.g. *nervous* 'restless'). Analogously, relational adjectives derived from verbal nouns originally mean nothing more than 'having a relation to the event (denoted by the verb stem)', e.g. Armenian *sir-el-i* 'lovable' originally meant 'having a relation to loving' (i.e., it was unoriented). When such verbal relational adjectives develop secondary "qualitative" meanings, they become inherently oriented, and the kind of orientation is determined by aspect (resultative, potential, or habitual) together with the semantic preferences described in Section 7, i.e. resultative and potential verbal adjectives receive passive (and unaccusative) orientation, while habitual verbal adjectives receive active orientation. There is some evidence from Finno-Ugric and Indo-European that suggests that originally unoriented verbal adjectives or participles later become fixed in their orientation.

The role played by potential modality in determining the orientation of the verbal adjective/participle is demonstrated by the Hungarian gerundive/future passive participle in -*and-ó/-end-ő* (cf. above (11)). This is simply the

present active (!) participle ending *-ó/-ő* combined with the future tense suffix *-and/-end*. It seems that the *-ó/-ő*-participle was originally only contextually oriented and that it became fixed as agent-oriented in the present tense and as patient-oriented in the future/irrealis.[16] The *-ó/-ő*-participle has passive orientation also when combined with the potential suffix *-hat/-het*: *lát-hat-ó* 'visible' (*lát-hat-* 'be able to see'), *hi-het-ő* 'believable'. There are still some cases in Hungarian where the *-ó/-ő*-suffix shows non-active orientation even without an additional modality marker, e.g. in compounds like *levelező-lap* 'postcard', lit. 'card (on) which one writes' (not: 'card which writes'), or set expressions like *elad-ó leány* 'girl of marriageable age', lit. 'girl which one gives away' (not: 'girl which gives away') (cf. Hall 1938:67,94f.).

Apparent lack of orientation is also found in some residual cases in Indo-European languages. Thim-Mabrey (1990) discusses examples of present ("active") participles from older German like *die melkende Kuh* 'the cow that is milked, milch cow', *schwindelnde Höhe* 'height at which one becomes dizzy'. Such constructions are quite limited already in Middle High German and they are archaic or completely idiomatic in Modern German. An example from English is *falling sickness* 'illness in which the patient falls', not: 'illness which falls'. If the *-nt-* participle was completely free of inherent orientation in Proto-Indo-European, this might help to explain the fact that it is normally patient-oriented in Hittite, e.g. *kuna-nt-* 'killed' (but *pa-nt-* 'gone', *ada-nt-* 'having eaten', cf. Schmidt 1964:6).

To summarize this section: The existing evidence concerning the origin of participles (and verbal adjectives) indicates that they do not typically arise via the grammaticization of lexical items as participle markers; rather, adjectives derived from verbal nouns by means of already existing adjective-deriving suffixes get used as participles. The orientation of such participles is determined by its aspect: Resultative/perfective and future/irrealis forms are preferably patient-oriented, present/habitual forms are agent-oriented. These observations are put into a larger perspective in the next section.

10. Participles on the Noun-Verb Cline

It has been observed by a number of linguists (e.g. Ross 1972) that the distinction between nouns, verbs, and adjectives is less than clear-cut; rather, a more or less continual cline as in (39) exists along which the traditional word classes constitute focal points.

(39)   <——————————————————————>
       verb   participle   adjective   noun
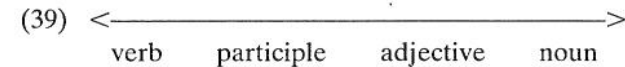
A special case of this scale is the continuum of participant nominalizations that is represented in Table 2.[17] It is manifested in at least the five parameters (A) through (E).

Table 2. Scale of participant nominalizations, and some of their properties

(finite verb)	relative participle	oriented participle	verbal adjective	participant noun
(A) more verbal <——————————————————————> more nominal				
(B) more inflectional <——————————————————————> more derivational				
(C) more relational <——————————————————————> more absolute				
(D) less inherent orientation <——————————————> more inherent orientation				
(E) less time-stable <——————————————————————> more time-stable				

A few comments on each parameter:

(A) Ross (1972) argues at length that English participles and adjectives can be thought of as occupying intermediate positions along a scale that runs from extremely "verby" on the left to extremely "nouny" on the right. A similar point, with evidence from a wide variety of languages, is made in Hopper and Thompson (1984).

(B) Participant nouns like agent nouns (e.g. *writ-er*), patient nouns (e.g. *employ-ee*), place nouns (e.g. Greek *théa-tron* 'theater', lit. 'looking-place'), etc., are among the best-known examples of derivational morphology, showing frequent formal and semantic idiosyncrasies. Verbal adjectives tend to be more regular and productive, that is more inflection-like, and participles are by definition members of the inflectional paradigm. However, oriented participles are often not very well integrated into the verbal paradigm and show some properties that set them off from finite

verb forms, whereas relative participles are completely integrated into the paradigm (cf. the Lezgian relative participles in (4)).

(C) Participant nouns and verbal adjectives do not necessarily inherit the verb's argument structure and almost never inherit non-oblique arguments directly (*the writer the book). Oriented participles are much like verbs in terms of their relationality, though sometimes the direct object is not in the accusative but in the genitive (e.g. in Classical Arabic). Relative participles show no restrictions on their combinability with verbal arguments. Relationality/absoluteness is of course a property that distinguishes verbs from nouns quite generally, so (C) is just a special case of (A).

(D) Participant nouns are always inherently oriented, whereas verbal adjectives sometimes show vacillations, e.g. German *un-vergesslich* (patient-oriented) 'unforgettable' vs. *vergesslich* (agent-oriented) 'forgetful', and relative participles have the least inherent orientation, as little inherent orientation as a finite relative clause marked by a relative pronoun.

(E) Participant nouns show an even greater degree of time-stability than participles: a *writer* writes all the time while *an actor writing his memoirs* does so only temporarily. Again, relative participles show the same lack of time stability as finite verbs. According to Givón (1979:320ff.), time-stability is the semantic basis of the noun-verb distinction in human languages.

The categories on Table 2 can gradually evolve into a category adjacent on the scale. Participant nouns can change into verbal adjectives: for instance, the Latin agent noun suffix *-tor* has become an active verbal adjective in some Romance languages. Verbal adjectives can probably become regular inflectional participles (cf. the preceding section), and Lehmann (1984:377) describes the rise of relative participles from oriented participles in the history of Turkish. Changes in the opposite direction are apparently also possible: I suggested in the preceding section that the orientation in Hungarian and Indo-European participles became fixed only secondarily. The loss of the paradigmatic inflectional present participle in Romance is an example of the change from participle to verbal adjective, and the English patient noun suffix *-ee*, which ultimately derives from the Latin passive participle, represents the final step, a development into a participant noun.

Since diachronic developments in both directions along the scale in Table 2 are possible, it cannot represent a grammaticization scale (grammaticization is a unidirectional process). The question remains to be answered what motivates such changes.

11. Concluding Remarks

In this paper I have examined a number of properties of passive participles cross-linguistically. The most striking finding is the asymmetry in the distribution of active and passive participles over different aspects/tenses, and a tentative explanation of this distribution was given.

Passive constructions involving passive participles do not seem to be particularly common in the world's languages. In Haspelmath (1990) findings from a worldwide random sample of 80 languages are reported, where out of 39 passives (from 31 languages) only 3 are formed periphrastically with a passive participle, all of them from Indo-European languages. Nevertheless, passive participles are involved in the passive constructions of most major European languages and will continue to play an important role in the linguistic discussion.

Participles of the type discussed here are also not very widespread (though more common than periphrastic passives), and it is even conceivable that they are an areal phenomenon of Europe and adjacent areas, or a feature characteristic of languages of the European type (SVO, well-developed class of adjectives, relative clauses with relative pronouns, etc.). Much more research on participles and similar phenomena in the languages of the world is needed for a deeper understanding of their nature.

NOTES

*I am grateful to the editors for comments on an earlier version of this paper.

1.   Cf. Crystal's (1985) definition of *participle*: 'a word derived from a verb and used as an adjective'.

2.   See Dixon (1982) and Pustet (1989) for typological studies of adjectives.

3.   Other common terms are *adverbial participle, gerund, conjunctive participle, absolutive*.

4.   Cf. Fox (1983) on the participle in Ancient Greek (where the adverbial function of the participle is unusually common), and König & van der Auwera (1990) for an overview of adverbial participles or converbs in European languages.

5.   In a governing relation, on the other hand, the head is relational, has slots for its arguments, and has a separate referent. For instance, in *The people destroyed the rain forest* or in *Tereza's husband*, the head (the V *destroyed* and the N *husband*, respectively) takes arguments that occupy its slots but do not refer to it, while in *beautiful music* or in *speculating wildly*, the modifier (the A *beautiful* and the Adv *wildly*, respectively) refers to its head, which occupies its slot. For more discussion, see Lehmann (1985:77ff).

6. The notion of orientation in this sense corresponds rather closely to the notion of 'external argument' in generative syntax (see Williams 1981), especially if we also use it for finite verbs and say that finite verbs are oriented toward their subject (so that, e.g., active verbs are agent-oriented and passive verbs are patient-oriented). See also Lemaréchal (1989) for a discussion of the notion of orientation in a neo-Tesnièrean framework.

7. UNACCUSATIVE is the name given to a subclass of intransitive verbs with certain syntactic properties (impossibility of impersonal passives, 'be'-type auxiliaries in the perfect, and others; see Perlmutter 1978). The complementary class of intransitive verbs is called UNERGATIVE. The unaccusative/unergative distinction is closely related to the telic/atelic distinction and to the inactive/agentive distinction, but it is based on syntactic criteria alone.

8. I am grateful to Doris Payne for drawing this work to my attention.

9. Cf. Nedjalkov & Jaxontov (1988:5), who use the term 'terminative' in the sense of 'telic': 'It is typically from terminative verbs that resultatives are derived in the majority of the languages under analysis.'

10. Such affected-agent resultative constructions are recognized as a separate class in Nedjalkov & Jaxontov (1988:9), who term them 'possessive resultatives' and observe (p.23): 'Possessive resultative constructions are typically derived from transitive constructions which describe situations changing (mostly or exclusively) the state of the undergoing subject rather than the object of the action.' They identify eight main groups of verbs that form 'possessive resultatives' cross-linguistically, including verbs of obtaining ('take', 'receive', 'lose'), wearing ('put on', 'wear'), ingestion ('eat', 'drink'), and 'mental ingestion' ('see', 'learn', 'study').

11. A very similar point is made in Comrie (1981, 1984), who cites data from Armenian and Nivkh.

12. Indeed, Comrie (1981:71) makes exactly the opposite claim: 'Although *John is going to kill Bill* might serve to indicate Bill's state as a potential victim, it is much more likely to be used to inform of John's state of mind. More generally, potentialities are more likely to be attributed to A than to P...'

13. However, this seems to have been modeled on the Greek future active participle (Wackernagel 1920:287), and the Greek participial system is also otherwise exceptional.

14. One could also think of an eventuality as a state; after all, verbs like 'may' usually pass all stativity tests (*You are maying come now.*, etc.).

15. Completely analogous are the histories of the German suffixes *-bar* (originally 'bearing'), as in *veränderbar* 'changeable', *verzeihbar* 'forgivable', and *-haft* (originally 'holding, having'), as in *lachhaft* 'ridiculous', *schauderhaft* 'horrible'.

16. Perhaps the fixation of the orientation took place under the influence of the surrounding European languages. The further east we go in the Uralic family the less inherent orientation we find in participles.

17. A related scale, dealing with nominalization phenomena in general, can be found in Lehmann (1988).

REFERENCES

Abraham, Werner. 1985. "Transitivitätskorrelate." In Wilfried Kürschner and Rüdiger Vogt (eds), *Grammatik, Semantik, Textlinguistik*, Bd. 1, 209-219. Tübingen: Max Niemeyer.

Bresnan, Joan. 1982. "The passive in lexical theory." In Joan Bresnan (ed.), *The mental representation of grammatical relations*, 3-86. Cambridge, Mass.: MIT Press.

Brockelmann, Carl. 1908. *Grundriss der vergleichenden Grammatik der semitischen Sprachen. I: Laut- und Formenlehre*. Reprint. Hildesheim: Georg Olms, 1986.

Brugmann, Karl. 1895. "Die mit dem Suffix *-to-* gebildeten Partizipia im Verbalsystem des Lateinischen und des Umbrisch-Oskischen." *Indogermanische Forschungen* 5:89-152.

Comrie, Bernard. 1981. "Aspect and voice: some reflections on perfect and passive." In Philip J. Tedeschi and Annie Zaenen (eds), *Tense and Aspect*, 65-78. [Syntax & Semantics, 14] New York etc.: Academic Press.

Comrie, Bernard. 1984. "Form and function in explaining language universals." In Brian Butterworth, Bernard Comrie and Östen Dahl (eds), *Explanations for language universals*, 87-103. Berlin etc.: Mouton de Gruyter. (=Linguistics 21,1)

Crystal, David. 1985. *A dictionary of linguistics and phonetics*. 2nd ed. London: Basil Blackwell.

Dixon, Robert M. W. 1982. *Where have all the adjectives gone?* Berlin: Mouton de Gruyter.

Du Bois, John W. 1987. "The discourse basis of ergativity." *Language* 63,4:805-855.

Dugarova, Galina S. and Natalia S. Jaxontova 1988. "Resultative and perfect in Mongolian." In Nedjalkov (ed.), 209-220.

England, Nora C. 1983. *A grammar of Mam, a Mayan language*. Austin: University of Texas Press.

Fox, Barbara A. 1983. "The discourse function of the participle in Ancient Greek." In Flora Klein-Andreu (ed.), *Discourse perspectives on syntax*, 23-41. New York etc.: Academic Press.

Fox, Barbara A. and Sandra A. Thompson. 1990. "A discourse explanation of the grammar of relative clauses in English conversation." *Language* 66,2: 297-316.

Givón, Talmy. 1979. *On understanding grammar*. New York: Academic Press.

Hall, Christopher. 1988. "Integrating diachronic and processing principles in explaining the suffixing preference." In John A. Hawkins (ed.), *Explaining language universals*, 321-349. Oxford: Basil Blackwell.

Hall, Robert A. Jr. 1938. *An analytical grammar of the Hungarian language*. [Language Monograph, 18.] Baltimore: Linguistic Society of America.

Haspelmath, Martin. 1990. "The grammaticization of passive morphology." *Studies in Language* 14,1: 25-72.

Haspelmath, Martin. 1992. "Grammaticization theory and heads in morphology." In Mark Aronoff (ed.) *Morphology now*, 69-82. Albany: State University of New York Press.

Hoffmann, Carl. 1963. *A grammar of the Margi language*. Oxford: Oxford University Press.

Hopper, Paul J., and Sandra A. Thompson. 1984. "The discourse basis for lexical categories in universal grammar." *Language* 60,4: 703-752.

Horn, Laurence R. 1980. "Affixation and the unaccusative hypothesis." *CLS* 7: 134-146.

Jaraliev, Jaqub. 1989. *Alamatdin Uruž*. Maxackala: Dagučpedgiz.

Jespersen, Otto. 1940. *A modern English grammar. Part V. Syntax*. London: Allen & Unwin; Copenhagen: Munksgaard.

Jones, J. Morris. 1913. *A Welsh grammar. Historical and comparative*. Oxford: Clarendon Press.

König, Ekkehard and Johan van der Auwera. 1990. "Adverbial participles, gerunds and absolute constructions in the languages of Europe." In Johannes Bechert, Giuliano Bernini, and Claude Buridant (eds), *Toward a typology of European languages*, 337-355. Berlin/New York: Mouton de Gruyter.

Lehmann, Christian. 1984. *Der Relativsatz*. Tübingen: Gunter Narr.

Lehmann, Christian. 1985. "On grammatical relationality." *Folia Linguistica* 19: 67-109.

Lehmann, Christian. 1988. "Toward a typology of clause linkage." In John Haiman and Sandra A. Thompson (eds), *Clause combining in grammar and discourse*, 181-225. Amsterdam: Benjamins..

Lemaréchal, Alain. 1989. *Les parties du discours: Sémantique et syntaxe*. Paris: Presses universitaires de France.

Levin, Beth and Malka Rappaport. 1986. "The formation of adjectival passives." *Linguistic Inquiry* 17: 623-661.

Lukas, Johannes. 1937. *A Study of the Kanuri language. Grammar and vocabulary*. London: International Institute of African Languages and Cultures/Oxford University Press.

Nedjalkov, Vladimir P. Forthcoming. "Some typological parameters of converbs." To appear in: Haspelmath, Martin and Ekkehard König (eds), *Converbs (adverbial participles, gerunds) in cross-linguistic perspective*.

Nedjalkov, Vladimir P. (ed.) 1988. *Typology of resultative constructions*. [Typological Studies in Language, 12.] Amsterdam: John Benjamins.

Nedjalkov, Vladimir P. and Sergej Je. Jaxontovv. 1988. "The typology of resultative constructions." In Nedjalkov (ed.) 3-62.

Payne, Thomas. 1990. "Transitivity and ergativity in Panare." *Amazonian linguistics: Studies in Lowland South American languages*, ed. by Doris L. Payne, 429-453. Austin: University of Texas Press.

Perlmutter, David. 1978. "Impersonal passives and the unaccusative hypothesis." *Proceedings of the Berkeley Linguistic Society* 4:157-189.

Pustet, Regina. 1989. *Die Morphosyntax des Adjektivs im Sprachvergleich*. Frankfurt/Main: Peter Lang.

Risch, Ernst. 1984. *Gerundivum und Gerundium*. Berlin: de Gruyter.

Ross, John Robert. 1972. "The category squish: Endstation Hauptwort." *CLS* 8:316-328.

Schmidt, Karl Horst. 1964. "Präteritales Partizip und Diathese." *Indogermanische Forschungen* 69, 1-9.

Serebrennikov, Boris A. 1963. *Istoričeskaja morfologija permskix jazykov*. Moscow: Izdatel'stvo AN SSSR.

Subbarao, Karumuri V. 1984. *Complementation in Hindi syntax*. [Academic Series in Linguistics, 1.] Delhi: Academic Publications.

Thim-Mabrey, Christiane. 1990. "Attributives Partizip Präsens im Mittelhochdeutschen." *Beiträge zur Geschichte der deutschen Sprache und Literatur* 112,3:371-403.

Wackernagel, Jacob. 1920. *Vorlesungen über Syntax. Band 1*. Basel: Emil Birkhäuser & Cie.

Weiss, Daniel. 1977. *Syntax und Semantik polnischer Partizipialkonstruktionen*. Bern etc.: Peter Lang.

Williams, Edwin. 1981. "Argument structure and morphology." *The Linguistic Review* 1:81-114.