

The (a)symmetry of inflectional person marking

Michael Cysouw – ZAS Berlin

cysouw@zas.gwz-berlin.de

ALT IV – Santa Barbara

20 July 2001

1 Introduction

1.1 More suffixes than prefixes

‘Of the three types of affixing – the use of prefixes, suffixes, and infixes – suffixing is much the commonest.’ (Sapir, 1921:67)

There is a small literature on possible explanations of this phenomenon (Greenberg, 1957:86-94; Cutler *et al.*, 1985; Hall, 1988; Hawkins & Cutler, 1988; Bybee *et al.*, 1990).

1.2 Person marking: counting paradigms

In a typological sample, Bybee *et al.* (1990:4) found 426 grammatical prefixes (26%) against 1236 grammatical suffixes (74%). As for person markers, the predominance for suffixation is less clear. Reanalysing the data from Bybee *et al.* (1990:9, 13, 15), there are 240 prefixed person markers (40%) against 354 suffixed person markers (60%). There is still a preference for suffixation, although less strong than the overall preference. Moreover, they have counted each person marking morpheme individually. However, person markers are normally bound into a paradigm consisting of strictly prefixes or suffixes.

In previous work (Cysouw, 2001), I had collected a large set of person paradigms. In making this collection, it did not matter whether they were prefixal or suffixal paradigms. Reanalysing these data, I had 148 inflectional person paradigms, of which 72 were prefixal (49%) and 76 suffixal (51%). The preference for suffixation seemed to have disappeared.

Taking a closer look, I found that the prefixal paradigms were often smaller. In this way, the different results could be reconciled. My impression was that there is a specific way in which prefixal paradigms are smaller.

1.3 Basic claim

If the combination person/number is marked analytic, then person is marked by prefixes

	<i>person prefixes</i>	<i>person suffixes</i>
<i>person/number analytic</i>	yes	no!
<i>person/number synthetic</i>	yes	yes

On first notice, such a generalisation might seem strange as there are many large prefixal paradigms (Iroquoian, Gunwinguan, Bantu). However, note that the the implicational statement does allow for such cases. The only combination that is not allowed are *analytic person/number suffixes*.

‘Such a system seems unusual among the languages of the world, in which person and number are commonly expressed together in a single morpheme.’ (Foley, 1986:132)

‘It is certainly common to find irregular personal pronouns, however regular or irregular the morphology of nouns. We should not assume, however, that personal pronouns are always suppletive or otherwise irregular. They can be regular. [...] Pronominal *prefixes* may show similar regularity.’ (Corbett, 2000:76-77, italics added, MC)

This is an investigation of single participant person paradigms (almost all intransitive person marking) with analytic person/number marking. I use a special kind of cross-linguistic/typological method: exhaustive sampling. I collect all such cases that I can find, and try to generalise over this sample.

2 Various ways to mark person/number analytically

2.1 Number prefixes

(1) *Caddo* (Caddoan, Chafe, 1990:66)

ci-with-yibahw-nah

1-DUAL-see-PERF

‘We (EXCL. DUAL) have seen it’

2.2 Number suffixes

(2) *Ojibwa* (Algonquian, Schwartz & Dunnigan, 1986:305)

a. *int-isā*

1-go

‘I go’

b. *int-isā-min*

1-go-PLUR

‘We (EXCL.) go’

2.3 Do nothing

(3) *Ngiti* (Central Sudanic, Kutsch Lojenga, 1994:411)

àpé ny-òngò ùbhi ngbona

no longer 2-hab walk sideways

‘You should no longer walk sideways’

2.4 Other possibilities

Different verb roots, tone changes of root, use independent pronouns, and of course combinations of all these possibilities

3 Maricopa type

	<i>Singular</i>	<i>Plural</i>	
1			<i>Inclusive</i>
2	ʔ-...		<i>Exclusive</i>
3	m-...		
	ø-...		

3.1 Prefixes:

- **Siouan:** *Hidatsa* (Robinett, 1955:177; Matthews, 1965:55, 71), *Crow* (Lowie, 1941:31-36)
- **Yuman:** *Maricopa* (Gordon, 1986:15-21), *Mojave* (Munro, 1976:10-14), *Diegueño* (Langdon, 1970:139-140; Miller, 2001:135-144), *Yavapai* (Kendall, 1976:5-8), *Yuma* (Halpern, 1946:281-282)
- **Sahaptin:** *Nez Perce* (Rude, 1985:30-39) [Note: only in progressive/habitual, the first and second are both zero]
- *Kutenai* (Garvin, 1948:171-187)
- *Washo* (Jacobsen, 1964)
- *Acoma Keresan* (Maring, 1967:77-79, 83-85)
- **Otopamean:** *Pame* (Manrique, 1967:343-344), *Chichimeco Jonaz* (Lastra de Suárez, 1984:29-30), *Ixtenco Otomí* (Lastra, 1998:12)
- **Mixe-Zoque:** *Coatlán Mixe* (Hoogshagen, 1984:8)
- *Mura Pirahã* (Everett, 1986:281) [Note: preclitics, not real prefixes]
- **Mataco-Guaicuruan:** *Abipon* (Najlis, 1966:30-34; Susnik, 1986/87:91-93), *Mataco* (Hunt, 1940:40-44)
- **Zamucoan:** *Ayoreo* (Susnik, 1973:52-57)
- **Central Sudanic:** *Logbara* (Crazzolara, 1960:73), *Mamvu* (Vorbichler, 1971:227-228)
- **Trans-Fly:** *Kiwai* (Foley, 1986:132) [Note: second and third person are identical]

3.2 Suffixes:

- **Iranian:** *Northern Talysh* (Schulze, 2000:43) [Note: ergative suffixes show at least historically analytic number marking]
- **Nakh-Dagestanian:** *Lak* (Helmbrecht, 1996:131) [Note: only in past, the first and second person are identical], *Megeb* (Helmbrecht, 1996:138) [Note: second and third person are both zero]
- **Cuaiquer:** *Awa Pit* (Curnow, 1997:187-202) [Note: locutor vs. non-locutor marking]
- **East Papuan:** *Nasioi* (Hurd & Hurd, 1970:47-55)

4 Mandan type

	<i>Singular</i>	<i>Plural</i>	
<i>1</i>	wa-...	ru-...	<i>Inclusive</i>
<i>2</i>	ra-...		<i>Exclusive</i>
<i>3</i>	ø-...		

4.1 Prefixes:

- **Siouan:** *Mandan* (Mixco, 1997:17), *Assiniboine* (Levin, 1964:31-32), *Lakhota* (Van Valin, 1977:5, 10-13)
- *Coahuilteco* (Troike, 1996:655)
- **Arawakan:** *Ipurina* (Polak, 1894:7)
- **Gé:** *Xerente* (Wiesemann, 1986:365)
- **Mataco-Guaicuruan:** *Chulupi* (Susnik, 1968:66-68)
- **Chukotko-Kamchatkan:** *Koryak* (Comrie, 1980:64-67), *Itelmen* (Georg & Volodin, 1999:142), *Chukchi* (Kämpfe & Volodin, 1995:65) [Note: second and third person are both zero]
- **South Caucasian:** *Georgian* (Cherchi, 1999:30-31)
- **Central Sudanic:** *Mbay* (Keegan, 1997:24)
- **Eastern Nilotic:** *Turkana* (Dimmendaal, 1982:120), *Teso* (Tucker & Bryan, 1966:470), *Lotuho* (Tucker & Bryan, 1966:470), *Maasai* (Tucker & Mpaayei, 1953:53)
- **Semitic:** *Imperfect prefixes* (Hetzron, 1990:660) [Note: third person singular feminine is identical to second person]

4.2 Suffixes:

- None known

5 Sierra Popoluca type

	<i>Singular</i>	<i>Plural</i>	
		ta-...	<i>Inclusive</i>
1	ʔa-...		<i>Exclusive</i>
2	mi-...		
3	ø-...		

5.1 Prefixes:

- **Algonquian:** *Southwestern Ojibwa* (Schwartz & Dunnigan, 1986:305), *Eastern Ojibwa* (Bloomfield, 1956:44), *Menomini* (Bloomfield, 1962:36-40), *Passamaquoddy* (Leavitt, 1996:9-10), *Cree* (Wolfart, 1996:399) [Note: syncretism between inclusive and second person]
- **Siouan:** *Winnebago* (Lipkind, 1945:22-28)
- **Caddoan:** *Wichita* (Rood, 1996:600), *Caddo* (Chafe, 1976:65-70), *Pawnee* (Parks, 1976:164-175)
- **Mixe-Zoque:** *Sierra Popoluca* (Foster & Foster, 1948:17-19; Elson, 1960:207)
- **Huavean:** *Huave* (Stairs & Hollenbach, 1969:48-53)
- **Carib:** *Trio* (Carlin, 1997), *Carib* (Hoff, 1968:134)
- **Gé:** *Canela-Kraho* (Popjes & Popjes, 1986:175)
- **Mataco-Guaicuruan:** *Maká* (Gerzenstein, 1994:83-97)
- **South Caucasian:** *Svan* (Tuite, 1997:23)
- **Central Sudanic:** *Ngiti* (Kutsch Lojenga, 1994:190-193, 220)

5.2 Suffixes:

- **Mixtecan:** *Chalcatongo Mixtec* (Macaulay, 1996:138-143), *Ocotepc Mixtec* (Alexander, 1988:263-264) [Note: enclitics, not real suffixes. Original plural marking reanalysed as honorifics]
- **Quechuan:** *Tarma Quechua* (Adelaar, 1977:89-93, 127-128)
- **Aymaran:** *Jaqaru* (Hardman, 1966:79; 2000), *Aymara* (Deza Galindo, 1992:103; Hardman, 2001:105-119)
- **Nimboran:** *Nimboran* (Anceaux, 1965:83-91)
- **East New Guinea Highlands:** *Salt-Yui* (Irwin, 1974:14-15)

5.3 Both:

- **Arawakan:** *Campa* (Payne, 1981:34; Reed & Payne, 1986:325) [Note: agent prefixes and patient suffixes]

6 Apalai type

	<i>Singular</i>	<i>Plural</i>	
		s(y)-...	<i>Inclusive</i>
1	ø/y-...	ynan(y)-...	<i>Exclusive</i>
2	o/m-...		
3	n(y)-...		

6.1 Prefixes:

- **Carib:** *Apalai* (Koehn & Koehn, 1986:95-108), *Waiwai* (Hawkins, 1998:178-179), *Hixkaryana* (Derbyshire, 1979:146-149) [Note: syncretism between exclusive and third person in Waiwai and Hixkaryana]
- **South Caucasian:** *Svan* (Tuite, 1997:23) [Note: object marking]

6.2 Suffixes:

- **Wakashan:** *Kwakiutl* (Boas, 1947:252), *Heiltsuk* (Rath, 1981:77)
- **Quechuan:** *Huallaga Quechua* (Weber, 1986:334)

6.3 Both:

- **Austronesian:** *Acehnese* (Durie, 1985:48, 117, 125-127) [Note: Agent proclitics and Non-agent enclitics]

7 Others

7.1 Prefixes:

- **Tanna:** *Kwamera* (Lindstrom & Lynch, 1994:12), *Lenakel* (Lynch, 1967:46-48; 1978:45) [Note: only third person distinguishes number]
- **Malekula:** *Big Nambas* (Fox, 1976:52-61) [Note: only third person distinguishes number]
- **Nyulnyulan:** *Warrwa* (McGregor, 1994:41) [Note: some number distinctions depending on tense/verb class]

7.2 Suffixes:

- **Nakh-Dagestanian:** *Some Darginian dialects* (Helmbrecht, 1996:138) [Note: only second person distinguishes number]

8 Summary of cases

	<i>Maricopa type</i>	<i>Mandan type</i>	<i>Sierra Popoluca type</i>	<i>Apalai type</i>	<i>Others</i>	<i>Total</i>
<i>prefixes</i>	22	17	18	5	4	66 (79 %)

9 Towards an explanation

9.1 Special diachronic path towards person prefixes?

Person affixes originate from erstwhile independent pronouns via cliticization. If there are different diachronic paths leading to prefixes or to suffixes, then this should be visible in processes of cliticization of person markers. It turned out to be difficult to find cases of procliticization, so I cannot make to much of a claim at this moment. The available examples of cliticization suggest that there is no difference between pro- or enclitics in this respect.

The only clear proclitic case among the cited languages is Mura Pirahã. The Central Sudanic languages show signs of recent procliticization. The proclitics can go to a verb root, but also to an auxiliary. This auxiliary can encliticize to the verb, leading to a suppletive person/number suffixal paradigm. This two-stage development is also described for the Saharan language Tubu (Lukas, 1953). Other cases of ongoing procliticization do not show analytic person/number marking (e.g. Romance, Uto-Aztecan, Chadic).

In the set of examples, there are also some examples of encliticization. The Northern Talysh case shows a development of analytic person/number enclitics that turn suppletive. In some of the Mixtecan languages, the enclitics seem to lose their suppletive person/number marking because of a reanalysis of the former plural markers as honorifics. On the other hand, the description of Warlpiri enclitics by Hale (1973) looks like a system on the way of developing analytic person/number enclitics from erstwhile suppletive markers.

Concluding: the process of cliticization does not seem to be able to explain the prefixing preference of analytic person marking.

9.2 Areal effect due to the languages of America?

The languages of America show a strong preference for person prefixes, and there are many cases of analytical person/number marking found there. Yet, if only the cases outside America are counted there are indeed much less cases of analytic person/number marking, but the proportion of prefixes remains roughly the same. So, this is no explanation for the prefixal preference.

	<i>Maricopa</i> type	<i>Mandan</i> type	<i>Sierra</i> <i>Popoluca</i> type	<i>Apalai</i> type	<i>Others</i>	Total
<i>prefixes</i>	3	10	2	1	4	20 (74 %)
<i>suffixes</i>	4	0	2	0	1	7 (26 %)

However, the preference outside America is mainly due to the Mandan-type. The other types are equally found as prefixes as well as as suffixes. Note that the Mandan-type examples all come from a rather coherent macro-area: Near East/Northeast Africa.

9.3 Different kinds of change in suffixes versus prefixes?

Do prefixes lose number marking? The only case in which it is clear that the prefixes have lost number distinction recently is Warrwa. Probably this process is in its first phase in Warlpiri enclitics. There does not seem to be an explanation for the prefixal preference here.

Many languages listed above have bipersonal markers as well. Here, I did not include such bipersonal morphemes (i.e. special morphemes for combinations like ‘you-me’ in transitive constructions). These seem to be strongly represented among prefixal person marking. A possible speculation is that in the development of bipersonal paradigm number marking can become analytic. However, this bipersonal-prefix preference might very well turn out to be an effect of the overrepresentation of the languages of America.

Note that in general the various types of paradigms as distinguished above are often found within a genetic group. Closely related languages seem to be able to change between these types (and probably others as well).

9.4 Number grammaticalises independently from person?

Analytic *number* marking is far more often suffixal. These number suffixes are not reachable for fusion with the person prefixes. Suffixal person morphemes more easily fuse with suffixal number morphemes, cf. the suffixal development of Quechuan and of Northern Talysh.

There are various kinds of verbal number marking (cf. Corbett, 2000: Ch.8). These might grammaticalise prior to and independently from person marking. If such verbal number marking is used for participant number, then the independent pronouns might not need suppletive number marking. If such analytic person markers prociliticize, the present cases arise. If they encliticize, they will relatively quickly fuse with the number markers.

However, this explanation begs the question: why are verbal number markers normally suffixal? Maybe this is just the normal preference for suffixation.

10 Conclusion

This project is an open-ended search for marking of analytic person/number in verbal inflection. I hope to extend the current data-set in the future. I would be grateful for any references to additional cases. Among the 84 cases currently known, the preference for person prefixes is overwhelming.

To me, the best explanation for this preference seems to be the possibility for person and number to grammaticalise independently. If they happen to grammaticalise on different sides of the verb, then these affixes are not able to fuse diachronically. The result is an analytic person/number paradigm.

For this to happen, number marking probably has to grammaticalise before person marking. As suffixation is more common than prefixation, such verbal number marking will normally be a suffix. In the odd case that person marking then grammaticalises as a prefix, the result will be the cases as listed above. This means that the observed preference for person prefixes is a result of the logics of diachronic change.

11 References

- ADELAAR, WILLEM F.H. (1977). *Tarma Quechua: grammar, texts, dictionary*. Ph.D. dissertation, Universiteit van Amsterdam.
- ALEXANDER, RUTH MARY (1988). “A Syntactic Sketch of Ocotepéc Mixtec”. In: C. Henry Bradley & Barbara Erickson Hollenbach (eds.) *Studies in the Syntax of Mixtecan Languages*. Vol. 1, pp. 151-304. (Summer Institute of Linguistics Publications in Linguistics; 83). Arlington: Summer Institute of Linguistics.
- ANCEAUX, J.C. (1965). *The Nimboran Language: Phonology and Morphology*. (Verhandelingen van het Koninklijk Instituut voor Taal-, Land- en Volkenkunde; 44). Den Haag: Martinus Nijhoff.
- BLOOMFIELD, LEONARD (1956). *Eastern Ojibwa: Grammatical sketch, texts and word list*. Ann Arbor: University of Michigan Press.
- (1962). *Menomini Language*. New Haven: Yale University Press.
- BOAS, FRANZ (1947). *Kwakiutl Grammar: with a glossary of the suffixes*. (Transactions of the American Philosophical Society; 37:3). Philadelphia: American Philosophical Society.
- BYBEE, JOAN L., WILLIAM PAGLIUCA & REVERE D. PERKINS (1990). “On the asymmetries in the affixation of grammatical material”. In: William Croft (ed.) *Studies in Typology and Diachrony*, pp. 1-42. (Typological Studies in Language; 20). Amsterdam: John Benjamins.
- CARLIN, EITHNE B. (1997). “Verbal Qualities of Nouns and Nominalizations in Trio”. Paper presented at Amsterdam: ATW Colloquium (June 27, 1997).
- CHAFE, WALLACE L. (1976). *The Caddoan, Iroquoian and Siouan languages*. (Trends in Linguistics: State-of-the-art reports; 3). The Hague: Mouton.
- (1990). “Uses of the Defocusing Pronominal Prefixes in Caddo”. *Anthropological Linguistics* 32 (1/2): 57-68.
- CHERCHI, MARCELLO (1999). *Georgian*. (Languages of the World/Materials; 147). München: Lincom.
- COMRIE, BERNARD (1980). “Inverse Verb Forms in Siberia: evidence from Chukchee, Koryak and Kamchadal”. *Folia Linguistica Historica* 1 (1): 61-74.
- CORBETT, GREVILLE G. (2000). *Number*. (Cambridge Textbooks in Linguistics). Cambridge: Cambridge University Press.
- CRAZZOLARA, J.P. (1960). *A Study of the Logbara (Ma'di) Language*. London: Oxford University Press.
- CURNOW, TIMOTHY JOWAN (1997). *A grammar of Awa Pit (Cuaiquer): An indigenous language of south-western Colombia*. Ph.D. dissertation, Australian National University.
- CUTLER, ANNE, JOHN A. HAWKINS & GARY GILLIGAN (1985). “The suffixing preference: a processing explanation”. *Linguistics* 23: 723-758.
- CYSOUW, MICHAEL (2001). *The paradigmatic structure of person marking*. Ph.D. dissertation, University of Nijmegen.
- DERBYSHIRE, DESMOND C. (1979). *Hixkaryana*. Amsterdam: North Holland Publishing Company.
- DEZA GALINDO, JUAN FRANCISCO (1992). *Gramática de la Lengua Aymara*. Lima: Artex.
- DIMMENDAAL, GERRIT J. (1982). *The Turkana Language*. Ph.D. dissertation, Universiteit Leiden.
- DURIE, MARK (1985). *A Grammar of Acehnese: on the basis of a dialect of North Aceh*. (Verhandelingen van het Koninklijk Instituut voor Taal-, Land- en Volkenkunde; 112). Dordrecht: Foris.
- ELSON, BEN (1960). “Sierra Popoluca Morphology”. *International Journal of American Linguistics* 26 (3): 206-223.

- EVERETT, DANIEL L. (1986). “Pirahã”. In: Desmond C. Derbyshire & Geoffrey K. Pullum (eds.) *Handbook of Amazonian Languages*. Vol. 1, pp. 200-325. Berlin: Mouton de Gruyter.
- FOLEY, WILLIAM A. (1986). *The Papuan Languages of New Guinea*. (Cambridge Language Surveys). Cambridge: Cambridge University Press.
- FOSTER, MARY L. & GEORGE M. FOSTER (1948). *Sierra Popoluca Speech*. (Smithsonian Institution Publications; 8). Washington D.C.: U.S. Government Printing Office.
- FOX, G.J. (1976). *Big Nambas Grammar*. (Pacific Linguistics; B 60). Canberra: Australian National University.
- GARVIN, PAUL L. (1948). “Kutenai III: Morpheme Distribution (prefix, theme, suffix)”. *International Journal of American Linguistics* 14 (3): 171-187.
- GEORG, STEFAN & ALEXANDER P. VOLODIN (1999). *Die itelmenische Sprache: Grammatik und Texte*. (Tunguso Sibirica; 5). Wiesbaden: Harrassowitz.
- GERZENSTEIN, ANA (1994). *Lengua Maká: Estudio descriptivo*. (Archivo de Lenguas Indoamericanas). Buenos Aires: Universidad de Buenos Aires.
- GORDON, LYNN (1986). *Maricopa Morphology and Syntax*. Berkeley: University of California Press.
- GREENBERG, JOSEPH H. (1957). *Essays in Linguistics*. Chicago: University of Chicago Press.
- HALL, CHRISTOPHER J. (1988). “Integrating Diachronic and Processing Principles in Explaining the Suffixing Preference”. In: John A. Hawkins (ed.) *Explaining Language Universals*, pp. 321-349. Oxford: Blackwell.
- HALPERN, A.M. (1946). “Yuma”. In: Cornelius Osgood (ed.) *Linguistic structures of Native America*, pp. 249-288. (Publications in Anthropology; 6). New York: Viking Fund.
- HARDMAN, M.J. (1966). *Jaqaru: outline of phonological and morphological structure*. (Janua Linguarum, Series Practica; 22). The Hague: Mouton.
- (2000). *Jaqaru*. (Languages of the World/Materials; 183). München: Lincom.
- (2001). *Aymara*. (LINCOM studies in native American Linguistics; 35). München: Lincom.
- HAWKINS, JOHN A. & ANNE CUTLER (1988). “Psycholinguistic Factors in Morphological Asymmetry”. In: John A. Hawkins (ed.) *Explaining Language Universals*, pp. 280-317. Oxford: Blackwell.
- HAWKINS, ROBERT E. (1998). “Wai Wai”. In: Desmond C. Derbyshire & Geoffrey K. Pullum (eds.) *Handbook of Amazonian Languages*. Vol. 4, pp. 25-224. Berlin: Mouton de Gruyter.
- HELMBRECHT, JOHANNES (1996). “The syntax of personal agreement in East Caucasian languages”. *Sprachtypologie und Universalien Forschung* 49 (2): 127-148.
- HETZRON, ROBERT (1990). “Semitic Languages”. In: Bernard Comrie (ed.) *The world's major languages*, pp. 654-663. Oxford: Oxford University Press.
- HOFF, B.J. (1968). *The Carib Language*. (Verhandelingen van het Koninklijk Instituut voor Taal-, Land- en Volkenkunde; 55). Den Haag: Martinus Nijhoff.
- HOOGSHAGEN, SEARLE (1984). “Coatlán Mixe”. In: Munro S. Edmonson (ed.) *Supplement to the Handbook of Middle American Indians*. Vol. 2: Linguistics, pp. 3-19. Austin: University of Texas Press.
- HUNT, R.J. (1940). *Mataco Grammar*. Tucuman: Instituto de Antropologia.
- HURD, CONRAD & PHYLLIS HURD (1970). “Nasioi verbs”. *Oceanic Linguistics* 9 (1): 37-78.
- IRWIN, BARRY (1974). *Salt-Yui Grammar*. (Pacific Linguistics; B 35). Canberra: Australian National University.
- JACOBSEN, WILLIAM H., JR. (1964). *A Grammar of the Washo Language*. Ph.D. dissertation, University of California, Berkeley.
- KÄMPFE, HANS-RAINER & ALEXANDER P. VOLODIN (1995). *Abriß der Tschuktschischen Grammatik auf der Basis der Schriftsprache*. (Tunguso Sibirica; 1). Wiesbaden: Otto Harrassowitz.

- KEEGAN, JOHN M. (1997). *A Reference Grammar of Mbay*. (LINCOS studies in African Linguistics; 14). München: Lincom.
- KENDALL, MARTHA B. (1976). *Selected Problems in Yavapai Syntax*. New York: Garland.
- KOEHN, EDWARD & SALLY KOEHN (1986). “Apalai”. In: Desmond C. Derbyshire & Geoffrey K. Pullum (eds.) *Handbook of Amazonian Languages*. Vol. 1, pp. 33-127. Berlin: Mouton de Gruyter.
- KUTSCH LOJENGA, CONSTANCE (1994). *Ngiti: a Central Sudanic Language of Zaire*. (Nilo-Saharan Linguistic Analyses and Documentation; 9). Hamburg: Rüdiger Köppe.
- LANGDON, MARGARET (1970). *A Grammar of Diegueño*. Berkeley: University of California Press.
- LASTRA DE SUÁREZ, YOLANDA (1984). “Chichimeco Jonaz”. In: Munro S. Edmonson (ed.) *Supplement to the Handbook of Middle American Indians*. Vol. 2: Linguistics, pp. 20-42. Austin: University of Texas Press.
- LASTRA, YOLANDA (1998). *Ixtenco Otomí*. (Languages of the World/Materials; 19). München: Lincom.
- LEAVITT, ROBERT M. (1996). *Passamaquoddy-Maliseet*. (Languages of the World/Materials; 27). München: Lincom.
- LEVIN, NORMAN B. (1964). *The Assiniboine Language*. The Hague: Mouton.
- LINDSTROM, LAMONT & JOHN D. LYNCH (1994). *Kwamera*. (Languages of the World/Materials; 2). München: Lincom.
- LIPKIND, WILLIAM (1945). *Winnebago Grammar*. New York: King's Crown Press.
- LOWIE, ROBERT H. (1941). *The Crow Language: Grammatical Sketch and Analyzed Text*. Berkeley: University of California Press.
- LUKAS, J. (1953). *Die Sprache der Tubu in der zentralen Sahara*. Berlin: Akademie Verlag.
- LYNCH, JOHN D. (1967). *A Comparative Study of the Languages and Dialects of the Island of Tanna, Southern New Hebrides*. Ph.D. dissertation, University of Sydney.
- (1978). *A Grammar of Lenakel*. (Pacific Linguistics; B 55). Canberra: Australian National University.
- MACAULAY, MONICA (1996). *A grammar of Chalcatongo Mixtec*. (University of California Publications in Linguistics; 127). Berkeley: University of California Press.
- MANRIQUE, C. LEONARDO (1967). “Jiliapan Pame”. In: Robert Wauchope & Norman A. McQuown (eds.) *Handbook of Middle American Indians*. Vol. 5: Linguistics, pp. 331-348. Austin: University of Texas Press.
- MARING, JOEL MARVYL (1967). *Grammar of Acoma Keresan*. Ph.D. dissertation, Indiana University.
- MATTHEWS, G.H. (1965). *Hidatsa Syntax*. (Papers in formal linguistics; 3). The Hague: Mouton.
- MCGREGOR, WILLIAM B. (1994). *Warrwa*. (Languages of the World/Materials; 89). München: Lincom.
- MILLER, AMY (2001). *A Grammar of Jamul Tiipay*. (Mouton Grammar Library; 23). Berlin: Mouton de Gruyter.
- MIXCO, MAURICIO (1997). *Mandan*. (Languages of the World/Materials; 159). München: Lincom.
- MUNRO, PAMELA (1976). *Mojave Syntax*. New York: Garland.
- NAJLIS, ELENA LIDIA (1966). *Lengua Abipona*. Vol. 1. (Archivo de lenguas Precolombinas; 1). Buenos Aires: Centro de Estudios Lingüísticos.
- PARKS, DOUGLAS RICHARD (1976). *A Grammar of Pawnee*. (Garland studies in American Indian linguistics). New York: Garland.
- PAYNE, DAVID L. (1981). *The Phonology and Morphology of Axininca Campa*. (Summer Institute of Linguistics Publications in Linguistics; 66). Arlington: Summer Institute of Linguistics.
- POLAK, REV. J.E.R. (1894). *A Grammar and a Vocabulary of the Ipuriná Language*. London: Kegan Paul, Trench, Trübner & Co.

- POPJES, JACK & JO POPJES (1986). “Canela-Krahô”. In: Desmond C. Derbyshire & Geoffrey K. Pullum (eds.) *Handbook of Amazonian Languages*. Vol. 1, pp. 128-199. Berlin: Mouton de Gruyter.
- RATH, JOHANN C. (1981). *A Practical Heiltsuk-English Dictionary (with a grammatical introduction)*. Ph.D. dissertation, Universiteit Leiden.
- REED, JUDY & DAVID L. PAYNE (1986). “Asheninca (Campa) Pronominals”. In: Ursula Wieseemann (ed.) *Pronominal Systems*, pp. 323-331. Tübingen: Gunter Narr.
- ROBINETT, FLORENCE M. (1955). “Hidatsa II: affixes”. *International Journal of American Linguistics* 21 (2): 160-177.
- ROOD, DAVID S. (1996). “Sketch of Wichita, a Caddoan Language”. In: Ives Goddard (ed.) *Handbook of North American Indians*. Vol. 17: Languages, pp. 580-608. Washington D.C.: Smithsonian Institution.
- RUDE, NOEL EMERSON (1985). *Studies in Nez Perce Grammar and Discourse*. Ph.D. dissertation, University of Oregon.
- SAPIR, EDWARD (1921). *Language, an introduction to the study of speech*. New York: Harcourt, Brace and Company.
- SCHULZE, WOLFGANG (2000). *Northern Talysh*. (Languages of the World/Materials; 380). München: Lincom.
- SCHWARTZ, LINDA J. & TIMOTHY DUNNIGAN (1986). “Pronouns and pronominal categories in southwestern Ojibwe”. In: Ursula Wieseemann (ed.) *Pronominal Systems*, pp. 285-322. Tübingen: Gunter Narr.
- STAIRS, EMILY F. & BARBARA ERICKSON HOLLENBACH (1969). “Huave Verb Morphology”. *International Journal of American Linguistics* 35: 38-53.
- SUSNIK, BRANISLAVA (1968). *Chulupi, esbozo gramatical analitico*. Asunción: Museo Etnográfico ‘Andres Barbero’.
- (1973). *La Lengua de los Ayoweos-Moros: Estructura gramatical y fraseario*. (Lenguas Chaqueñas; 5). Asunción: Museo Etnográfico ‘Andres Barbero’. (2nd edition).
- (1986/87). *Los aborígenes del Paraguay*. (Lenguas Chaqueñas; 7/1). Asunción: Museo Etnográfico ‘Andres Barbero’.
- TROIKE, RUDOLPH C. (1996). “Sketch of Coahuilteco, a Language Isolate of Texas”. In: Ives Goddard (ed.) *Handbook of North American Indians*. Vol. 17: Languages, pp. 644-665. Washington D.C.: Smithsonian Institution.
- TUCKER, A.N. & M.A. BRYAN (1966). *Linguistic Analyses of the Non-Bantu Languages of North-Eastern Africa*. London: Oxford University Press.
- TUCKER, A.N. & J. TOMPO OLE MPAAYEI (1953). *A Maasai Grammar with Vocabulary*. London: Longmans, Green and Co.
- TUITE, KEVIN (1997). *Svan*. (Languages of the World/Materials; 139). München: Lincom.
- VAN VALIN, ROBERT DETRICK, JR. (1977). *Aspects of Lakhota Syntax*. Ph.D. dissertation, University of California, Berkeley.
- VORBICHLER, ANTON (1971). *Die Sprache der Mamvu*. (Afrikanistische Forschungen; 5). Hamburg: J.J. Augustin.
- WEBER, DAVID JOHN (1986). “Huallage Quechua Pronouns”. In: Ursula Wieseemann (ed.) *Pronominal Systems*, pp. 333-350. Tübingen: Gunter Narr.
- WIESEMANN, URSULA (1986). “The pronoun systems of some Je and Macro-Je Languages”. In: Ursula Wieseemann (ed.) *Pronominal Systems*, pp. 359-380. Tübingen: Gunter Narr.
- WOLFART, H.C. (1996). “Sketch of Cree, an Algonquian Language”. In: Ives Goddard (ed.) *Handbook of North American Indians, Vol 17: Languages*, pp. 390-439. Washington D.C.: Smithsonian Institution.