tottischen bedeutet *he* 'er'. Das ist also dieselbe Konstruktion, die wir vorher im Buschmännischen gesehen hatten.

Und wie ist es nun mit dem Zusammenhang zwischen Kultur und grammatischer Struktur der Khoisansprachen? Um die Frage möglichst ausführlich beantworten zu können, muß man das entsprechende Material auch in anderen Sprachgruppen Afrikas untersuchen.

I. So sieht man, daß das Prinzip der Anschaulichkeit die Klassifizierungssysteme der Sprachen der Jäger und Fischer beherrscht. Bewegungsfähiges und zugleich auch Lebenswichtiges wird dem Unbeweglichen, mitunter auch Unbedeutsamen gegenübergestellt.

II. In der Sprache der Hackbauer führt die Wirtschaftsform zu einer Klassifizierung, welche derjenigen der Aufspeicherung des Ernteertrages ähnelt. So werden z. B. in der melanesischen Sprache Kiriwina, wo es ähnliche wie im Bantu Gesellschaftsverhältnisse (Matriarchat) und ähnliche Wirtschaftsformen gibt, die Bestandteile der Pflanzen in vier Klassen zusammengefasst, 1. Blätter, 2. kleine Zweige, 3. Stämme, bzw. Stengel (Äste) und 4. Wurzeln.

III. In den Sprachen der Hirtenvölker ist die Geschlechtsunterscheidung am Vieh zu einem Einteilungsprinzip der Nomina geworden. Man kann das sowohl in den Sprachen der Hamiten und Semiten wie auch in denjenigen der Indogermanen beobachten. Daneben spiegelt sich auch die Gliederung der Gesellschschaft in drei Altersklassen in manchen Sprachen der Hirtenvölker (Galla) wider.

IV. Dagegen könnte man in der Ausbildung einer besonderen Passivform sowohl im Bantu wie auch im Hamito-Semitischen eine fortschreitende Objektivisierung der Vorgänge sehen, welche in den Sprachen der Jäger noch emotionell, also mehr subjektiv (aktiv) aufgefasst werden. Und umgekehrt würde man geneigt sein, die Unterscheidung von Exklusiv- und Inklusivformen als ein Merkmal der Urtümlichkeit der Khoisansprachen aufzufassen.

V. Die Bantu-Konkordanz und Antizipation des Subjektes in der Form eines Pronomens würde man dann auf die bäuerliche Haltung zurückführen, die Dinge möglichst explizite auseinanderzulegen und sich bei der Schilderung eines Vorganges der Perseveration, der Dauerkennzeichnung der Gedankengänge zu bedienen.

TADEUSZ MILEWSKI

TYPOLOGICAL SIMILARITIES BETWEEN CAUCASIAN AND AMERICAN INDIAN LANGUAGES

1. The analysis of phonological structure and the comparison of morphological, syntactical and lexical systems show the typological similarities between Caucasian languages and many American Indian dialects from Pacific Coast. This similarity of linguistic systems of two groups of languages — considering many thousand miles distance — is very important and I will analyze it from different points of view.

2. The characteristic feature of the phonological systems of languages, belonging to both linguistic groups referred to, is the great abundance of phonemes [1]. The phonological systems of many American Indian languages from Pacific Coast (Coos, Chinook, Coeur d'Alene etc.) and from Canada (e. g. Chipewyan) comprise

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[1] Cf. A. Trubetzkoy, *Die Konsonantsysteme der ostkaukasischen Sprachen*, „Caucasica" 8 (1931) p. 1—52. — J. F. Jakovlev, *Drevnie svjazi jazykov Kavkaza, Azji i Ameriki*, „Trudy Instituta Etnografii imenia N. N. Mikljucho-Makljaja. Novaja Seria" II, p. 196—204, Akademija Nauk USSR 1947. — C. F. Voegelin, *Inductively Arrived at Models for Cross-Genetic Comparisons of American Indian Languages*, University of California Publications in Linguistics 10 (1954), p. 27—45. — T. Milewski, *Phonological Typology of American Indian Languages*, „Lingua Posnaniensis" IV (1953), p. 229—276. *Comparaison des systemes phonologiques des langues caucasiennes et américaines*, „Lingua Posnaniensis" V (1955), p. 136—165. *Similarities Between the Asiatic and American Indian Languages*, „International Journal of American Linguistics", Vol. 26, No 4 (October 1960), p. 265—274.

40—50 phonemes and the number of phonemes in the North Caucasian languages amounts to 40—70. On the other hand the Caucasian and American languages mentioned above belong to consonant type. Their phonological feature is the distinct preponderance of non-nasal consonants (over 70% of all phonemes), while the number of nasal consonants and vowels is very low (lower than 30%). In the Caucasian languages discussed here the number of non-nasal consonants ranges from 26 to 66, that is 70,7%—92,9% of the phonemes of their systems, and the American languages have between 20 and 43 non-nasal consonants i. e. 70,5%—87,2% of the phonemes of the system.

The languages of both compared linguistic groups are similar not just in their percentage of non-nasal consonants but in the structure of their phonological systems as well. The high percentage of non-nasals in Caucasian and American Indian languages referred to is caused first of all by the richness of their stop systems. In the majority of languages belonging to both analyzed groups we distinguish eight types of closures: labio-plosive (e. g. *p*), plosive-dental (e. g. *t*), affricate-dental (e. g. *c*), affricate-alveolar (e. g. *č*), affricate-lateral (e. g. *Ł*), front-velar (e. g. *k*), back-velar (e. g. *q*) and glottal stop (ʔ). Each of the eight closures except the last one is the basis of pronunciation of three consonants differing from one another only by extended articulations, and the oppositions of three sets of consonants is based on them. They are: voiced set (*b*, *d*, *ʒ*, *ǯ*, *L*, *g*, *g*·), voiceless (*p*, *t*, *c̆*, *č̆*, *Ł̆*, *k*, *q*, ʔ) and glottalized (*p'*, *t'*, *c'*, *č'*, *Ł'*, *k'*, *q'*). What is typical here: the glottalized consonants are pronouced with closed glottis which shifting suddenly upwards and to the front pushes out the air and produces the phone. That is why the following system is the most typical one for both compared linguistic groups:

b	*d*	*ʒ*	*ǯ*	*L*	*g*	*g*·	
p	*t*	*c*	*č*	*Ł*	*k*	*q*	ʔ
p'	*t'*	*c'*	*č'*	*Ł'*	*k'*	*q'*	

In America the nearest to this theoretical system is that of Coeur d'Alene and in Caucasus the system of Artschi. Systems much like this typical one function in other languages discussed here, too.

3. The shortness of the morphemes is a common feature of Caucasian and of many American Indian languages from Pacific Coast and from Canada. Ch. F. Hockett[1] has remarked that the average length of a morpheme in the languages of the world is inversely proportional to the number of its phonemes: the less the number of the phonemes in a language the greater the average length of a morpheme, i. e. the quantity of its phonemes; and inversely too. The smallest number of phonemes 13 is used in Hawaiian language from Polynesian group and in Aranta spoken in the Central Australia. In these languages the average number of phonemes in a morpheme is four. Inversely in the phonological systems of North Caucasian languages (members of Abasgo-Kerketian group and of Checheno-Lesghian one) and the systems of many Indian languages of North America it amounts to 45—70 phonemes. In these languages the average length of a morpheme renges from 1,25 to 1,40 phoneme.

This difference in linguistic structure is connected with the fact that the greater the number of phonemes in a language the greater the number of phonological oppositions between them and in consequence the greater the number of distinctive features of each phoneme. In Aranta the phoneme *p* has only two distinctive features. It is non-nasal in opposition to nasal *m* and it is labial in opposition to dental *t*. In Coeur d'Alene (North America) and in Rutul (North Caucasus) the phoneme *p* has four distinctive features. It is non-nasal (*p* : *m*) and labial (*p* : *t*) and besides it is voiceless in opposition to voiced *b* and it is non-glottalized in opposition to glottalized *p'*. In Ubyk (North West Caucasus) the phoneme *p* had five distinctive features: four already referred to in Coeur d'Alene and Rutul and moreover in this language *p* was non-aspirated in opposition to aspirated *ph*.

The average number of distinctive features of a morpheme is more or less the same in the languages of the Aranta type as in the Caucasian dialects. The difference consists only in the division of the distinctive features among the phonemes forming a morpheme. In the Aranta and in the Hawaiian a morpheme consists of a great number of phonemes having a small number of distinc-

[1] Charles F. Hockett, *A Course in Modern Linguistics*, 1959, p. 93.

tive features and inversely in the American Indian languages as well as in the Caucasian dialectes analysed here a morpheme is formed of a small number of phonemes having a great number of distinctive features.

The phonological system of the Chinook language spoken by the Indians on the coast of the Columbia-River in North America is composed of 45 phonemes (14 vowels and 31 consonants). Thanks to the richness of the system in most of the Chinook morphemes there is only a single phoneme; the number of the morphemes comprising two phonemes (chiefly the roots) is smaller and the morphemes composed of three phonemes occur only exceptionally. Consequently the Chinook words [1] consist in great part of the morphemes including a single phoneme, e. g. *a-m-L-a-χ-cg-ā'm-χ* 'thou wert in the habit of taking it from her', *a-* aorist, *m-* 'thou' subject, *L-* 'it' object, *a-* 'her' second object, *-χ-* indicates that 'it' belongs to 'her', *-cg-* 'to take' a root, *-am* completive, *-χ* usitative [2]. In this word 8 morphemes are formed by 10 phonemes and so the average length of a morpheme is 1,25 phoneme (10 : 8 = 1,25). It corresponds more or less to the average length of a morpheme in Chinook. A similar relation between the richness of the phonological system and the structure of the morpheme is found in many Indian languages from Pacific Coast and from Canada (Na-Dene family) as well as in the North Caucasian languages in which the number of phonemes ranges from 47 to 70. Typical here is a sentence in Ubyk, a language from North Western Caucasian group: *dγ-o-n-π-ot'-i* (≙ *dγa-u-n-π-ot'-i*) *a-u-s-qo* 'wie-sie-dir-gibt dir-ich-werde-sagen' [3]. The phonological system of the Ubyk language consists of 61 phonemes and in the quoted Ubyk sentence 14 phonemes form 10 morphemes. Consequently the average length of a morpheme is here 1,40 phoneme. The richness of phonological systems results in the shortness of the morphemes in the analyzed Indian and Caucasian languages and that

[1] Cf. T. Milewski, *The Conception of the Word in the Languages of North American Natives*, „Lingua Posnaniensis", III, 1951, s. 248—268.

[2] Cf. F. Boas, *Handbook of American Indian Languages*, Part 1, 1911, p. 576.

[3] Cf. A. Dirr, „Caucasica" 4, Leipzig 1927, p. 92.

is why the structure of the morphological systems of the languages belonging to this two linguistic groups is similar in some respects.

4. The chief problem of the comparative syntax consists in the linguistic analysis of the functional equivalents of three syntactical constructions, the nominal group and two kinds of sentences: the intransitive sentence and the transitive one, in all languages of the world [1]. The nominal group, e. g. Lat. domus patris, consists of two nominal forms: the determined member (domus) and the determining one (patris). The kernel of the sentence is the predicate expressing the categories of the person, of the tense, of the mood and of the voice. In an intransitive sentence, e. g. Lat. Marcus dormit, a noun — the subject (Marcus) accompanies the predicate (dormit), but a transitive sentence, e. g. Lat. Marcus necat leonem, consists of three members: the predicate (necat), the agent (Marcus) and the patient (leonem). Consequently we can distinguish four main abstract syntactical relations: 1. between a subject and an intransitive predicate (Marcus dormit), 2. between an agent and a transitive predicate (Marcus necat), 3. between a transitive predicate and a patient (necat leonem), 4. between the determined member of a nominal group and the determining one (domus patris). No language expresses these four syntactical relations with the help of four distinct formal exponents. Everywhere the same formal exponent expresses two or sometimes three syntactical relations among four mentioned here, but in different languages these combinations are realized in different ways. In all probability the six various combinations of analyzed syntactical functions occur in the languages of the world and if we indicate the formal exponents of the syntactical relations by the letter *a*, *b*, *c*, the division of their functions in the six types of languages will be as follows:

[1] Cf. T. Milewski, *La structure de la phrase dans les langues indigènes de l'Amérique du Nord*, „Lingua Posnaniensis" II (1950), p. 162—207, and *Analyse typologique de la langue ojibwa*, „Bullétin de la Société Polonaise de Linguistique" XX (1961), p. 90—115. — Z. Gołąb, *Problem podmiotu* (The Problem of Subject), Bulletin SPL XVII (1958), p. 19—66.

Relations:	Syntactical types:					
	1	2	3	4	5	6
subject — predicate:	a	a	a	a	a	a
agent — predicate:	a	b	a	b	a	b
patient — predicate:	b	a	b	a	b	a
determinant — determinate:	c	c	b	b	a	a

In a few known American Indian languages of the type 5 (e. g. Nass) and of the type 6 (e. g. Guarani, Tunica, Tsimshian) a subject is not clearly distinguished from a determinant because the feature of these both syntactical members is the exponent *a*. Consequently in the languages belonging to these two types an intransitive sentence has a similar structure as a nominal group. Moreover a nominal member of the transitive sentences (in the type 5 an agent and in the type 6 a patient) has also a characteristic: the exponent *a* endowed with an extremely wide sphere of function. Only the second nominal member of these sentences (in the type 5 a patient and in the type 6 an agent) is designated by dint of the exponent *b*.

In all other languages a subject is formally different from a determinant but the distinction is made in different languages in different ways. The languages of the type 3 (e. g. Hopi in North America and Malay) and of the type 4 (e. g. Zoque in Central America and Eskimo) make use of two formal exponents: *a* and *b* only. In the languages of the type 3 the exponent *a* characterizes a subject and an agent and the exponent *b* designates a patient and a determinant. On the other hand in the languages of the type 4 the exponent *a* is characteristic for a subject and a patient and the exponent *b* occurs in the forms of an agent and a determinant. In this languages an intransitive sentence is clearly distinguished from a nominal group but a transitive one looks like a combination of the elements of an intransitive sentence and of a nominal group because one of its members is here formally a subject (in the type 3 an agent and in the type 4 a patient), while the second member functions as a determinant of a predicate (in the type 4 a patient and in the type 3 an agent).

The languages belonging to the type 1 (e. g. the Indo-European) and to the type 2 (e. g. the majority of the Caucasian languages)

avail themselves of three formal exponents, for in addition to the exponent *a* of the subject the exponent of the determinant *c* and the exponent *b* appear in the transitive sentences. Only in these languages the nominal group, including the form of the determinant with the exponent *c* (usually the ending of genetive), is clearly distinguished from an intransitive sentence and from a transitive one, which contain the exponents *a* and *b*. On the other hand the relationship between the two kind of the sentences is complicated. In the languages belonging to the type 1 an agent is formally identical with the subject of an intransitive sentence characterized by the exponent *a* (usually the ending of nominative) and a patient is here denoted by the distinct exponent *b* (usually the ending of accusative). In the languages of the type 2 the patient is formally identical with the subject of an intransitive sentence because these both syntactical members contain the same exponent *a* (in the Caucasian languages generally the ending zero of absolutive). On the other hand an agent is here characterized by the distinct exponent *b* (in the majority of the Caucasian languages the ending of ergative).

So far we have determined the various syntactical types of the languages on the ground of the differences in the functions of their exponents *a*, *b*, *c*, but now we will present a syntactical typology based on the differences of their form. From this point of view we can distinguish three main types of languages: positional, flexional and incorporating languages. In the positional ones the syntactical relations are expressed by the word order, or by the relative position of words in a sentence, e. g. Engl. Mark kills the lion, word order: agent — predicate — patient. In those belonging to the flexional type the function of subject, agent, patient and determinant is marked by the form of words, e. g. by the endings (e. g. Lat. Marc-us neca-t leon-em), by the prefixes, by the alternants, by the place of the stress etc. In the incorporating languages the pronominal morphemes incorporated in a predicate function as a formal agent and as a formal patient characterized by their form or by their position. A nominal agent as well as a nominal patient, deprived of morphological exponents of their syntactical function, appear as the appositions of the incorporated pronominal morphemes,

e. g. Yuchi (Oklahoma) gɔnt'ɛ'nʔ b'aχτɛ'wənʔ wɛ'hʔτnɛ 'the man saw the horse', the nominal agent gɔnt'ɛ'-nʔ 'man-the', the nominal patient b'aχτɛ'-wənʔ 'horse-the', the predicate wɛ'-hʔ-τnɛ 'it-he saw' [1]. In the predicate wɛ'-hʔ-τnɛ two pronominal prefixes the pronominal patient *wɛ-* and the pronominal agent *-hʔ-* occur. The function of the prefixes is indicated by their position. The nominal members of the sentence: the agent and the patient are destitute of the morfological exponents of their syntactical functions but they are in concordance (thanks their pronominal suffixes -nʔ and -wənʔ) with the pronominal prefixes of predicate as to number and gender and that is why their syntactical function is determinated. The function of a nominal member is the same as that of a pronominal prefix agreeing with it. Analogically in the incorporating languages a pronominal morpheme functions as a formal subject and a nominal subject of the sentence occur as its apposition (the construction father he-sleep 'the father sleeps'). Similarly in a nominal group a pronominal morpheme of a determined member functions as a formal determinant and a nominal determinant appears as its apposition (the construction father his-house 'the father's house'). In the syntax of the incorporating languages the function of the pronominal elements is the most important one and that is why these languages could be determinated as the pronominal languages. Beside the pluraly incorporating languages of the type presented here many languages belong to the mixed flexional-incorporating ones. In this type the pronominal morphemes are incorporated in the predicate but the nominal members of the sentence are characterized by their flexional endings.

All languages of the world belong to a type based on the function of the exponents *a*, *b*, *c* (the types 1 to 6) and at the same time to a type based on their form (the positional, flexional and incorporating languages).

The general similarity between the syntax of American Indian languages and that of the Caucasian dialects consists in the great variety of their syntactical constructions. In both linguistic groups the constructions occur belonging to various syntactical types

[1] Cf. G. Wagner, Yuchi, *Handbook of American Indian Languages*, Part 3, p. 315.

presented here and in many cases the constructions of the American languages and of Caucasian ones pertain to the same type. In American Indian languages the constructions belonging to all six types distinguished on the basis of the function of the formal exponents *a*, *b*, *c* occur. At the same time several languages of New World pertain to all four types (positional, flexional, incorporating and flexional-incorporating) based on the form of these exponents. In Caucasian languages the constructions belonging to the types 1, 2, 4 based on the function of the exponents *a*, *b*, *c* and all types based on this form occur. That is why many constructions found in the languages of both groups are very similar.

The incorporating and flexional-incorporating languages which on the ground of the function of their formal exponents *a*, *b*, *c* pertain ot the types 2 or 4 are of special importance. These languages are spoken only in America and in Caucasus. The incorporating languages belonging to the type 4 are as follows: the languages of the Mayan family in Central America, Taos (New Mexico) member of the Tanoan family, Coeur d'Alene (Idaho) pertaining to the Salishan family and on the other hand Abkaz a language of the North Western Caucasian group. The Zoque language in Central America and Eskimo belong parallely to the flexional-incorporating languages and to the type 4. In Caucasus the syntactical systems of a similar structure function in Ubyk and in Adyghe languages (Circassian and Quabardi): the members of the North Western Caucasian group. The flexional-incorporating languages of the type 2 are represented in North America by Coos and Siuslaw in Oregon and on the other hand the similar syntactical constructions occur in South Caucasian languages (the Kharhvetian group including Georgian, Laz, Mingrelian and Svanian). The flexional-incorporating syntactical systems of the North Eastern Caucasian languages (the Checheno-Lesghian group) pertain also to the type 2 but in these languages a prefix incorporated in the predicate indicates only the subject in a intransitive sentence and the patient in a transitive one (formal exponent *a*). The morpheme of the agent does not appear in the predicate and it makes a difference between the North Eastern Caucasian languages and the other incorporating ones.

5. The lexical similarities between the American Indian languages and the Caucasian dialects consist in the resemblance of their numeral systems. In almost all Caucasian languages and in many languages of Central America, Mexico and Pacific Coast a system of numerals having twenty for basis is used [1]. In the other languages of the world the decimal system is the most widespread.

6. The easiest explanation of similarities in the structure of the systems of the Caucasian and American languages is the hypothesis of the existence of a great Convergence Area in Central Asia for several millenia B. C. Languages — members of the Area — though belonging to different families, owing to mutual contacts created phonological, morphological, syntactical and lexical systems much like one another. The essential features of these similar systems are preserved till now in spite of the fact that ethnic shiftings placed some languages in Caucasus and other on the Pacific Coast of North America.

The distribution of the common structural features of the linguistic systems analyzed here confirms our suggestions. It is true that some of them occur in the other languages of the world but the whole set or a large part of it is only found in the Caucasian languages referred to and those of the extreme northeast corner of Asia (the Chukchi-Kamchadal family) and west area of North America, i. e. among other in the part of Asia nearest America and the part of America which is nearest Asia.

The great majority of South American languages, the Penutian family of California as well as the languages of the Atlantic Coast in North America belong to a completely different type. Those languages from the oldest linguistic layer of America and the newcomers from Asia, speaking dialects similar to the Caucasian and Chukchi-Kamchadal languages, were piled one upon the other. That is why the languages with structural features analyzed here are found in the areas of America situated nearer Bering Straits while those deprived of them are in more distant areas.

[1] Cf. A. Dirr, *Einführung in das Studium der kaukasischen Sprachen*, Leipzig 1928; and P. W. Schmidt, *Die Sprachfamilien und Sprachenkreise der Erde*, Heidelberg 1926, p. 357—380.

JAN KINLE

JADEITE — ITS IMPORTANCE FOR THE PROBLEMS OF ASIA — AMERICA PRECOLUMBIAN RELATIONSHIPS

The greatest difficulties in studies on jadeite are created by the terminology. In French and English literature nephrite and jadeite are defined by a joint term „jade" used independently of mineralogical names. Authors very often use in publications the term „jade" when writing about these minerals, not explaining however, which of the two kinds is concerned, the result of which is that these works are comprehensible only for a specialist. As a result of these terminological inexactitudes, an archaeologist is mainly using the term „jade" to define nearly all green, untransparent, stones, of hardness above 6 in Mohs scale. A term also very often used by an archeologist is „greenstone", referring generally to all green stones, serpentine included. As regards the exact term „jadeite", it appears in archaeological and ethnographical literature very often, but in most cases it is used unproperly, mostly with reference to related or similar minerals. Minerals which are found as ready objects in the following countries are considered as jadeite [1]:

1. Chloromelanite (Korea, Japan; Mexico, Egypt, USA).
2. Nephrite (China, India, Germany, America).
3. Fibrolite (Japan, Alaska).
4. Grossular (Transvaal).
5. Bowenite (Kashmir, China, America).
6. Californite (idocrase) (America).
7. Pectolite (Alaska).
8. Amazonite (Amazon jade).
9. Saussurite (Switzerland, USA, Italy, Germany).
10. Verdite (Transvaal — „African Jadeite").

[1] H. Smith, *Gemstones*, London 1949; R. Webster, *More about Jades*, „The Gemmologist", Vol. XXVIII, Nr. 338, 1959, p. 166—168.