

Linguistics

Linguistics & Paleontology of Culture

Thomas V. Gamkrelidze

*Academy Member, G. Tsereteli Institute of Oriental Studies, Tbilisi
Georgian National Academy of Sciences*

ABSTRACT. The picture of areal affinities drawn from the study of grammatical, phonological, and lexical isoglosses among dialects of a proto-language provides a way of determining how dialectal differentiation of the proto-language proceeded and hence of establishing what contacts took place among speakers of the dialects. In other words, purely linguistic facts make it possible to establish extra-linguistic factors, such as historical interactions among speakers of the linguistic systems and their achievements in the domain of material and spiritual culture. © 2008 Bull. Georg. Natl. Acad. Sci.

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Of particular value and significance for linguistically based reconstruction of non-linguistic historical and social relations is formal semantic analysis of the dialect lexicons, since these can reflect all essential aspects of the historical existence of their speakers. The historical existence of the speakers includes the ecological environment (fauna, flora, geographical surroundings, climate) and human habitation and migration in the environment, as well as culture in the broadest sense (including both material and spiritual culture). Semantic reconstruction of relevant lexemes from the daughter languages gives us a general representation (although sometimes only a fragmentary one) of the speakers' historical existence. In such reconstructions, linguistic facts are a source of information on prehistoric culture and its historical evolution.

Reconstructing elements of the extra-linguistic world of daughter-language speakers in turn gives a clearer picture of the linguistic affinities among the daughter languages and their development in time, i.e. of purely linguistic factors. This is particularly true of the semantic structure of language, which simply cannot be stud-

ied in isolation from the external world that is reflected in the content plane of language.

In formal reconstruction the proto-meaning often cannot be established without going beyond strictly linguistic facts and bringing in typological data on the history of the cultural domains involved. For example, for the Proto-Indo-European base *Haios-*, whose reflexes in the daughter languages mean variously 'copper', 'bronze' and 'iron', we reconstruct the prehistoric meaning 'copper', not 'bronze' and especially not 'iron', since the period of Indo-European linguistic unity was during the Copper Age and earlier.

The analysis of language as closely linked to its speakers' culture was developed during the early stage of Indo-European studies.

This trend produced studies, dating to the middle and especially late nineteenth century, which have remained significant to the present day. Such investigations were often called examples of linguistic palaeontology, after Pictet, who analyzed (1859-63) ancient Indo-European culture on the basis of linguistic data.

This trend in linguistics might better be called 'linguistic palaeontology of culture' since its object of investigation is not the proto-language but the proto-culture of the speakers; what is reconstructed is not so much the language itself as the extra-linguistic world reflected in the linguistic data.

The Saussurean principle of studying language 'in and for itself' became standard in the subsequent decades, causing a decline in language-and-culture studies and narrowing the focus of linguists' attention to the structure of language. This restriction to structure alone is beginning to shift, as of the past several decades, to the study of language, viewed as a product of human culture, in close linkage with culture and with the history of its speakers as a frame of reference.

This development entails that the study and reconstruction of lexical semantics and the distribution of lexemes among the daughter languages are of particular importance to the structure and history of the proto-language. The lexemes themselves, once we have reconstructed their original semantics, yield evidence for the ecological and cultural environment of the daughter languages, give a first approximation to aspects of material and spiritual culture, and point to changes in their environment brought about by migrations of the daughter languages.

Comparison of formally cognate words from the daughter languages and their attested meanings yields reconstructions of both proto-forms and proto-semantics. These lexical archetypes may go back to proto-linguistic times and be posited for the proto-linguistic system; or they may belong to the various chronological layers reflecting dialect groupings within the proto-language.

Comparing the reconstructed forms and meanings makes it possible to discern lexico-semantic fields. These fields define sets of semantically grouped lexemes which designate extra-linguistic classes such as animals, plants, construction and dwellings, handicraft tools, and others.

Proto-linguistic lexemes naturally reflect the general features of the environment, material existence, and culture of the speakers of the daughter languages. These same lexemes provide the oldest lexical stratum of a proto-language and its separate branches. A classificatory lexicon of the proto-linguistic semantemes may be set up in individual semantic fields, bringing in what-

ever information about the possible historical denotata of these lexemes is essential to shed light on the ecological environment and culture type of the speakers of the daughter dialects.

Such a proto-linguistic lexico-semantic system can be reconstructed through comparison of cognate forms in the daughter languages. Comparing this system with extra-linguistic reality, we obtain an approximation to a general picture of the economy, material culture, and social organization of the speakers of the proto-language or its dialect groups. The posited general picture can give historical reality through typological comparison with actual cultures of the past and present. This is a typological verification of a reconstructed culture against attested cultures. In verifying a reconstructed culture, and in particular its material side, archaeological facts which demonstrate the typological plausibility of the reconstructed material culture receive a particular significance.

The comparative semantic analysis of words from separate daughter dialects of a proto-language and text fragments in separate daughter traditions, together with the method that may be called 'linguistic palaeontology of culture', makes it possible to reconstruct a semantic lexicon of the proto-language and a picture of proto-culture of the speakers of the proto-language or its dialect groups. This points to a possible original homeland and suggests routes of migration, by which speakers of the proto-language or its dialects may have reached their historical territories.

Determining the homeland requires, first of all, that we establish an absolute chronology, at least an approximate one, for the migrations. This can be done by demonstrating affinities between the linguistically reconstructed culture of the proto-speakers and particular archaeological cultures. This leads to the question of how one correlates linguistic data with archaeological and historical cultural data. Specifically, it raises the question of whether a particular linguistic community can be correlated with a particular archaeological culture. Presumably a linguistic system can be correlated with a culture if the culture yields the same realia as the language does: the realia are identical in their elementary composition and the interconnections among the elements are identical.

Fulfilling this task requires working out a typology of archaeological cultures, with implicational relations

between individual units of material culture. If the implicational rules for a culture coincide with those for the culture reconstructed from linguistic data, then the identification of the two cultures becomes more plausible. Certain elements and features of the cultures may fail to coincide, but essential requirement is that whole complexes coincide and that there are no incompatible traits.

Since the reconstructions — both linguistic and historical — are necessarily incomplete, failure of individual components to coincide is no obstacle to their historical identification. With limited and incomplete reconstructions, the size of the one complex (A, reconstructed linguistically) can be either greater or less than that of the other (B, established archaeologically). We can also have intersection of the complexes, with a large or smaller portion of either the archaeological culture B' or the linguistic culture A' outside the common part AB. It is essential that the non-coinciding parts A' and B' not contain features which are incompatible in view of implications internal to the two complexes (as for instance if an element of A entailed that the entire reconstructed system A contain some feature which is incompatible with a feature which either is reconstructed for part B or is implied by other elements in B).

When the question of the original territory of the common language and the identification of its linguistically reconstructed culture with an archaeological culture is posed in this way, the task of the linguist is to provide a systematic semantic analysis of all reconstructed words and phrases, which point to individual features of material and intellectual culture that can typologically distinguish culture from others. Such an analysis requires that the reconstructed words and phrases be linked to denotata and that the cultural-ecological and historical-geographical characteristics of those denotata be determined.

Taking into account the linguistic and culture-historical data we can locate the Indo-European community somewhere in the Near East and most likely on the northern periphery of Southwest Asia, i.e. somewhere from the South of the Southern Caucasus to Upper Mesopotamia. This is where linguistic and cultural contacts could have occurred in the fourth millennium BC between Proto-Indo-European and Semitic, Sumerian, South Caucasian, and other languages of the ancient Near East. Contact with some of these languages, par-

ticularly South Caucasian and Semitic, can be assumed to involve close interaction, in some cases of a substratal nature, over a long period of time within a single culture-historical and linguistic area.

The main question associated with the problem of the actual existence of a common Indo-European protolanguage in space and time is the question of chronology and the territory occupied by the Proto-Indo-European, this lower chronological limit *post quem non* is the turn of the third to the second millennium BC, when we find the earliest evidence of Hittite and other Anatolian languages.

It may be concluded from Anatolian onomastics of the Cappadocian tablets dating from the turn of the third to the second millennium BC that the various Anatolian languages underwent an extremely long period of development and formation after they had become distinct from one another; this period postdates the time when the Anatolian family had become differentiated from Proto-Indo-European.

This means that the differentiation of the Anatolian family of languages from the Indo-European protolanguage, and thus the beginning of the breakup of the protolanguage, must be dated to a period not later than the fifth-fourth millennium BC, and possibly much earlier.

Establishing an original territory for the Proto-Indo-European language and people raises the question of identifying an archaeological culture within the Near East and Southwest Asia that can be associated with Proto-Indo-European.

It must be noted at the outset that there is no archaeological culture in the area and time period indicated that can clearly be identified as Proto-Indo-European. We can only speak of possible connections, direct or indirect, of known Southwest Asian archaeological cultures of the relevant time period with Indo-European. Such connections of ancient cultures with the reconstructed features of Proto-Indo-European intellectual and material culture could serve as indirect evidence for the general possibility of identifying them with Indo-European. And in relevant areas of the Near East of the fifth to fourth millennia BC we do find a number of cultures exhibiting great similarity to certain features of the reconstructed Proto-Indo-European culture.

Similarity of culture, and especially of symbolism, can be observed between Halaf in northern Mesopotamia and Çatalhöyük in western Anatolia of the sixth millen-

nium BC. Whole inventories of cultural, and in particular cultic, symbols can be said to coincide.

The culture-historical links between the Halaf culture and the earlier Çatalhöyük culture could be interpreted as due to migration of the Çatalhöyük culture from Asia Minor in the direction of Northern Mesopotamia in the sixth to fifth millennia BC. Under this interpretation, the Çatalhöyük culture could be traced to an ancient stratum of the Proto-Indo-Europeans who migrated toward the east. This yields a deep chronology for PIE (seventh-fifth millennium BC).

Establishing the original habitat of the Proto-Indo-Europeans in Southwest Asia changes totally the traditional picture of the routes of migrations of the carriers of the Indo-European dialects to the historical areas of their habitation. We are especially concerned here with the routes of migrations of the Proto-Greeks to mainland Greece through Anatolia in a westward direction and of the Indo-Iranians from the same original habitat in Anatolia in eastward direction until the ancient Indic tribes reached Hindustan and the Indus valley.

Population-genetic consideration of inherited immunological properties gives another perspective on the hypothesis of an eastward migration into India. For Asia Minor and the other eastern Mediterranean countries a correlation is assumed between the range of malaria (from southern Greece and Asia Minor eastward to Hindustan) and a hereditary variant of the haemoglobin molecule which triggers sickle-cell anaemia: the sickle-cell gene under heterozygous conditions increases the organism's resistance to malaria. This hereditary factor took on particular significance with the spread of agriculture, when moist forests began to be cleared for fields, leading to an increase in the number of mosquitos. If the ancient Indic tribes entering Hindustan had not had genetic resistance to malaria, they could not have survived there. Hence an entry into India from the west, from the Southwest Asian sickle-cell area, is more plausible than the traditionally assumed migration from Central Asia to the north, where there is no sickle-cell anaemia.

Further evidence for this is the nature of skeletal remains of the ancient population of these regions. According to recent craniological data, a recurrent cause of death in the population of regions such as the Indian subcontinent (in particular the ancient cities of Proto-Indic civilization Mohenjo-Daro and Harappa) and some of the southernmost parts of the European continent (the southern extremities of the Peloponnesian and Apennine peninsulas) was the after-effects of malaria epidemics, which triggered defects of bone tissue in the skull (porotic hyperostosis) in broad segments of the population. Significantly, almost all of the pre-Indo-European population of these regions had precisely this type of skull.

It is highly likely that the Indo-Aryan tribes arriving in Hindustan and the Greek and Italic tribes arriving in the southern parts of Europe, who do not display such craniological characteristics, had hereditary immunity to malaria and its lethal consequences. Such an immunity could have been acquired only in the area where tropical malaria is found, which excludes all of the northern part of the original range of the Indo-European tribes in Eurasia.

All these problems are dealt with at length in our joint two-volume monograph on the Proto-Indo-European language, the Proto-Indo-European culture and the Indo-European migrations.

The monograph contains a relatively complete Proto-Indo-European vocabulary reconstructed along new phonological patterns and arranged in different semantic groups covering the geographical surrounding of the carriers of the Proto-Indo-European language, the plant and the animal world, the social and cultural environment, and a wide spectrum of the Proto-Indo-European physical, biological and socio-economic reality. It is on the basis of this reconstructed Proto-Indo-European vocabulary and their historical semantic interpretation that conclusions are being made concerning the time depths and the routes of Proto-Indo-European migrations (cf. Gamkrelidze & Ivanov 1995).

*ენათმეცნიერება***ენათმეცნიერება და კულტურის პალეონტოლოგია****თამაზ გამყრელიძე**

*აკადემიკოსი, გიორგი წერეთლის სახ. აღმოსავლეთმცოდნეობის ინსტიტუტი
საქართველოს მეცნიერებათა ეროვნული აკადემია*

ხალხთა არქაული კულტურების შესწავლა შესაძლებელია წმინდა ენობრივი მონაცემების საფუძველზე, მონათესავე ენების შედარებისა და ფუძე-ენის ლექსემა სემანტიკური რეკონსტრუქციის გზით, რასაც ტრადიციულად „ლინგვისტური პალეონტოლოგია“ ეწოდებოდა. რამდენადაც შესწავლის ობიექტს ასეთ შემთხვევაში წარმოადგენს ხალხთა არქაული კულტურები და არა მათი უძველესი ენები, კულტურის კვლევა-ძიების ამ მეთოდს უფრო კანონზომიერია ეწოდოს არა „ლინგვისტური პალეონტოლოგია“, არამედ „კულტურის ლინგვისტური პალეონტოლოგია“; იგი უნდა განიხილებოდეს არა წმინდა ენათმეცნიერების ფარგლებში, არამედ როგორც კულტუროლოგიის გარკვეული დარგი, როგორც ხალხთა არქაული კულტურების რეკონსტრუქციისა და შესწავლის ერთ-ერთი საშუალება.

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