Lexical Data and Universals of Semantic Change

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Diachronic cognitive onomasiology and semantic reconstruction

The search for cognitive universals that could influence lexical diachrony requires the use of language samples which are as extensive and as broadly distributed as possible and which can be scanned for polygenetic parallels according to onomasiological criteria. The father of cognitive onomasiology *avant la lettre*, Carlo Tagliavini, demonstrated this with the example of designators for the concept PUPIL with a large sample of languages (Tagliavini: 1949; Koch: 1997, 240). With this procedure, the target concept, diachronically speaking, of each "tested" language is onomasiologically predetermined. The target concept CHIN, for example, is expressed in Sardinian by the word *barba* (1). The source concept, then, emerges from the individual language history. In this case we would find as predecessor Latin *barba* expressing BEARD (DES, I, 176); between the source concept and the target concept there exists a relation of contiguity, such that one can speak of "metonymy".[1]

(1)   Sardinian *barba* CHIN

    ↑

    Latin *barba* BEARD
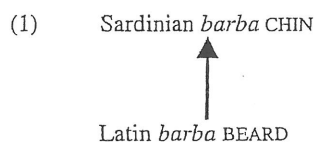
1. Semantic (cognitive-associative) relations

As example (1) shows, what is fundamental to a diachronic onomasiology are semantic developments which can be understood through cognitive relations between concepts.[2] We then need, in addition to a web of target concepts, a set of cognitive relations, each of which can be situated between a pair of target and source concept. Here the traditions of rhetoric, historical semantics, and associational psychology, as well as Gestalt psychology, phenomenology, and cognitive psychology provide us with a number of analytical categories and theoretical models, which revolve time and again around the same relations,[3] such that these relations – unlike the "relationalized" concepts – can indeed be considered universal.[4] The fundamental categories, on which all further distinctions are based, are the associative relations differentiated by Aristotle (1975, 300 = *De memoria et reminiscentia* 451b):

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[1] Unless stated otherwise, all data are taken from the project "Lexical change – polygenesis – cognitive constants: The human body" (*LexiType_Dia*) of the Collaborative Research Centre (Sonderforschungs-bereich) 441 "Linguistic Data Structures" in Tübingen.

[2] For the status of such concepts, see Koch: 2003b.

[3] Cf. for example Amin: 1973; Blank: 1997a, 131–156; Holenstein: 1972; Jakobson: 1956; Koch: 1991; 1995; ms.; Köhler: 1947; Raible: 1981; Ullmann: 1962, 211–227; Wertheimer: 1922/23.

[4] These relations thus "direct" semantic change as a kind of "invisible hand" (see Section 3 below).

(α) contiguity;

(β) similarity;

(γ) contrast.

On the basis of these associative relations, we can define a set of more complex cognitive-associative relations for the relationalization of concepts. The following inventory of such relations seems to be universal (cf. Blank: 1997a, 146–344; 2001, 43–44, 74–93; Koch: 2000, 81–83; 2001a, 1144–1145, 1158–1159; 2001b, 18–20; Gévaudan: 2003a):

- *identity* as an extreme case of similarity (β);
- *contiguity* (α) as the relation which underlies the "engynomic" aspect of conceptual hierarchies, i.e. the relationship between frames and their elements or between two or more elements of the same frame, for example that between TREE, FRUIT, WOOD, SHADOW, TO PLANT etc. in Fig. 1 (cf. Barsalou: 1992; Koch: 1995, 29, 40–41; 1999a, 144–153; 2001c, 202–204, 214–218);
- *metaphorical similarity* as the type of similarity (β) which – deliberately across to frames and taxonomies – maps new concepts onto existing ones (cf. Lakoff / Johnson: 1980; Liebert: 1992; Koch: 1994);
- *taxonomic similarity* as the type of similarity (β) which connects concepts of the same level of hierarchy within a taxonomy, for example OAK, FIR, APPLE-TREE, etc. in Fig. 1;
- *taxonomic superordination* as found within Fig. 1, for example between OAK and TREE, between FIR and TREE, or between APPLE-TREE and TREE. The taxonomically superordinate concept emphasizes the similarity (β) between subordinate concepts at the expense of at least some of the contiguities (α) specific to them (part-whole relationships, properties, etc.);
- *taxonomic subordination* as found within Fig. 1, for example between TREE and OAK, between TREE and FIR, or between TREE and APPLE-TREE, representing the reverse of taxonomic superordination. In relation to the superordinate concept, the taxonomically subordinate concept foregrounds contiguities (α) (part-whole relationships, properties, etc.) specific to the subordinate concepts and backgrounds similarity (β) with concepts that are taxonomically at the same level;
- *contrast* (γ).[5]

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[5] Here I do not consider a – possible and important – differentiation among types of contrast (cf. Blank: 1997a, 220–229; 2000, 68; 2001, 92).

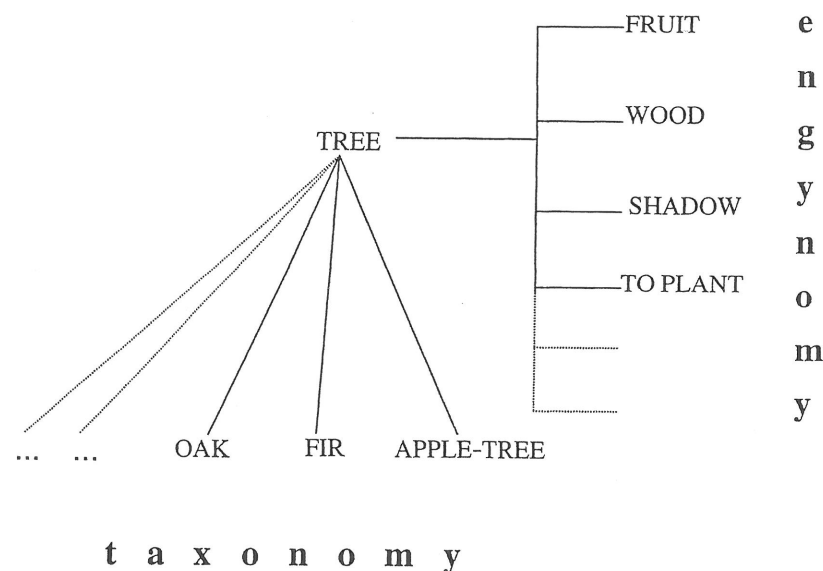Fig. 1: *Taxonomic and engynomic hierarchies around the concept TREE*

2. Data typology

The cognitive-associative relations listed at the end of the preceding section "direct" lexical-semantic change like an "invisible hand" (as understood by Keller: [2]1994). However, this is only true in the sense of what I would call the "weak hypothesis of the invisible hand in lexical change". From a semasiological perspective, it can only be predicted that, for each process of semantic change that may start out from a given source concept, one of these universal relations (which are limited in quantity) is always involved. However, it cannot be predicted which one that will be, and especially not which will be the specific target concept. In contrast, a "strong invisible hand hypothesis" is only thinkable from an onomasiological perspective: according to this hypothesis one could start with a given target concept and predict from which source concept (and via which relation) a lexical change will be likely to take place. As a rule, there are several plausible concepts, finite in number, which could be the source concept (cf. Koch: 2000, 75–77, 79–81; 2001b, 13–14, 25–26).

The *LexiType_{Dia}*-Project is dedicated to the empirical examination of this "strong hypothesis". The goal of the project is to analyze 26 target concepts within the frame HEAD using a diversified sample of languages. Of course, the question as to which types of data are to be considered for this diachronic analysis is of decisive importance for the empirical work. It makes sense to categorize the linguistic data at least according to the

following four aspects (cf. Ehrich: 2001; Koch / Steinkrüger: 2001, 531–535; Koch: 2003a; Pafel: this volume, 57–59):[6]

① *Data collection*: We shall distinguish between data which are *discovered* by the linguist and those which they have to *elicit*. In very few cases, the discovered data "impose themselves" so to speak upon the linguist, for instance when they pick up on a form which appears interesting to them in a conversation or when an interesting semantic effect on a billboard catches their eye. As a rule, however, the linguist must go on a search by analyzing grammars and dictionaries, examining written sources, recording conversations, etc. It is important to note that the discovered data would have been produced even without the involvement of the linguist; with elicited data the linguist alone is responsible for their existence, for example by questioning informants or themself. There is also a "hybrid" form – *manipulated* data which emerge while under observation in circumstances intentionally "configured" by the linguist, but without their direct intervention ("corpora" can also be produced in this way: cf. Reich: 2002, 35–37; Oesterreicher: 2001, 1570).

② *Subject-object relation*: Linguists, as subjects of knowledge, investigate the linguistic behavior of speakers as the objects of knowledge (or reflexes of their behavior in reified form). Since linguists are themselves speakers and speakers potential linguists, subject and object can coincide, namely when the linguist or the speaker examines their own linguistic competence. In that case, they are collecting *introspective* data. If, in contrast to this, subject and object remain separated from one another, the resulting data can be labeled *extrospective*, for instance when the linguistic behavior is registered by speakers other than the linguist or when grammars and dictionaries (not authored by the linguist themself) are analyzed.

③ *Degree of accessibility*: Data can vary in degree of accessibility to the linguist. This simply has to do with the preferences of our faculties of perception, our possibilities of interpretation, and our limited life spans. There is, then, a continuum of degrees of accessibility, depending on the interaction of multiple parameters (see the horizontal axis in Fig. 2). Contextualized data are more accessible than de-contextualized data, visual data more accessible than acoustic data, static data more accessible than dynamic data, contemporary data more accessible than those from the past, synchronic data more accessible than diachronic data, etc.[7]

④ *Degree of elaboration*: There is obviously a long line of processes of elaboration between the collection of language data and its linguistic interpretation. Epistemologically, however, it would be naïve to assume that one could simply define a "minimal" degree of elaboration, i.e. determine in a given case something like a primum datum or a "raw datum". One would easily slip into an infinite regress here because no matter how "primary" a datum may appear, one can always assign it yet another step of elaboration conditioned by some method or theory on the part of the linguist. The audio recording of a conversation, for example, precedes the transcription of the conversation; however, the audio recording itself is preceded by other steps of elaboration etc. To avoid such a regress, there remains only the possibility indicated in the vertical axis of Fig. 2, namely a scale of degrees of elaboration

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[6] The differentiation Stubbs (1996, xv. 4, 28ff.) attempts to make between A data ("attested, actual, authentic data") and I data ("intuitive, introspective, invented data") corresponds with two prototypical clusters which can be further factorized according to the typology used here: A = discovered + extrospective vs. I = elicited + introspective. Of course, there are also elicited + extrospective data (with a corresponding experimental set-up) and discovered + introspective data (meta-linguistic judgments which the linguist comes across in statements by the speaker).

[7] It should be emphasized that the parameter "past–contemporary" is not at all identical with the "diachronic–synchronic" one. It is well known that there are also past *and* synchronic data (synchronic description of earlier language stages).

which is open both toward the top and toward the bottom (the indices with ... i, j, k, l, m, n ... indicate that we are somewhere in the middle of this scale). Working from the bottom, it is nevertheless possible to identify, at one point on the scale, a degree of elaboration k for which a linguistic categorization, or meaning, or function is assigned to linguistic types (and not just to tokens) for the first time. This is undoubtedly a crucial point, although the degrees of elaboration which lie beneath k are not thereby devalued, as they could involve other important linguistic steps of analysis or essential operations belonging to disciplines closely related to linguistics (paleography, textual criticism, sociology, phonetics, etc.).
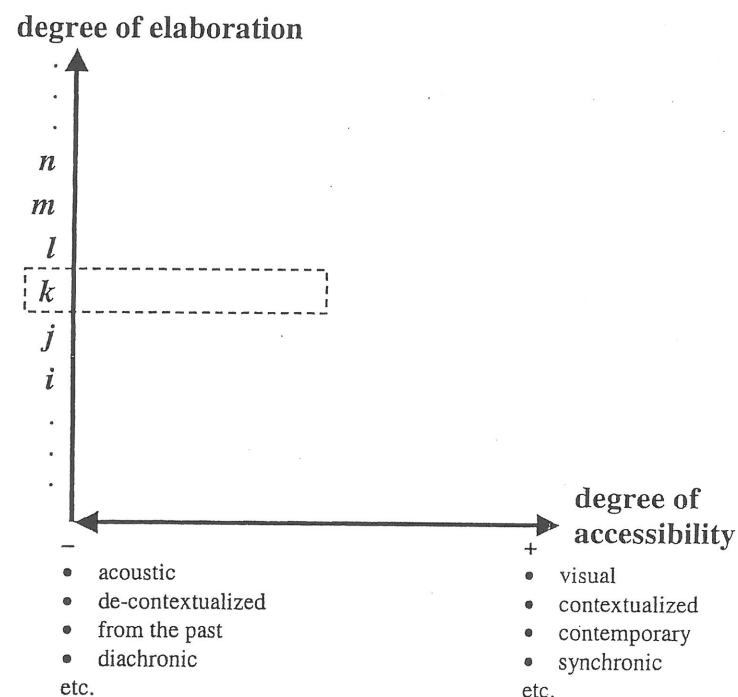
Fig. 2: *Degrees of accessibility* (③) *and elaboration* (④)

The input data of the *LexiType$_{Dia}$*-Project can be characterized precisely according to this typology:

❶ *Data collection*: For the most part the data are of the discovered kind, having been collected from dictionaries and lexicological publications. They are therefore as reliable as the sources used (see also note 12). The possibility of "elicitation" (which is of course not possible for data from the past) can only be used to supplement and consolidate the analysis of previously discovered contemporary data.

❷ *Subject-object relation*: The data are entirely extrospective.

❸ *Degree of accessibility*: The entirely visual and static nature of the data enhances their accessibility (the graphical representation of the words studied and of their meanings is fully sufficient for the work of the project). The degree of accessibility is reduced, however, by the dictionaries' form of presentation, which is to a large extent (though not completely) de-contextualized. With regard to chronological classification, both contemporary (and therefore relatively accessible) and past (less accessible) data are involved in this diachronic project. It is obvious that with a semantically oriented project, it is particularly the de-contextualized presentation of only historically existent meanings that poses problems. Here one must rely upon the contextualization given by dictionary authors (who have for example analyzed historical texts). In addition, the discernible risk factor must be reduced as much as possible (see below, note 12). The peculiarities of synchronic and diachronic data will be discussed in detail in 3.

❹ *Degree of elaboration*: Since the project works from types with meaning descriptions given in dictionaries or lexicological publications, it starts at the degree of elaboration *k*. As has already been shown in the preceding points, the quality of the data at the *k* level depends on the quality of any preceding steps of elaboration (by text editors, dictionary authors, etc.). The task of the project itself consists in refining the *k* data, i.e. to produce data of higher levels of elaboration through the application of the theoretical and descriptive apparatus, and in accordance with the considerations outlined in Section 2.

3. The distinctiveness of diachronic and reconstructed data as data types

The data-typological aspects ①–④ discussed in Section 2 (and their possible sub-aspects) form a cross-classification. In places, however, it has already become clear that not all of the combinations one could logically think of are actually possible. The elicitation of historical data is, by definition, ruled out. Furthermore, the acoustic and dynamic presentation of such data is in fact only possible for the time period since the invention of audio and video recording. Today's linguists find the language data of the past, for the most part, in visual-static (graphic) form only. As already indicated, this does not present a problem for the *LexiType*$_{Dia}$-Project. But it is worth considering the fact that the project is to a large degree based on diachronic data. Here are some examples which are described according to the three-dimensional format[8] usual for this project ((1') shows our first example (1) in this format):[9]

(1')   Sardinian *barba* CHIN   (= target datum *y*)

            ↑
            <contiguity.zero.stratum<

      Latin *barba* BEARD   (= source datum *x*)

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[8] Within the bracket format <sem.morph.strat<, the cognitive-associative ("semantic") relation is in first place ("sem"), in accordance with the relations introduced in Section 1, the morphological-formal relations between the contemporary target word and the source word is in second place ("zero" indicating that it is the same word, which has merely undergone a change in meaning), the relation between different strata of the vocabulary ("strat") is in third place ("stratum" indicating that it is not a borrowing). On this bracket format, cf. Koch: 2000, 85–89; 2001b, 22–25; Gévaudan / Koch / Neu: 2003, 7–8; Gévaudan: 2003a; 2003b, 201–209.
[9] Cf. note 1.

(2)   Modern Greek *piyúni* CHIN   (= target datum *y*)

       ↑
       <contiguity.zero.stratum<

      Ancient Greek *pōgṓn-ion* LITTLE BEARD (= source datum *x*)

(3)   Hausa *haɓà* CHIN   (= target datum *y*)

       ↑
       <contiguity.zero.stratum<

      Proto-Chadic *g-z-* BEARD   (= source datum *x*)

(4)   Hungarian *szemöldök* EYEBROW   (= target datum *y*)

       ↑
       <contiguity.suffixation.stratum<

      Hungarian *szem* EYE   (= source datum *x*)

(5)   Upper Sorbian *wočko* EYE   (= target datum *y*)

       ↑
       <taxonomic superordination.zero.stratum<

      Upper Sorbian *wočko* LITTLE EYE (= source datum *x*)

(6)   Albanian *mollëz* CHEEK   (= target datum *y*)

       ↑
       <metaphorical similarity.zero.stratum<

      Albanian *mollëz* LITTLE APPLE (= source datum *x*)

The arrow indicates the direction of the diachronic development from the source datum *x* (bottom) to the target datum *y* (top), in accordance with the formula *x* > *y*. With regard to methodology, it should be noted that, with the onomasiological perspective selected here (cf. Koch: 2000, 77–81; 2001b, 14–17; Blank / Koch: 2003b, 1–8), one is working backwards (retrospectively) from the target datum *y* towards the source datum *x*, in accordance with the formula *y* < *x*.[10]

In the cases (1'), (2), and (3), a metonymic change in meaning takes place between the source concept (LITTLE) BEARD and the target concept CHIN, in (4) a word formation process (suffixation) which functions via the contiguity between the source concept EYE und the target concept EYEBROW, in (5) a generalization of meaning between the source concept LITTLE EYE and the target concept EYE, in (6) a metaphorical change in meaning between the source concept LITTLE APPLE and the target concept CHEEK (in each case the change takes place within the stratum). The material in (1'), (2), and (3) appears to be especially interesting for the search for polygenetic parallels, because in three languages without any genetic or geographical connection the word for CHIN comes, via the same bridge of contiguity, from a word for (LITTLE) BEARD.

Such observations are possible through the chosen standardized structure of elaboration of the diachronic data material. The parallelism between (1') and (2) is in

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[10] In detail, a four-step procedure is applied: target concept → target word → source word → source concept. For this procedure, cf. Koch: 2003a, 163–164; Gévaudan / Koch / Neu: 2003, 5.

fact a strong argument for a polygenetic development. One is tempted to apply the same reasoning to the relationship between (1') and (3) or between (2) and (3). These apparently "natural" parallels are, as will be shown, treacherous from a methodological point of view.

For this purpose, one must understand what status diachronic data have in the scale of degrees of elaboration shown in Fig. 2.

First, diachronic statements by linguists are fundamentally statements about types. This simply has to do with the question of what we are to understand by the terms "linguistic change" and "diachrony". As Eugenio Coseriu (1958, 44–46) points out, in linguistic change one must distinguish between the first, individual step of "innovation" and the phase of "adoption" which may follow. The linguistic change is considered to have taken place only when adoption has occurred in a language community or in one variety of a given language. A token documents at most – and with luck – an individual act of innovation or otherwise a snapshot of an adoption process or of the normal usage of a type. Accordingly, for diachronic statements it would not be sufficient to arrange in sequence two (or more) tokens which have been collected from chronologically successive texts. Should something have "changed" between a chronologically earlier token and a later one, this could theoretically be just an act of innovation or some other snapshot. This means that, for diachronic statements to be relevant at all for the study of linguistic change, they must always at least claim to detect changes between types (even when the data sometimes allow only the registration of some isolated tokens, from which statements about the types involved are extrapolated, which represents in itself an additional step of elaboration). In this respect, diachronic "data" that are normally described in the form of $x > y$ can never be positioned below the k level in Fig. 2, since x and y at least claim to stand for linguistic types to which a linguistic categorization or meaning, or function, is assigned.

In addition, in the formula $x > y$ or its reverse $y < x$, the true diachronic process of change is hiding behind the ">" or "<" sign.[11] This process as such is simply not directly observable. There is no degree of elaboration of language data which is low enough to allow us to "witness" it. In any case, the diachrony of past periods is not directly accessible to the speaker and linguist of today. In every case, the macrodiachrony eludes their experience, because while it potentially reaches into their lifetime, it also stretches beyond it. The linguist may be able to observe the microdiachrony of their own time, but even here the true process of change is not directly accessible to them. At best they can interpolate it extrospectively, perhaps also introspectively, from the comparison of synchronically perceived data (at times t_n vs. t_{n+1}). This means, however, that diachronic data, whether macrodiachronic or microdiachronic, whether historic or current, are based as a matter of principle on synchronically observed or elicited data, between which a diachronic process is interpolated.

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[11] From now on I shall use the retrospective form $y < x$ because it corresponds to the perspective of the project. For the discussion of principles below, it is irrelevant whether the prospective or retrospective form is applied.
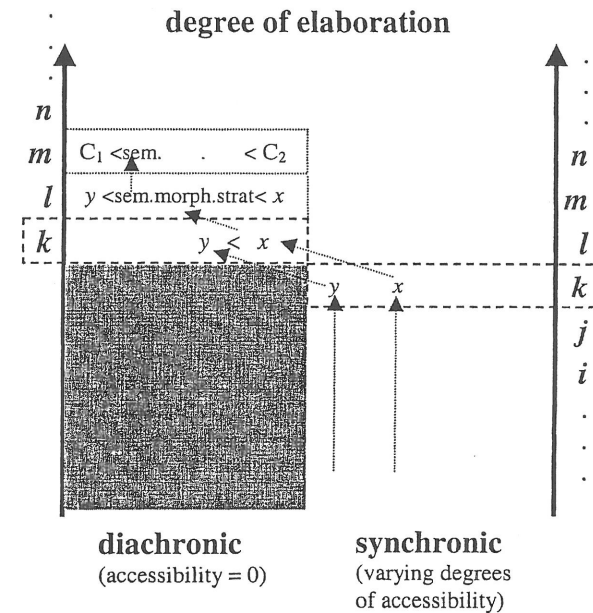
Fig. 3: *The distinctiveness of diachronic data as a data type*

Thus, one finds a deep asymmetry (represented in Fig. 3) between synchronic data and that which we are used to calling "diachronic data" of the form $y < x$. In this point there is a close connection between the degree of accessibility (③) and the degree of elaboration (④). While synchronic data of different degrees of elaboration can have different levels of accessibility (depending on the other parameters discussed in Section 2), the truly diachronic side of the diachronic data (symbolized by "<") has an accessibility of zero. The establishment of a diachronic filiation is fundamentally an interpolation by the linguist on the basis of two synchronic data x and y, which for their part show a level of elaboration of at least k, representing thus linguistic types to which a linguistic categorization or meaning, or function, is assigned. The entire scale of degrees of elaboration (with varying degrees of accessibility) for synchronic data is shown in the right half of Fig. 3, while a sudden start at the degree of elaboration k for diachronic data of the type $y < x$ is shown in the left (because lower degrees of elaboration that can sensibly be called "diachronic" do not exist). Since the linguist yet has to "create" data of the type $y < x$ by interpreting two synchronic, chronologically successive data x and y (with a degree of elaboration of at least k) and interpolating a filiation between them, the scales of the degrees of elaboration of synchrony and diachrony are logically out of line with each other. As a result of the elaboration of data

of the synchronic k level, the k level of diachrony necessarily lies one level higher than the synchronic k level (and is thus *de facto* comparable with the synchronic l level).

Of course we know that in the linguistic reality the diachronic transition from x to y is a continuous one, but epistemologically this transition remains a black box (which can be imagined behind the gray-shaded area in Fig. 3). The elaboration through which the diachronic datum $y < x$ is made "visible" is a completely legitimate step, provided the linguist can give plausible arguments for this filiation (chronology; geographic distribution; phonetic, morphological, or semantic continuity; etc.).

Once a diachronic datum of the type $y < x$ is created at the k level, further degrees of elaboration can of course follow from this basis. This is precisely the primary task of the *LexiType_Dia*-Project. Diachronic data of the type $y < x$, such as example (1) cited at the beginning, are taken from dictionaries, where they are already given.[12] The first major goal of the project is to fill the filiation ("<"), which the dictionary gives only as a matter of fact, with linguistic categories of analysis, such that a "refined" diachronic datum of the form y <sem.morph.strat< x is developed at the next higher level of elaboration (l) (cf. Fig. 3, left half). This degree of elaboration corresponds to the examples presented in (1'), (2), (4), (5) and (6), in which the cognitive-associative, morphological-formal, and stratificational relations between target datum and source datum are lexicologically classified.[13]

A possible further step of analysis in the project is to extract an overall conceptual schema of the form C_2 <sem. ... .< C_1 from the comparison of the data in (1') and (2) (in this case CHIN <contiguity. ... .< (LITTLE) BEARD). A further degree of elaboration m would thereby be reached.

Let us recall briefly the semantic elaboration steps in cases such as (1') and (2): at the synchronic k level, the datum y (= Sardinian *barba* or Modern Greek *piɣúni*) is assigned a conceptual meaning C_2 (in both cases CHIN), while the datum x (= Latin *barba* or Ancient Greek *pōgṓn-ion*) is assigned the meaning C_1 (in both cases (LITTLE) BEARD), which we note in Fig. 4 as y/C_2 and x/C_1. At the diachronic k level, these meanings C_1 and C_2 go into the description of the filiation $y < x$ and are thus passed on to the diachronic l level CHIN <contiguity. ... .< (LITTLE) BEARD and possibly to the m level. One should note that, from an empirical perspective, C_1 and C_2 originate from the same level of elaboration (k synchronic). Their reliability depends on the precise synchronic observation and interpretation of the linguistic state by the authors of the dictionary or dictionaries used, requiring lower levels of elaboration j, i, etc., for example the analysis of text corpora, the questioning of informants (in the case of contemporary data), etc. (see also note 12).

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[12] With regard to the problem of the reliability of these data, addressed in Section 2 under ❶ and ❸, one can now state more accurately: they are reliable to the extent that one can trust the solidity of the elaboration of synchronic k data (y and x) into diachronic k data ($y < x$) by the dictionary authors. Of course, a part of the work of the *LexiType_Dia*-Project consists in checking this reliability (for example, by comparing different dictionaries or other sources of information, as far as possible).

[13] In the interpolation of cognitive-associative relations, the linguist must explicate their semantic intuition.

Fig. 4: *Elaboration steps for diachronic data*

This is made clear again in Example (2) by giving the respective degrees of elaboration:

(2') y = Modern Greek *piɣúni*/C_2 = CHIN ← synchronic k level

diachronic k level → <contiguity.zero.stratum< ↑ diachronic l level (diachronic-lexicological classification)

x = Ancient Greek *pōgṓn-ion*/C_1 LITTLE BEARD ← synchronic k level

Only at first glance does it appear that a data set such as (3) has a completely parallel structure to the diachronic data sets (1') and (2)/(2'). In the Proto-Chadic starred form $*x$ = g-z- in (3), however, the meaning C_1 = BEARD reconstructed in the dictionary (HCD) is problematic, as it has a completely different data status to C_1 = (LITTLE) BEARD in Latin *barba* (1') and in Ancient Greek *pōgṓn-ion* (2)/(2'). What exactly does "reconstruction" mean? As shown in (3'), only the Hausa datum y is available at the synchronic k level (there are also a number of comparative data from other languages, for instance: y'/C_2' = Songai *kāba* BEARD, y''/C_2'' = Egyptian *khabs* BEARD, y'''/C_2''' = Kamwe *guɓi* BEARD). If the linguist makes in this case statements such as $y < *x$, $y' < *x$, $y'' < *x$, etc. at the diachronic k level, then $*x$ remains initially unknown but stands for the hypothesis that the languages that the data y', y'', etc. came from are related to Hausa and that all of them can be traced back to a single proto-language, so that y, y', y'', etc. are cognates. The reconstruction of the form and of the proto-meaning $*C_1$ = BEARD from $*x$ represents a further step of elaboration, which leads us to the diachronic l level. To make this point very clear: $*C_1$ (with asterisk!) simply does not exist below the l level.

(3') y = Hausa *haɓā* /C_2 = CHIN ← <u>synchronic k level</u>

<u>diachronic</u> | <contiguity.zero.stratum<
k level   → | ↑
                        <u>diachronic l level</u> (diachronic-lexicological classification)

x = Proto-Chadic/C_1 = *g-z-* BEARD ← <u>diachronic l level</u> (reconstruction)

A statement of the form y/C_2 <sem.morph.strat< x/C_1 also belongs to the diachronic l level, provided it elaborates further on a diachronic datum of the form $y/C_2 < x/C_1$ by assigning to it a diachronic-lexicological classification. The fact that the concepts C_2 and C_1 at level l are semantically relationalized through C_2 <sem. ... .< C_1 is of special interest to us. Methodologically, however, it would be wrong to insert at C_1 a reconstructed proto-meaning *C_1 which in degree of elaboration also belongs to a l level (reconstruction).[14] Thus, in a diagram such as (3'), we have a "mix" of data from different levels of elaboration, even though data at points y und x should come from the same level of elaboration. Put differently: in the process of lexicological-semantic elaboration yielding <sem. ... .<, the reconstructed proto-meaning *C_1 (an "output" of level l) is – strangely enough – treated as though it were the "input" of the same l level.

It necessarily follows that a diachronic lexicological-semantic classification on the basis of a merely reconstructed proto-meaning such as *C_1 is not legitimate. It becomes even more problematic when one draws from this lexicological-semantic classification (level l) even farther-reaching conclusions at the m level regarding polygenesis. The *LexiType$_{Dia}$*-Project concludes therefore that reconstructed proto-meanings *C_1 are not to be recognized as data of the diachronic k level and thus cannot become the "input" of lexicological-semantic classification at level l (cf. Koch / Steinkrüger: 2001, 537–541; Koch: 2003a, 164–166). Data sets such as (3), unlike (1') and (2), are therefore not used in this form. The precise working method of the project shall be addressed in Section 6.

4. The problem of semantic reconstruction

At the end of the last section, the conflict between semantic reconstruction and lexicological-semantic classification in diachrony became clear. However, one could argue that, regardless of this conflict, semantic reconstruction is in principle a legitimate activity of diachronists, just as much as phonological reconstruction, and that one must only avoid this conflict and recognize reconstruction as an operation of the l level.

Looking at the relevant literature on linguistic reconstruction (for example Baldi: 1990; Hock: [2]1991, 532–626; Fox: 1995; Hock / Joseph: 1996, 466–474, 488–503, 509–534; Campbell: 1998, 69–71, 108–148, 307–308; Trask: 2000, 275–276, 304; Rankin: 2003; Ringe: 2003; Durie / Ross: 1996, but Wilkins: 1996 in the same volume), one gets the impression that semantic reconstruction is seen as secondary to morphological, syntactic, and most of all phonological reconstruction and therefore less interesting. Fox notes:

[14] Note that the l level only designates a certain *degree* and not a *kind* of elaboration. Reconstruction and diachronic-lexicological classification are totally different kinds of elaboration, but they correspond to the same degree of elaboration in relationship to $y < x$ at the k level.

As a general rule [...] the starting point for lexical reconstruction is a set of equivalent items established on the basis of phonological correspondence. [...] It will be noted that it is not the meaning itself that is the main criterion for the initial identification of the set, but the phonological correspondences. The semantic correspondences are derived from the phonologically determined sets (Fox: 1995, 110–111).

Although Charles de Lamberterie speaks of a "dialectique de la forme et du sens" (Lamberterie: 2000, 118) in reconstruction, he emphasizes:

Even if semantic reconstruction is not identical to formal reconstruction, it contributes to it, and any progress in this latter field affects semantic analysis, because it allows us to place data in a more satisfactory manner. (Lamberterie: 2000, 114).[15]

Methodological considerations regarding semantic reconstruction relate, as a rule, more to the astuteness of the conjecture of idiosyncratic, often cultural or textual backgrounds of the respective word histories, and emphasize the methodological contributions of Emile Benveniste, whose approach we shall revisit in Section 5 (cf. Szemerényi: 1962; Watkins: 1990, 295–300; 1994; Bader: 1999; Lamberterie: 2000). Problems and types of semantic change such as metaphor, subjectification, etc., are indeed also addressed (cf. Fox: 1995, 114, 201–206; Bader: 1999, 45–50 and passim). As we have seen in Section 3, however, the relationship between semantic relations of the form <sem. ... .< and reconstructed proto-meanings *C_1 is particularly problematic.

Clearly, the practice of semantic reconstruction is methodologically less substantiated than the well-tried practice of phonological reconstruction (which shall not be discussed here at all). The question is: how does one come from the meanings C_2, C_2', C_2'', ... (from the synchronic k level) of a series of cognates y, y', y'', ... to the reconstructed proto-meaning *C_1 of the antecedent *x in the proto-language? Even if this is not discussed (or only superficially discussed) in the methodological texts, it is possible to deduce typical procedures from observing the practice in etymological dictionaries, procedures in which the associative(-cognitive) relations discussed in Section 1 can prove partly helpful.

4.1. The additive type
The simplest possible procedure can be seen in the following examples:[16]

(7)   C[ommon] K[artvelian] **berq-* 'leg, step': Georg. *pex-* 'leg'; Megr. [*bax-*]; Svan *bĕrq*, *bä(r)q*, *bāq* 'step'

(EDKL, 12)

[15] Original quotation: "Si la reconstruction sémantique ne se confond pas avec la reconstruction formelle, elle en est évidemment tributaire, et tout progrès dans ce dernier domaine rejaillit sur l'analyse sémantique, car on peut mettre ainsi les données en place d'une manière plus satisfaisante."
[16] Language abbreviations of (7): Georg. = Georgian, Megr. = Megrelian and (8): AAY = Alutiiq (Alutiiq Alaskan Yupik), CAY = Central Alaskan Yupik, NSY = Naukan(ski) (Naukan Siberian Yupik), CSY = Central Siberian Yupik, Sir = Sirenik(ski), SPI = Seward Peninsula Inuit, GRI = Greenlandic Inuit, EG = East Greenlandic (dialect of GRI).

(8)   P[roto-]E[skimo] $kəɣinaʀ$ 'face or blade' [...]

    AAY $xiinaq$ 'face'

    CAY $kəxinaq$ 'face, blade of knife'

    NSY $ɣinaq$ 'face'

    CSY $xinaq$ 'face, blade of knife'

    Sir $kəx$ 'face' [...]

    SPI $kiinaq$ 'face, blade or edge of knife'

    [...]

    GRI $kiinaq$, EG $kiiaq$ 'face, blade of knife' [...]

                                                          (CED, 165)

According to (7), we find the concepts C_2 = LEG or C_2' = STEP in modern Kartvelian languages in the cognates in question in Georgian, Megrelian, and Svan; according to (8), we find the concepts C_2 = FACE and/or C_2' = BLADE/EDGE (OF KNIFE) in the cognates in question in modern Eskimo languages. The dictionary author simply assigns to the reconstructed Common Kartvelian proto-form $*x$ = $*berq$- (7) or to the Proto-Eskimo-form $*x$ = $kəɣinaʀ$ (8) as proto-meaning an addition of the cognates' contemporary meanings, that is, $*C_1$ = C_2 + C_2'. Of course, the conflict between semantic reconstruction and lexicological-semantic classification discussed in Section 3 does not apply here, since there exists in every case semantic quasi-identity between a reconstructed meaning and a successor meaning.

   This additive procedure appears, from a methodological perspective, relatively cautious, yet it is not so harmless as it appears. The additive meaning given for $*C_1$ suggests that the meanings C_2 = LEG and C_2' = STEP (7) or C_2 = FACE and C_2' = BLADE (8) existed simultaneously already in the proto-language, and therefore polysemy existed in Common Kartvelian (7) or in Proto-Eskimo (8). However, according to everything we know of semantic change, polysemy which developed in particular languages is typically[17] the synchronic result of a diachronic process of semantic change (cf. Bréal: [5]1921, 143–144; Koch: 1991, 293; Wilkins: 1996, 267–270; Blank: 1997a, 114–130, 406–407, 419–424; 2001: 104–108; 2003). Lexical-semantic change proceeds in most cases through the steps C_i >...> C_i + C_j >...> C_j, in which C_i + C_j stands for an intermediate step of polysemy.[18] In this respect, it is indeed absurd when diachronic change and polysemy are sometimes set off against each other in the context of semantic reconstruction (see Bader: 1999, 49–50 and especially 54). Even in cases where lexical change is to be reconstructed, as in (7) and (8), one must start from the assumption that the presumable polysemic intermediate step C_i + C_j (= C_2 + C_2'), which has been abandoned in contemporary Kartvelian languages and has been preserved in some of the Eskimo languages, does not represent the oldest stage, and that one of the two meanings precedes the other, thus either $*C_1$ = C_2 >...> C_2 + C_2' >...> C_2' or $*C_1$ =

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[17] Blank (2001, 112–117; 2003) notes that very general conceptual patterns such as the contiguity between CONTAINER and CONTENT can produce polysemies such as in English *glass* 'hard, transparent, brittle substance; quantity of liquid a glass holds' (see also German *Glas* or French *verre*) without necessarily assessing a language-particular process of meaning change. Methodological writings on reconstruction however do not deal with general conceptual patterns, but with mostly idiosyncratic cultural and semantic phenomena.

[18] Less frequently, one also comes across the filiation C_1 >...> C_1 + C_2 >...> C_1, in which the newly formed meaning is lost again (cf. Geeraerts: 1983; Blank: 1997a, 121, 129–130), but in this case, too, one of the two meanings is older.

C_2' >...> C_2' + C_2 >...> C_2. The dictionary authors obviously do not know in cases (7) and (8) whether C_2 or C_2' is the older meaning. What is supposedly reconstruction here is de facto a renunciation of reconstruction.

   The additive presentation of reconstructed proto-meanings as in (7) and (8) is then superfluous, because it does not show any more than we already know and because our diachronic knowledge in these cases is zero.

4.2. The selective type

Very often we find meanings in etymological dictionaries such as those partially given in (9) und (10):

(9)   P[roto-]E[skimo] $pað̣viɣ$ 'wrist' [...][19]

    AAY K $paswik$ 'ankle'

    [...]

    NSY $pavžik$ 'joint of feet'

    CSY   [note $paasɫiq$ 'lower part of arm (esp. of garment)', [...]]

    [...]

    NAI $paɣvik$ 'knee bone of seal' [...]

    ECI $pavvik$ 'multiple bony articulation of many small bones such as the wrist, the feet etc.'

    GRI $paffik, paššik$, NG $passik$ 'wrist'

                                                           (CED, 245)

(10)   Von der schweren Basis $arə-mo-:$ $\bar{r}$-mo- 'Arm'.

    Ai. $īrmá-ḥ$ 'Arm, Vorderbug' (ursprüngl. 'Achselgelenk', vgl. $ărqron$, lat. $artus$) = av. $arəma$- 'Arm', osset. $ärm$ 'hohle Hand' [...], lat. $armus$ 'der oberste Teil des Oberarms, Schulterblatt, bei Tieren der Vorderbug' [...], apr. $irmo$ f., 'Arm' [...], aksl. $ramo, ramę$, serb. $ráme$ 'Schulter', got. $arms$, ahd. usw. arm 'Arm', arm. $armukn$ 'Ellenbogen' [...][20]

                                                               (IW, I, 58)

In each case the reconstructed proto-form stands in front, with a reconstructed proto-meaning $*C_1$ which is attributed to Proto-Eskimo in (9) and Indo-European in (10).[21] For the synchronically documented forms y, y', y'', ... (considered cognates) from contemporary or earlier language stages, different meanings C_2^n are then documented: C_2, C_2', C_2'', ... With respect to the reconstructed proto-meaning $*C_1$, two assumptions (which are not without problems) are made:

1. It is assumed that the proto-meaning is identical with precisely one of the documented meanings C_2^n of the cognates: $*C_1 = C_2^n$ = WRIST in (9) and $*C_1 = C_2^n$ = ARM in (10).[22] The cri-

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[19] AAY K = Koniag dialect of Alutiiq (Alutiiq Alaskan Yupik), NSY = Naukan(ski) (Naukan Siberian Yupik), CSY = Central Siberian Yupik, NAI = North Alaskan Inuit, ECI = Eastern Canadian Inuit, GRI = Greenlandic Inuit, NG = North Greenlandic/Polar Eskimo (dialect of GRI).

[20] Translation: "From the suffixed form $arəmo-:$ $\bar{r}$-mo- 'arm'. Old Indic $īrmá-ḥ$ 'arm, animal shoulder' (originally 'shoulder joint', cf. $ărqron$, Latin $artus$) = Avestan $arəma$- 'arm', Ossetic $ärm$ 'cupped hand' [...], Latin $armus$ 'top part of the upper arm, shoulder blade, shoulder in animals' [...], Old Prussian $irmo$ f., 'arm' [...], Old Church Slavonic $ramo, ramę$, Serbian $ráme$ 'shoulder', Gothic $arms$, Old High German etc. arm 'arm', Armenian $armukn$ 'elbow' [...]".

[21] It is thus a starred form, even if, for reasons of economy, this fact is not specially marked in the dictionaries used.

[22] I index the different instances of C_2^n according to order of occurrence in each dictionary article.

teria for this are not immediately clear. In the case of (10) one might argue that most cognates have the meaning C_2^n = ARM (Old Indic *īrmá-ḥ*, Avestan *arəma-*, Old Prussian *irmo* and Gothic/Old High German *arm*), but the question is whether this quantitative criterion is decisive. For (9) Greenlandic Inuit *paffik, paššik*, North Greenlandic *passik*, incidentally, it fails.

2. Even when there are good reasons for regarding one of the cognate meanings as "oldest" relatively, this does not mean that a possible proto-meaning is necessarily identical with that cognate meaning ($*C_1 = C_2^n$). The Romance language family makes for a good example. Its proto-language, Latin, is documented (therefore C_1 and not $*C_1$): for example, Latin *obstare* (C_1 = TO HAMPER) survives only in either the meaning C_2 = TO WARD OFF (as in Rhaeto-Romanic [Grisons] *dostar, dustar*) or in the meaning C_2' = TO REMOVE (as in French *ôter*, Occitan *dostar*). Even when C_2 is in all likelihood older than C_2', it is not identical with C_1 (thus: $C_1 \neq C_2$ and $C_1 \neq C_2'$). Similarly, for (9) and (10), it cannot be ruled out at the outset that the different meanings C_2^n originate from an even older, in this case undocumented meaning (i.e. $*C_1 \neq C_2^n$).

Thus, the selective assigning of meaning to $*C_1$ is doubly arbitrary.

4.3. The taxonomic-abstracting type

The examples (11)–(13) illustrate another frequent procedure:

(11) *miškɜ (müškɜ)* 'gebogener, ausgebauchter Körperteil: Rücken, Bauch, Buckel' F[innisch-]P[ermisch]
Tscher[emissisch] [...] KB *məškɘr*, B *müškɘ̂r, müškür* 'Bauch, Magen', [...] | wotj[akisch] S *mị̆š (mị̆šk-)* 'Rücken' [...] | syrj[änisch] S I P *mị̆š (mị̆šk-)* 'Rücken (S P I), Rückgrat, Rückseite, Buckel (I)', [...][23]

(UEW, II, 703)

(12) *gu̯et-* 'Schwellung, Rundung' [...].
Lat. *botulus* 'Darm, Wurst' [...]; [...]
got. *qiþus* 'Magen, Mutterleib' [...]; aisl. *kviðr* m. 'Bauch, Mutterleib', [...] ags. *cwið(a)* m. 'Mutterleib', ahd. *quiti* 'vulva' [...][24]

(IW, I, 481)

(13) *kok̂sā* 'Körperteilbenennung' [...].
Ai. *kákṣā* f., *kakṣa-* m. 'Achselgrube, Gurtgegend der Pferde', av. *kaša-* m. 'Achsel' [...];
lat. *coxa* f. 'Hüfte';
air. *coss* f. 'Fuß' [...];
ahd. *hāhsina* 'Kniebug des Hinterbeins', mhd. *hehse*, nhd. *Hächse, Hesse*, bair. *Haxn*.[25]

(IW, I, 611)

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[23] Translation: "*miškɜ (müškɜ)* 'bowed, bulged body part: back, stomach, hump' F[inno-]P[ermic] Cheremisic [...] KB *məškɘr*, B *müškɘ̂r, müškür* 'belly, stomach', [...] | Votyak S *mị̆š (mị̆šk-)* 'back' [...] | Zyrian S I P *mị̆š (mị̆šk-)* 'back (S P I), backbone, reverse side, hump (I)', [...]".
[24] Translation: "*gu̯et-* 'swelling, bulge' [...]. Latin *botulus* 'intestines, sausage' [...]; [...] Gothic *qiþus* 'stomach, womb' [...]; Old Icelandic *kviðr* m. 'belly, womb', [...] Anglo-Saxon *cwið(a)* m. 'uterus', Old High German *quiti* 'vulva' [...]".
[25] Translation: "*kok̂sā* 'body-part term' [...]. Old Indic *kákṣā* f., *kakṣa-* m. 'armpit, belt area of the horse', Avestan *kaša-* m. 'shoulder' [...]; Latin *coxa* f. 'hip'; Old Irish *coss* f. 'foot' [...]; Old High German *hāhsina* 'knee joint of the hind leg', Middle High German *hehse*, New High German *Hächse, Hesse*, Bavarian *Haxn*".

The example (11) shows, at first glance, a certain similarity to the additive type (4.1), because the concepts C_2 = BACK, C_2' = BELLY, and C_2'' = HUMP, which appear in the definitions of the documented cognates, are also used in the description of the proto-meaning $*C_1$, but an overall concept BENT, BULBOUS BODY PART comes at the front, which the concepts C_2, C_2', and C_2'' actually only serve to illustrate. This procedure is taken a step further in the other examples, where only the overall concept appears as $*C_1$: (12) $*C_1$ = SWELLING, CURVE in relation to C_2 = BOWEL, C_2' = STOMACH, C_2'' = WOMB, C_2''' = BELLY etc.;[26] (13) $*C_1$ = BODY PART TERM in relation to C_2 = ARMPIT, C_2' = SHOULDER, C_2'' = HIP, C_2''' = FOOT, etc. In these cases, it is clear that in terms of the associative-cognitive relations introduced in Section 1, $*C_1$ is taxonomically superordinated to each individual C_2^n. The procedure of reconstructing the proto-meaning exists here in an abstraction process within a taxonomic hierarchy or, more from the perspective of feature semantics, in the "identification of a common SEMANTIC COMPONENT in the lexical items concerned" (Fox: 1995, 115). One can therefore speak of a "taxonomic-abstracting" type here.

The objections raised against the two previously discussed types are here elegantly avoided: unlike the additive type (4.1), reconstruction is not superfluous, since semantic change has definitely taken place between $*C_1$ and the individual instances of C_2^n; unlike the selective type (4.2), $*C_1$ is not arbitrary, since to a certain extent it lays out the framework for the entire process of semantic change which is to follow.

In an astute analysis of this method, however, Sweetser notes that "[t]he parallel to phonological rules is [...] evident; change is equivalent to feature addition or feature loss" (Sweetser: 1990, 24). She notes that by this method very abstract proto-meanings of alarmingly low plausibility are extracted:

> If we took [...] feature-based semantic etymologies in general at their face value, the resulting Proto-Indo-European vocabulary as a whole would be an improbably abstract one. [...] We cannot assume that a proto-semantics based largely on the formal simplicity of supposed feature-changes (that is, a protosemantics which is essentially a mnemonic for the groupings of the various descendent meanings) will necessarily also be a likely semantics for a real language spoken by a real community, nor that it will be a likely source for the proposed changes (Sweetser: 1990, 24, 26–27).

The low plausibility of such abstract proto-meanings arises not least in relation to the basic level, as emphasized by prototype theory (see Rosch et al.: 1976). Example (13) is an extreme case, where with $*C_1$ = BODY PART TERM a degree of abstractness is reached that has more to do with academic classification than with normal everyday language.

4.4. The engynomic type
Only at first glance does the following example appear to belong to the type introduced in 4.3:[27]

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[26] For details cf. also Koch / Steinkrüger: 2001, 540.
[27] CAY = Central Alaskan Yupik; Qaw = Qawiaraq (dialect of SPI = Seward Peninsula Inuit); ECI Lab = Labrador dialect of Eastern Canadian Inuit.

(14)   P[roto-]E[skimo] *iʁcaquʁ* '(area around) heart'
       [...]
       CAY *iXcaquq* 'heart'
       [...]
       SPI *iqsaʁuq* [...] Qaw 'sack surrounding heart'
       [...]
       ECI Lab *itsaɣuk* 'pit of stomach'

(CED, 144)

Here, too, the proto-meaning $*C_1$ = (AREA AROUND) HEART appears in certain respects to "summarize" the documented meanings C_2^n of different cognates. Against the background of the associative-cognitive relations introduced in Section 1, it is nevertheless clear that there is a relation of contiguity here (see Koch / Steinkrüger: 2001, 538–539). HEART, SACK SURROUNDING HEART, and PIT OF STOMACH belong to the same frame, which is captured by the proto-meaning (AREA AROUND) HEART (this corresponds to the "engynomic" aspect of conceptual hierarchies depicted in Fig. 1). The doubt about the plausibility of the concept for everyday communication arises in this case not from the abstractness of the concept, but rather from the engynomic imprecision.

Let us summarize again where the problematic nature of the types of reconstruction of proto-meanings introduced in 4.1–4.4 lies for an onomasiological project which takes the target concept C2 as a starting point in order to trace diachronically the semantic path back to a source concept C1. The additive type (4.1) is uninteresting, because ultimately it does not make a truly diachronic statement about a potential source concept $*C1$. The selective type (4.2) is problematic, because the respective source concept $*C1$ is arbitrary in two respects, which negatively affects the lexical-semantic classification in the next step (diachronic *l* level, where the conflict discussed in Section 3 arises anyway) and especially further conclusions at the diachronic *m* level. The taxonomic-abstracting (4.3) and the engynomic (4.4) types arouse suspicion, because the postulated source concept $*C1$ appears to be unrealistic for a natural language. The types discussed in 4.1–4.4 are, in my view, the basic types of semantic reconstruction, and all four clearly have a purely technical value. We now have two reservations regarding reconstructed proto-meanings:

(i) The proto-meanings $*C_1$ are methodologically dependent upon the documented meanings C_2^n and cannot therefore be accorded equivalent treatment (cf. the conflict between semantic reconstruction and lexicological-semantic classification with regard to the levels of elaboration, as observed in Section 3).

(ii) The proto-meanings $*C_1$ are, with regard to the documented meanings C_2^n on which they depend methodologically (i), either diachronically uninteresting (4.1) or arbitrary (4.2) or unrealistic (4.3 and 4.4).

In short: proto-meanings are not to be taken seriously as "data" of a diachronic cognitive onomasiology. As some of the data sets have shown, this applies fully to Indo-European proto-meanings as well.

5. Benveniste revisited

In Section 4, the importance of Emile Benveniste for the methodology of semantic reconstruction was mentioned. The essence of his method is summarized in the following commentary on certain groups of cognates:

> [...] and if you take the trouble to study each of these groups in detail, you will see that, in every case, it forms a coherent lexical whole articulated on a *central notion* and able to deliver *institutional terms* (Benveniste: 1969, I, 11; italics added).[28]

The two phrases in italics each represent a component of his methodology, whose merits have been emphasized many times in the relevant literature. One component is the "ethnosemantic" embedding in the "institutions" (in the broadest sense) which represent the context for understanding the reconstructed meanings:

> On the level of the lexicon [Benveniste's approach] may be described as comparative historical ethnosemantics. Benveniste's object was to 'elucidate the genesis' of the vocabulary of Indo-European institutions in order to recover and restore the culture-historical context in which the given word was once a term (Watkins: 1994, 317).

Thus, Benveniste's semantic reconstructions claim not only to produce merely technical proto-meanings, but also to correspond to historical realities.[29] At the same time, and that is the second component of his methodology, he subjects his work to strict linguistic criteria:

> Benveniste is [...] the direct heir of Meillet. But he goes further. The requirement of rigour that he introduces bears the mark of the structuralist approach [...] (Lamberterie: 2000, 111).[30]

This structuralist approach directly affects the concept of meaning with which Benveniste operates, including in reconstruction:

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[28] Original quotation: "[...] pour peu qu'on étudie en détail chacun de ces groupes, on verra que dans chaque cas il forme un ensemble lexical cohérent, articulé par une *notion centrale* et prêt à fournir des *termes institutionnels*".

[29] Cf. Lamberterie (2000, 120; English translation): "Reconstructing immaterial reality, a designation procedure, is a task all the more delicate since the historical and cultural conditions in which a given lexeme has changed meaning or taken on a specific sense are lost to us. But it is essential to take these factors into account. It is a compulsory step towards accessing a scientifically acceptable etymology, that is to say, the word history and not just the establishment of an origin. It is here that the extrapolation of a history into prehistory turns out to be a difficult task, often hazardous, but nevertheless necessary. True etymology comes at this price." (Original quotation: "Reconstituer la réalité immatérielle qu'est un procédé de désignation est une tâche d'autant plus délicate que les conditions historiques et culturelles dans lesquelles un lexème donné a changé de sens ou a pris une acception particulière nous échappent. Or la prise en compte de ces facteurs est essentielle: c'est l'étape obligée pour accéder à une étymologie acceptable du point de vue scientifique, c'est-à-dire une histoire de mots et non seulement l'établissement d'une origine. C'est ici que l'extrapolation de l'histoire à la préhistoire se révèle être une tâche difficile, bien souvent hasardeuse, mais néanmoins nécessaire: la véritable étymologie est à ce prix.").

[30] Original quotation: "Benveniste est [...] l'héritier direct de Meillet. Mais il va plus loin. L'exigence de rigueur qu'il introduit porte la marque du courant structuraliste [...]".

The aim is to use comparison and diachronic analysis to reveal *signification* (meaning) where previously there was only *designation* (Benveniste: 1969, I, 12).[31]

The reconstructed meanings are supposed to be situated at the level of the "signifieds" and not at the level of the concepts.[32] The "signified" is conceived of in accordance with Saussure's principle of solidarity between signifier and signified, which can also be compared with the two sides of a piece of paper, such that signified differences correlate directly with signifier differences and vice versa (Saussure: 1916, 99, 157–159):

> [...] our demonstration proves a simple principle: when productive forms function in competition, they cannot have the same value, and correspondingly, two functions associated with the same form must have a common base. It is the linguist's task to discover these values, rarely obvious and often obscure (Benveniste: 1948, 6).[33]

The reconstructed meaning can only be thought of in monosemic terms as *valeur* associated with a certain form of expression and which represents the "common base" of the later, documented meanings, not only diachronically, but also in a systematic semantic sense. Using this method, Benveniste (1954, 296–298) reconstructs for example the proto-meanings of a number of Indo-European cognates with current meanings such as 'path', 'bridge', 'ford,' and 'sea,' an analysis which Fox (1995, 110–111 and especially 115–116) provisionally[34] schematized in terms of a feature semantics, as follows:[35]

(15)

Sanskrit *pánthāḥ* Ancient Greek *pátos* Old Church Slavonic *pǫtĭ*	Latin *pons*	Armenian *hun*	Ancient Greek *póntos*
'path, road'	'bridge'	'ford'	'sea'
[passage]	[passage]	[passage]	[passage]
[on land]	[on land]	[on land]	—
—	[over water]	[through water]	[on water]

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[31] Original quotation: "Il s'agit, par la comparaison et au moyen d'une analyse diachronique, de faire apparaître une signification là où, au départ, nous n'avons qu'une désignation".

[32] For the distinction between language-internal signified and language-external concept, cf. Raible: 1983, 5; Koch: 1996a, 113–118; 1996b, 223–224, 226–230; 2003b.

[33] Original quotation: "[...] notre démonstration vérifiera un principe simple: quand deux formations vivantes fonctionnent en concurrence, elles ne sauraient avoir la même valeur; et, corrélativement, des fonctions différentes dévolues à une même forme doivent avoir une base commune. Il incombe aux linguistes de retrouver ces valeurs généralement peu apparentes et souvent très cachées".

[34] Fox himself (1995, 205) later casts doubt on this analysis in a discussion of unidirectional semantic change (in terms of "subjectification" or of concrete > more abstract).

[35] Fox refers to a feature semantics as understood by Katz / Fodor (1963), while Benveniste's analysis, even if *avant la lettre*, lies more in the tradition of European structural semantics of Hjelmslev (1957) or Coseriu (Coseriu / Geckeler: 1981) or even of Guillaumism (cf. Picoche: 1986; for early applications see Valin: 1964). In (15) I combine the two diagrams of Fox (1995, 110 and 115) and correct their printing errors on the basis of Benveniste (1954, 297).

According to this analysis, something like "passage" (in Benveniste's French original: 'franchissement') can be extracted as an underlying, very general meaning. This is a reconstruction of the taxonomic-abstractive type, whose problems have already been discussed in 4.3. Benveniste proceeds in a similar taxonomic-abstracting way in his reconstruction of the following material:

(16) (a)
> Gothic *trauan* 'to be trustful', *ga-trauan* 'to trust'
> Old Icelandic *trúa*, Old High German *trū(w)ēn* 'to have confidence'
> Gothic *triggws*, Old Icelandic *tryggr* 'faithful, loyal'
> Old High German *triuwa* 'faithfulness, loyalty'

(b)
> Ancient Greek *drûs* 'oak'
> Sanskrit *dāru*, *dru-*, Avestan *dru-* 'tree; wood'
> Gothic *triu* 'wood; tree'; English *tree*
> Welsh *derw*, pl., 'oaks'
> Old Church Slavonic *drěvo*, Russian *dérevo* 'tree; wood'

He is able to reduce the groups (16a) and (16b) to a common denominator ("general sense"):

> [...] we consider that **derwo-*, **drwo-*, **dreu-* in the sense 'tree' is just one particular use of the general sense 'firm, solid' (Benveniste: 1954, 301).[36]

Benveniste does see that it is not enough to collect all (documented) meanings under this common denominator, but that the connections between the different meanings are also of decisive importance.

> The only principle that we shall make use of [...], taking it to be generally accepted, is that the 'meaning' of a linguistic form is defined by *all* of its uses, their distribution and the types of *connections* which result from them (Benveniste: 1954, 289–290; italics added).[37]

If one looks at the semantic connections between the words collected in (16), then one nevertheless wonders whether they can all be reduced according to a taxonomic-abstractive principle. Between TRUSTFUL or FAITHFUL and FIRM/SOLID, for example, it would be more appropriate to insert a relation of metaphorical similarity. However, between TREE and FIRM/SOLID there is above all a relation of contiguity (BEARER–PROPERTY). As our definition of associative-cognitive relations in Section 1 already shows, metaphorical similarities and contiguities are based on conceptual/perceptual saliences and are, in this respect, not reducible to taxonomic relations, nor at all reducible to overlapping of language-internally defined semantic features.[38] One can

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[36] Original quotation: "[...] nous considérons que le [sic!] **derwo-*, **drwo-*, **dreu-* au sens d''arbre' n'est qu'un emploi particulier du sens général de 'ferme, solide'".

[37] Original quotation: "Le seul principe dont nous ferons usage [...], en le prenant pour accordé, est que le 'sens' d'une forme linguistique se définit par la *totalité* de ses emplois, par leur distribution et par les types de *liaisons* qui en résultent".

[38] Compare Koch: 1994, 209–214; 1998; 1999b, 144–145; Blank: 1997a, 150–152, 160–169, 235–243. For a special type of metaphor which can *also* be described with the help of overlapping of linguistic semantic features. cf. Blank: 1997b, 23–28.

understand the processes of semantic change involved, then, only if one proceeds to the level of world knowledge, that is, of the concepts.[39]

At this point it would be worthwhile to consider critically the Benveniste quote at the beginning of this section: Is the extraction of a "central notion" through language-internal taxonomic abstraction ("general sense") really compatible with the ethnosemantic interest for "institutional terms", which do concern a knowledge of the external world, if only a reconstructed knowledge? One of Benveniste's famous analyses of gift and exchange in the Indo-European vocabulary appears to me to be symptomatic for this conflict. The starting point here is the observation that, of the descendents of certain Indo-European roots such as *do- (17) and *nem- (18), some have a meaning such as 'to give' while others have apparently opposite meanings such as 'to take'.

(17)   Latin *dare* 'to give'; Ancient Greek *dídōmi* 'I give'; Russian *dat'* 'to give'
          Hittite *dā-* 'to take'

(18)   Ancient Greek *némō* 'I distribute'
          Gothic *niman*, German *nehmen* 'to take'

Benveniste concludes:

> We consider that *dō- did not exactly mean either 'take' or 'give', but either of them, depending on the construction. [...] *dō- indicated merely the fact of holding. Only the syntax of the utterance could differentiate between 'holding to keep' (= take) and 'holding to offer' (= give). Each language has emphasized one of these senses at the expense of the other [...] (Benveniste: 1951, 316).[40]

and:

> The connection between nemw and *niman* is now restored and the ambivalence of *nem- is thus confirmed as a legal transfer given or received (Benveniste: 1951, 317–318).[41]

Here Benveniste draws a connection to the finding of Marcel Mauss (1923/24) through the system of exchange of gift and gift in return in archaic societies. These examples do not only show the dovetailing between linguistic facts and knowledge of the external world; they also correspond to a typical pattern that can be very well described from the perspective of cognitive linguistics with the aid of the frame concept. The apparently opposite verbs in (17) and (18) are logical converses (cf. Lyons: 1977, I, 153–154) which, from the point of view of cognitive psychology, produce different perspectives of one and the same frame (in TO GIVE the more salient AGENT gives up the POSSESSION, in TO TAKE the possession passes to him). If a diachronic connection exists between two converse verbs, as postulated for the examples in (17) and (18), then one can speak of auto-converses, between which contiguity relations exist (cf. Koch: 1991, 296–299;

2001c, 214–216; Blank: 1997a, 269–278; Waltereit: 1998, 75–83; Fritz: 1998, 124–125).[42]

Suddenly it becomes clear what is hiding behind Benveniste's "central notion" in such cases: it is less a language-internal "general sense" which is to be abstracted taxonomically than a cognitive frame. This frame is not identical with the reconstructed proto-meaning $*C_1$ (were we to assume that, we would be committing the mistake criticized in 4.4 with respect to the "engynomic" type), but the contiguities within this frame make the semantic connection between the verbs collected in (17) and (18) clear.

I believe it is possible, then, to "cognitively" reinterpret Benveniste. Important, diachronically relevant connections which he ingeniously discovered can be "saved" in this way, even if one must give up the goal of semantically reconstructing a $*C_1$.

6. Conclusion

For the *LexiType_Dia*-Project, the consequence of these considerations can only be that reconstructed proto-meanings of the type $*C_1$ cannot be ascertained without coming up against the conflict of levels described in Section 3 or the methodological problems outlined in Section 4. In collecting data for the *LexiType_Dia*-Project, such proto-meanings are therefore not included as input in the lexicological description at the diachronic *l* level in the sense of Fig. 4.[43] The concluding discussion in Section 5 has shown, however, that semantically interesting and indirectly diachronically relevant connections between the meanings of the documented cognates can be established, thanks to the repertoire of associative-cognitive relations (Section 1). In these cases, we insert non-directional "comparative" relations, as one could come up with in the following form for some of the examples (7)–(14):[44]

(7') C_2 = LEG <contiguity. ... .> C_2' = STEP

(8') C_2 = FACE <metaphorical similarity. ... .> C_2' = BLADE

(9') C_2 = WRIST <metaphorical similarity. ... .> C_2' = ANKLE

(10') C_2 = ARM <contiguity. ... .> C_2' = ELBOW

(12') C_2 = STOMACH <contiguity. ... .> C_2' = WOMB

(14') C_2 = HEART <contiguity. ... .> C_2' = PIT OF STOMACH

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[39] On this, cf. also note 32.

[40] Original quotation: "Nous considérons que *dō- ne signifiait proprement ni 'prendre' ni 'donner', mais l'un ou l'autre selon la construction. [...] *dō- indiquait seulement le fait de saisir; seule la syntaxe de l'énoncé le différenciait en 'saisir pour garder' (= prendre) et 'saisir pour offrir' (= donner). Chaque langue a fait prévaloir l'une de ces acceptions aux dépens de l'autre [...]".

[41] Original quotation: "La liaison est maintenant restaurée entre nemw et *niman*, et ici se confirme l'ambivalence de *nem- qui indique l'attribution légale comme donnée ou comme reçue".

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[42] In the works cited it is, among other things, shown that such auto-conversions come up especially frequently and polygenetically in the conceptual area TO RENT/TO LET FOR RENT. Benveniste, too, made corresponding observations for this and other similar conceptual areas, for example when he refers to Anc.Gk. *misthô* 'I let for rent' / *misthoûmai* 'I rent', *daneízō* 'I lend' / *daneízomai* 'I borrow' or Germ. *kaufen* 'to buy' / *verkaufen* 'to sell' (cf. Benveniste: 1951, 317; 1969, I, 159). Since these lexical correspondences are not merely due to change in meaning but rather to specific morphological processes (diatheses, word formation), the lexicological panorama moves, in my view, away from semantic reconstruction in any case. In addition, one can show that, in the conceptual areas involved, lexical auto-conversions of differing formal realization occur not only in Indo-European languages, but also in Hungarian, Arabic, Swahili, Japanese, and Chinese, for example (cf. Koch: 2001a, 1166–1167).

[43] They are collected in the data bank only for documentation purposes and placed "under quarantine".

[44] Note here the symmetrical direction of the pointed brackets <...> (unlike the diachronically intended notation explained in note 8 and used in the above examples).

Because the same associative-cognitive relations are used as with the documented diachronic filiations, the diachronic and the comparative material become comparable to a certain extent, and they can shed light on each other in the search for cognitive universals in lexical diachrony.

The price to be paid for the caution exercised with respect to the data mix and the inconsistency of reconstructed meanings is of course the asymmetry between the directionality of the diachronic relations and the non-directionality of the comparative relations. At the documentation level, this is in any case to be accepted. This does not rule out the possibility, however, that additional criteria (such as those relating to perception psychology) could be used in a later stage of analyzing this documentation in order to gauge the direction of semantic development even from comparative data. This will be illustrated with the example of the concept FACE in Mihatsch / Dvořák (this volume).

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