Concepticon: A Resource for the Linking of Concept Lists

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Abstract

We present an attempt to link the large amount of different concept lists (aka "Swadesh lists") which are used in the linguistic literature. This resource, the *Concepticon* (`http://concepticon.clld.org`), links xxx concepts labels from xxx conceptlists to xxx concept sets. Each concept set is given a unique numerical identifier, a unique label, and a human-readable definition. Concept sets are further structured by defining different relations between the concepts. The resource can be used for various purposes. Serving as a rich reference for new and existing databases in diachronic and synchronic linguistics, it allows researchers a quick access to studies on semantic change, cross-linguistic polysemies, and semantic associations.
Keywords: concepts, concept lists, Swadesh lists, cross-linguistically linked data

1. Introduction

In 1950, Morris Swadesh (1909 – 1967) proposed the idea that certain parts of the lexicon of human languages are universal, stable over time, and rather resistant to borrowing. As a result, he claimed that these parts of the lexicon, which was later called *basic vocabulary*, would be very useful to address the problem of subgrouping in historical linguistics:

> [...] it is a well known fact that certain types of morphemes are relatively stable. Pronouns and numerals, for example, are occasionally replaced either by other forms from the same language or by borrowed elements, but such replacement is rare. The same is more or less true of other everyday expressions connected with concepts and experiences common to all human groups or to the groups living in a given part of the world during a given epoch. (Swadesh, 1950, 157)

He illustrated this by proposing a first *list of basic concepts*, which was, in fact, nothing else than a collection of concept labels, as shown below:[1]

> I, thou, he, we, ye, one, two, three, four, five, six, seven, eight, nine, ten, hundred, all, animal, ashes, back, bad, bark, belly, big, black, blood, bone, brother (elder), child (son or daughter), cloud, cold, come, cry (weep), dance, day, dog, dust, ear, earth, eat, egg, eye, far, father, fire, flower, fog, foot, good, grass, green, hair, hand, head, heart, here, hit (with fist), hunt, husband, ice, lake, laugh, leaf, left hand, leg, liver, long, louse, man, meat, mother, mountain, mouth, name, near, neck, night, nose, person, rain, red, right hand, road (trail), root, rope, salt, sand, short, sing, sister (elder), skin, sky, small, smoke, snake, snow, speak, spear (war), star, stone, sun, swim, tail, that, there, this, tongue, tooth, tree, warm, water, what, where, white, who, wife, wind, woman, year, yellow. (Swadesh, 1950, 161)

In the following years, Swadesh refined his original concept lists of basic vocabulary items, thereby reducing the original test list of 215 items first to 200 (Swadesh, 1952) and then to 100 items (Swadesh, 1955). Scholars working on different language families and different datasets provided further modifications, be it that the concepts which Swadesh had proposed were lacking proper translational equivalents in the languages they were working on, or that they turned out to be not as stable and universal as Swadesh had claimed (Matisoff, 1978; Alpher and Nash, 1999). Up to today, dozens of different concept list have been compiled for various purposes. They are are used as heuristical tools for the detection of deep genetic relationships among languages (Dolgopolsky, 1964), as basic values for traditional lexicostatistical and glottochronological studies (Dyen et al., 1992; Starostin, 1991), or as litmus test for dubious cases of language relationship which might be due to inheritance or borrowing (McMahon et al., 2005; Chén Bǎoyà 陈保亚, 1996; Wang, 2006).

Apart from concept lists proposed for the application in historical linguistics, there is furthermore a large amount of not explicitly diachronic data, including concept lists serving as the basis for field work in specific linguistic areas (Kraft, 1981), concept lists which serve as the basis for large surveys on specific linguistic phenomena (Haspelmath and Tadmor, 2009), or concept lists which deal with the internal *structuring* of concepts, be it cognitive associations (Nelson et al., 2004), cross-linguistic polysemies (List et al., 2014), or frequently recurring semantic shifts (Bulakh et al., 2013).

[1]This list contains 123 items in total. According to Swadesh, these items occurred both in his original test list of English items, and in the data on the Salishan languages, which he employed for his first glottochronological study.

2. Concept Lists

Concept lists are – simply speaking – lists of concepts. In these lists, concepts are ideally described with help of a *concept label* and also a short *definition*. Most published concept lists, however, only contain a concept label. On the other hand, certain concept lists have been further expanded by adding structure, such as *rankings*, *divisions*, or *relations*.

2.1. Purpose of Concept Lists

Concept lists are compiled for a variety of different purposes. A major distinction can be made between those concept lists which have been compiled for the purpose of *language comparison* and those which have been compiled for the purpose of *concept comparison*. Among the former, we can further distinguish those lists which are used to prove *language relationship* (Dolgopolsky, 1964), those which are used for *linguistic subgrouping* (Norman, 2003; Starostin, 1991; Swadesh, 1955), and those which can be used to identify *contact layers* (Chén Bǎoyà 陈保亚, 1996). Among the latter, we can distinguish between concept lists with a primarily *synchronic objective* (Hill et al., 2014), and those with a primarily *diachronic objective* (Haspelmath and Tadmor, 2009; Bulakh et al., 2013).

2.2. Structure of Concept Lists

The purpose for which a given concept list was originally defined has an intermediate influence on its structure. Given the multitude of use cases in both synchronic and diachronic linguistics, it is difficult to give an exhaustive and unique classification schema for all concept lists which have been compiled in the past. In Table 1, we have nevertheless tried to distinguish eight basic types of concept lists and give one list for each of the types as a prototypical example.[2]

Type	Example	Purpose
basic vocabulary list (“Swadesh list”)	Swadesh 1952 / 200 items	subgrouping
subdivided concept list	Yakhontov 1991 (see Starostin 1991) / 35 + 65 items	genetic relationship, layer identification
“ultra-stable” concept list	Dolgopolsky 1964 / 15 items	genetic relationship
questionnaire	Allen 2007 / 500 items	dialect / language comparison
ranked list	Starostin 2007 / 110 items	subgrouping, layer identification
list of concept relations	DatSemShift, Bulakh et al. 2013 / 2424 items	representation of concept relations
special-purpose concept list	Matisoff 1978 / 200 items	subgrouping of Tibeto-Burman languages
historical concept list	Leibniz 1768 / 128 items	language comparison

Table 1: Examples for different types of concept list as they can be found in the literature.

3. Linking Concept Lists

The concepticon is an attempt to link the many different concept lists (“Swadesh Lists”) which are used in the linguistic literature. In practice, all entries from the various concept lists are linked to a *concept set* as an intermediate way to reference the concepts. The Concepticon currently links xxx concepts from xxx concept lists to xxx concept sets and defines xxx relations between the concept sets.

A concept list is a collection of concepts that is deemed interesting by scholars. Minimally, it consists of an *identifier* for each concept which the lists contains, and a *label* by which the concept is referenced. The creator of a concept list is called a *compiler*. Each concept list is tight to one or more *sources*, it is given in one or more *source languages* and was compiled for one or more *target languages*. A *description* gives further information on each concept list in free, exclusively human-readable form. The basic structure of the Concepticon is illustrated in Figure 1.

To facilitate our workflow and to guarantee the comparability of concept lists even if they do not share concepts which are directly linked via our concept sets, we define additional and very simple *concept relations* between concept sets (*broader*, *narrower*, *similar*). Even if the concepts in two or more concept lists are not assigned to the same concept set, they can still be assigned to concept sets via concept relations.

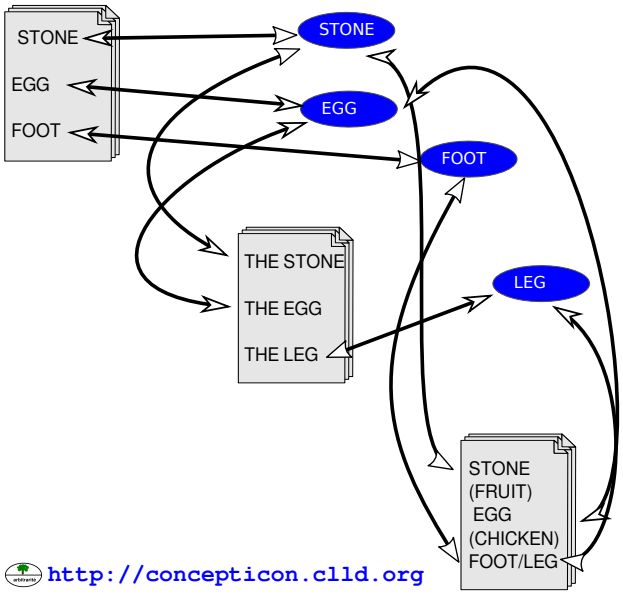

Figure 1: The Basic Structure of the Concepticon.

4. Examples

4.1. CHILD: “Young Human” or ”Descendant”?

As a first example for both the problems one faces when trying to link concepts across concept lists and the way we try to address them in the Concepticon, consider the different concept labels for “child” given in Table 2. As we can see from the labels themselves, the label “child” can denote two different concepts, of which one could be specified as “child (young human)” and the other as “child (descendant)”. Not all concept lists, however, offer this precision. Swadesh himself, for example, would specify the “descendant” reading

[2] For further information regarding these concept lists, just click on the links in the “Example” field of the table.

in his first list from 1950, but the “young human” reading in the list from 1952. In the list by Comrie and Smith (1977), which was intended to be a merger of the Swadesh’s 200-item list from 1952 and his 100-item list from 1955, this specification is lost, and we cannot tell from the concept label which reading was intended by the compiler. The same applies for the lists of Blust (published in Greenhill et al., 2008) and Chén Bǎoyà 陈保亚 (1996). In order to handle these problems resulting from ambiguous concept labels, we assign those concepts whose reading we cannot determine from the concept label and the further descriptions given in the concept lists to a broader concept set “CHILD”. Additionally, we set up a relation that states that “CHILD” is both broader as “CHILD (YOUNG HUMAN)” and “CHILD (DESCENDANT)”. Figure 2 shows the relations involving “CHILD” which have been currently defined in the Concepticon.

Compiler	CONCEPT LABEL	Concepticon
Blust (2008)	child	CHILD
Chén (1996)	孩子/ child	CHILD
Comrie and Smith (1977)	child	CHILD
Leibniz (1768)	infans	CHILD (YOUNG HUMAN)
Matisoff (1978)	child/son	CHILD (DESCENDANT)
Swadesh (1950)	child (son or daughter)	CHILD (DESCENDANT)
Swadesh (1952)	child (young person rather than as relationship term)	CHILD (YOUNG HUMAN)

Table 2: Concept Labels and Concept Sets for “child”.

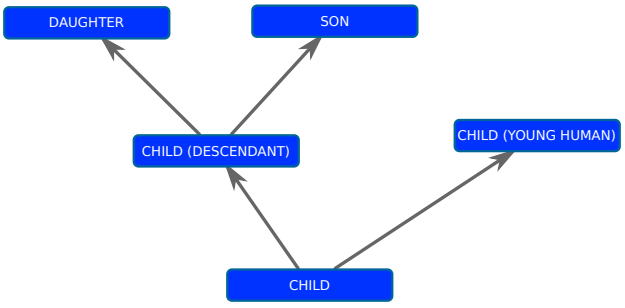

Figure 2: Concept Relations for “child”.

4.2. RAIN: Thing or Action?

Another example for problems involving concept labels in concept lists are basic words related to “rain”. Here, as illustrated in Table 3, the problem of mapping is not to find out which reading is intended, since “rain” itself is a rather clearcut concept, but it is not possible in all cases to tell whether the compilers intended to denote the *thing* or the *action*. This is a problem resulting from the use of English as a language for concept labels, since both the noun and the verb are homophones. In the lists of von Leibniz (1768) and Chén Bǎoyà 陈保亚 (1996), there is no doubt that the *thing*-reading is intended, since noun and verb of “rain” are not homophone, neither in Chinese, nor in Latin. The same holds for the list by Blust (2008), since it structures the concepts into specific semantic fields which clearly indicate which reading is intended. In the lists of Swadesh (1950) and Comrie and Smith (1977), however, it is not possible to determine the intended reading. For this reason, we set up an overarching concept set “RAINING OR RAIN” which we define as being broader as “RAIN (PRECIPATION)” and ”RAIN (RAINING)” (see Figure 3).

Compiler	CONCEPT LABEL	Concepticon
Blust 2008	rain	RAIN (PRECIPATION)
Chen 1996	雨/ rain	RAIN (PRECIPATION)
Comrie and Smith (1977)	rain	RAINING OR RAIN
Leibniz 1768	pluvia	RAIN (PRECIPATION)
Matisoff 1978	rain	RAIN (PRECIPATION)
Swadesh 1950	rain	RAINING OR RAIN
Swadesh 1952	to rain	RAINING

Table 3: Concept Labels for “rain”

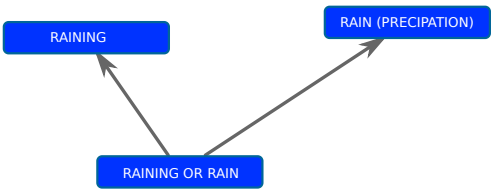

Figure 3: Concept Relations for “rain”.

4.3. “DULL” or “STUPID”?

As a last example for typical problems involving the linking of concept list, consider the concepts given in Table 4. Here, the four lists apparently intend to denote the same concept “dull”. From the Chinese terms used in the lists by Wang (2006) and Chén Bǎoyà 陈保亚 (1996), however, we can clearly see that the intended meaning is not “dull” in the sense of “being blunt (of a knife)”, but “stupid”. Given that both authors originally wanted to render Swadesh’s original concept lists in their research, this shows that we are dealing with a translation error here which may well result from the fact that in many concept lists, only “dull” is used as a concept label, without further specification.

Compiler	CONCEPT LABEL	Concepticon
Blust (2008)	dull, blunt	DULL
Chén (1996)	呆，笨/ dull	STUPID
Comrie and Smith (1977)	dull	DULL
Wang (2006)	笨（不聪明）/ dull	STUPID
Swadesh 1952	dull (knife)	DULL

Table 4: Erroneous Translations in Concept Lists.

5. Using the Concepticon

HIer eventuell zeigen, wie das Concepticon bei Dictionaria und Lexibank benutzt werden kann

6. Outlook

heir noch mal sagen, dass wir natürlich noch weiter daran arbeiten.

7. Acknowledgements

vielleicht nicht nötig im Moment...

8. References

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