Using FrameNet in Communicative Language Teaching[1]

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Abstract

This article describes how a lexical database such as FrameNet in its different language versions can be used for communicative language teaching, an approach which focuses on communicative rather than grammatical competence. Using the semantic frames of FrameNet to illustrate situations on which to base teaching can bring about a natural flow in the organisation of teaching materials, in syllabus construction, and in the planning of individual lessons. FrameNet can also support language students in learning to communicate in different situations. The frames can guide them in choosing lexical units and sentence patterns.

1. Communicative language teaching

Modern language teaching focuses more and more on communicative competence, rather than grammatical competence, which was the goal well up to the end of the last century. The focus has shifted from producing grammatically correct sentences to knowing what to say and how to say it in different situations, in relation to the intentions and roles of the participants (Richards, 2006). Classic language teaching has had a deductive approach which Richards calls the P-P-P cycle: Presentation, Practice, Production. The teacher presents a grammar structure, often embedded in text, and students practice using this structure in drills or substitution exercises. Finally the students are asked to use the grammar structure in contexts of their own choice. Communicative language teaching has instead an inductive approach where students are given sentences containing a certain grammar structure and are encouraged to work out the grammar themselves.

Finding patterns is essential in a language such as Chinese, where there are concepts and categories without equivalents in European languages. Chinese verbs have no tense. Instead aspect is important and cannot be ignored. Traditional language teaching tends to avoid pragmatics, but, for Chinese, it is fundamental. Aspects in Chinese must be taught systematically, in realistic situations, not as it is often taught today, as something attached to otherwise complete sentences (Friberg, 2011). Basing teaching on semantic frames could be a way to introduce situations in natural sequence, while annotated sentences could show patterns of expression. A situation presented for learning could, for example, be talking or writing about a holiday trip. We will discuss frames relevant to this situation after presenting FrameNet itself.

2. FrameNet

The theoretical approach of FrameNet is based on frame semantics, put forward by Charles J. Fillmore (Fillmore et al., 2003; Ruppenhofer et al., 2010). The central idea is that word meanings are described in relation to semantic frames which are schematic representations of the conceptual structures of the language. According to FrameNet, a lexical unit (LU) is a pairing of a word or multiword expression with its meaning. Each sense of a word or multi-word expression evokes a different frame. The frame describes a particular type of situation, object, or event along with its typical participants. The participants, called frame elements

(FEs), are described in terms of semantic roles. The frame elements are divided into two main categories, core and non-core elements.

A core FE instantiates a conceptually necessary component of a frame. In a sense the core elements defines the frame, differentiating it from others. A core element is not always explicitly present in a sentence evoking the frame, but it must be understood in the context. An exception is when a number of core elements make up a core set. In a core set, only one of the elements of the set has to be present (Ruppenhofer et al., 2010). Examples of this are in the `Drop_in_on` and `Temporary_stay` frames, where HOST on one part and HOST_LOCATION or LOCATION on the other make up core sets.

3. FrameNet across languages

As FrameNet is not based on either syntax or lexical units, but instead on semantic units or concepts, the FrameNet model can also be used for other languages than English. FrameNet creators for other languages can and have started out by using the English frames, reusing the frame descriptions and frame relations but not the lexical units. Reusing the English frames not only saves a considerable amount of time and effort, but it also opens possibilities to use FrameNet in cross-lingual applications such as machine translation and also for language teaching.

The frames of FrameNet are abstract conceptual structures. The structures are populated by lexical units and annotated sentences containing these lexical units. The concepts behind the frames are to a certain degree language independent, while the lexical units and the annotated sentences and their syntax are highly language dependent. It is this duality that makes cross-language use of FrameNet so valuable. Linking frames of different languages brings forth concept equivalents, and studying corresponding frames closer illustrates the differences. FrameNet provides a model for describing cross-lingual similarities and differences in the interdependence of the conceptual frames and the language specific lexical units and syntax of the annotated sentences (Lönneker-Rodman et al., 2009).

4. The resources

The English version of FrameNet (https://framenet.icsi.berkeley.edu/fndrupal/) is elaborated by the Berkeley research group. It contains more than 10,000 lexical units and 1,000 related frames, exemplified in more than 170,000 sentences. The Swedish FrameNet (http://spraakbanken.gu.se/eng/swefn) is a lexical resource under development (Borin, 2010, Borin et al., 2010, Borin et al., 2009). As of March 2011 it contains 561 frames and nearly 19,000 lexical units and 3,300 annotated sentences.

The Chinese FrameNet contains 309 frames and 3,151, lexical units (R. Li, personal communication), and more than 18,300 annotated sentences according to the Berkeley FrameNet web site. The frames of the Chinese FrameNet are based on the English frames as far as the languages contain similar concepts, but when needed frames, frame elements, and of course lexical units are adjusted to the Chinese language. (R. Li, personal communiation)

According to the Berkeley FrameNet web site there are FrameNets of various sizes in German, Spanish, Japanese, and Brazilian Portuguese.

5. The frames

During the first year of learning a language it is common to engage in discussions of journeys and visits. We have therefore chosen to look at seven frames which could be used in a typical language learning situation at elementary level: `Departing`, `Quitting_a_place`, `Setting_out`, `Arriving`, `Visiting`, `Drop_in_on`, and `Temporary_stay`. The descriptions of the frames are found in table 1.

Table 1. The frames discussed, all referring to some part of the situation of leaving one location and ending up or staying in another.

Frame	Frame description
Departing	An object (the THEME) moves away from a SOURCE. The SOURCE may be expressed or it may be understood from context, but its existence is always implied by the departing word itself.
Quitting_a _place	A SELF_MOVER leaves an initial SOURCE location. The PATH by which the SELF_MOVER departs, and the INTENDED_GOAL of the DIRECTION may also be mentioned. In many words which evoke this frame, there is an additional implication that the SELF_MOVER is discontented with the SOURCE location.
Setting_out	A SELF_MOVER begins a journey at a SOURCE location, in a particular DIRECTION generally setting out with an INTENDED_GOAL in mind.
Arriving	An object THEME moves in the direction of a GOAL. The GOAL may be expressed or it may be understood from context, but it is always implied by the verb itself.
Visiting	An AGENT matches location with an ENTITY in order to fulfill some PURPOSE. Quite often, the PURPOSE is social- or entertainment-oriented.
Drop_in_on	A VISITOR arrives at the HOST_LOCATION as a guest of the HOST, for the purpose of achieving a PURPOSE. The PURPOSE is often social in nature, i.e., the visit itself constitutes a goal.
Temporary _stay	A GUEST stays for a time at a LOCATION, which is not his or her permanent residence, for some DURATION. The LOCATION is often the permanent residence of a HOST.

For a language such as Chinese the frames listed above would not be sufficient. Movement verbs are categorized, not only relative to the source or goal of the movement, but also relative the location of the speaker, for example the verbs *lái* 'moving in the direction towards the location of the speaker' and *qù* 'moving toward a location other than that of the speaker'. These concepts do not have frames in the Berkeley FrameNet. A complete FrameNet adapted to Chinese must contain such frames.

The Chinese FrameNet has created a frame corresponding to the English frame `Arriving`, but not yet for `Departing` and `Visiting`. (Ru Li, personal communiation)

6. The core and non-core elements

The seven chosen frames all refer to some part of the situation of leaving one location and ending up or staying in another, but they differ with respect to the defining core elements. `Departing` and `Arriving` refrain from making a standpoint for the animacy of the mover. The mover may be a vehicle, object, or human being. The corresponding FE is THEME. Both frames have one other core element: SOURCE and GOAL respectively. `Departing` focuses on the THEME leaving a SOURCE while `Arriving` focuses on the THEME reaching a GOAL.

In the frames `Quitting_a_place` and `Setting_out` the mover is represented by the core element SELF_MOVER, an entity moving under its own power. The frame descriptions state that the SELF_MOVER generally has an INTENDED_GOAL, in `Quitting_a_place` the mover is further described as discontented with the source, all of the above implying animacy. The AGENT of the `Visiting` frame is described as sentient, therefore animate, but there is no focus on moving. The frame simply describes the AGENT as being in the same location as the ENTITY it visits. The ENTITY can be animate, but also, for example, a museum or a web site. The purpose of the visit is the AGENT seeing the ENTITY.

The `Drop_in_on` frame explicitly describes a host-visitor situation where the HOST is a person letting the VISITOR into his or her territory. HOST is in a core set with HOST_LOCATION. Even when the latter is used the focus is on the HOST.

Table 2. The core frame elements of the leaving, arriving and staying frames. These core elements, together with the frame descriptions, define the frames and make them unique.

Departing	Quitting a place	Setting out	Arriving	Visiting	Drop in on	Temporary stay
THEME	SELF_MOVER	SELF-MOVER	THEME	AGENT	VISITOR	GUEST
SOURCE	SOURCE	SOURCE				
			GOAL	ENTITY	HOST_LOCATION	LOCATION
					HOST	HOST
						DURATION

`Temporary_stay` is the only frame with a time aspect, DURATION, among the core elements. This is emphasized by DURATION being explicit in the frame description. The frame differs from `Visiting` and `Drop_in_on` in that the GUEST does not need to have a purpose for the stay, the frame expresses a situation of temporary lodging. Note that the core element in this case is GUEST, not VISITOR.

`Visiting` and `Drop_in_on` both have DURATION as non-core element. This aspect is relevant, but not defining. `Arriving` does not have DURATION as the event takes place at a point of time. The same is true for `Departing`, `Setting_out`, and `Quitting_a_place`, but here instead the time away from the source is expressed by the non-core elements DURATION_OF_END_STATE or DURATION_OF_FINAL_STATE.

Not only DURATION appears as both core element and non-core element. `Departing` and `Arriving` are antonyms, referring to the beginning or end of a journey. Where `Departing` has SOURCE as core and GOAL as non-core element, it is the opposite for `Arriving`. As `Quitting_a_place` and `Setting_out` have an even stronger emphasis on the start of the journey than `Departing` they have a less determinative version of the endpoint: INTENDED_GOAL.

As `Visiting`, `Drop_in_on` and `Temporary_stay` do not refer to a journey, they do not contain the antonym pair SOURCE and GOAL. `Temporary_stay` refers to a person being someplace described by the core element LOCATION. Interesting is that `Drop_in_on` as corresponding core element has HOST_LOCATION. It is not the visitor's temporary residence which is focused, but seeing the HOST. The visitor in `Visiting` and `Drop_in_on` still has an ordinary residence, not necessary in `Temporary_stay`. They contain the non-core element NORMAL_LOCATION. Finally, the frame `Visiting` does not have any FE referring to goal or location. The place visited is not seen as a location, it can be the purpose of the visit, therefore referred to by the core element ENTITY.

The frames referring to leaving, `Departing`, `Quitting_a_place`, and `Setting_out`, all have several frame elements describing the journey, such as JOURNEY, MODE_OF_TRANSPORTATION, PATH, PATH_SHAPE, DIRECTION, DISTANCE, and SPEED, not

surprising as leaving something is the start of a journey. There are two other frames which have one and two of these journey related FEs respectively: Drop_in_on and Arriving. Both of these require a previous journey. The journey is not unrelated, although not as important as in the previously described frames. The two remaining frames Visiting and Temporary_stay are detached from the travelling, and thus do not contain FEs referring to the journey.

There are five non-core elements which occur in all seven frames: PLACE, TIME, PURPOSE, MANNER, and MEANS. These are common and occur in any semantically adequate verb frame throughout FrameNet, usually as non-core elements (Ruppenhofer et al., 2010).

Table 3. The non-core frame elements, which modify, rather than define the frame.

Departing	Quitting a place	Setting out	Arriving	Visiting	Drop_in_on	Temporary stay
			SOURCE	NORMAL_ LOCATION	NORMAL _LOCATION	
GOAL	INTENDED_GOAL	INTENDED_GOAL				
			GOAL CONDITIONS			
PLACE	PLACE	PLACE	PLACE	PLACE	PLACE	PLACE
COTHEME	CO-PARTICIPANT	COTHEME	COTHEME			CO-GUEST
TIME	TIME	TIME	TIME	TIME	TIME	TIME
DURATION_OF_ END STATE	DURATION_OF_ FINAL STATE	DURATION_OF_ FINAL STATE		DURATION	DURATION	
FREQUENCY	FREQUENCY	FREQUENCY	FREQUENCY	FREQUENCY	FREQUENCY	FREQUENCY
ITERATION			PERIOD_OF_ ITERATIONS	ITERATIONS		ITERATIONS
DEPICTIVE	DEPICTIVE	DEPICTIVE	DEPICTIVE			DESCRIPTOR
EVENT DESCRIPTION			EVENT_ DESCRIPTION			
JOURNEY						
	CONSECUTIVE	CONSECUTIVE				
PURPOSE	PURPOSE	PURPOSE	PURPOSE	PURPOSE	PURPOSE	PURPOSE
REASON						
EXPLANATION	EXPLANATION	EXPLANATION			EXPLANATION	EXPLANATION
	RESULT	RESULT				
CIRCUMSTANCES	CIRCUMSTANCES	CIRCUMSTANCES	CIRCUMSTANCES			
CONTAINING_ EVENT	CONTAINING_ EVENT	CONTAINING_ EVENT		DEPENDENT_ STATE	CONTAINING_ EVENT	CONTAINING_ EVENT
	COORDINATED_ EVENT	COORDINATED_ EVENT				
			DEGREE			
MANNER	MANNER	MANNER	MANNER	MANNER	MANNER	MANNER
MEANS	MEANS	MEANS	MEANS	MEANS	MEANS	MEANS
MODE_OF_ TRANSPORTATION	VEHICLE	VEHICLE	MODE_OF_ TRANSPORTATION		MODE_OF_ TRANSPORTATION	
PATH	PATH	PATH	PATH			
	DIRECTION	DIRECTION				
	PATH_SHAPE	PATH_SHAPE				
DISTANCE	DISTANCE	DISTANCE				

SPEED	SPEED	SPEED				
	RECIPROCATION	RECIPROCATION				
RE_ENCODING	RE_ENCODING	RE_ENCODING	RE_ENCODING			

8. The annotated sentences

In addition to listing the frame elements and the lexical units, the frames contain annotated sentences using the lexical units. The annotated sentences show contexts where the frame is evoked, they illustrate which sense of polysemous words evokes the frame, and also demonstrate possible syntax. Also illustrated in the annotated sentences are the frame elements, what part of speech or sentence constituent they may be and which prepositions they may contain. In the language learning situation these sentences provide sentence patterns to learn from. A set of annotated sentences from the Swedish Departing frame is shown in figure 1.

[TI På onsdag] [LU åker] [T hela familjen] [PU på semester] [G till New York].

[T Nästa buss] [LU gick] [TI klockan tio över åtta följande morgon].

[TI Ganska snart] börjar [T folk] [LU droppa av] och prassla med tältöppningar och tandborstar.

Har [T de] [LU gett sig iväg] [MA frivilligt] eller utsatts för brott?

[T Jag] kan inte bara [LU dra] [G hem] och [PU lägga mig], hur gärna jag än skulle vilja.

[T Han] har [LU lämnat] [S landet] och [PU försöker slå sig fram i Hollywood].

Bäst att passa på, ser ut som att [T Emma] [LU försvinner] [G till England] [TI i höst] [RN för kärleken].

Polisen väcker honom, och [T han] [LU avlägsnar sig] [MA skyndsamt].

Figure 1. Selected annotated sentences of the Swedish Departing frame. The frame elements present in these sentences are: TI TIME, T THEME, PU PURPOSE, G GOAL, MA MANNER, S SOURCE, and RN REASON.

9. Course syllabi and learning material

A straight forward use of FrameNet as a resource is for constructing language course syllabi and learning materials. It would aid in quickly finding appropriate situations for texts and exercises. It could support the teacher in deciding the order in which to bring up different aspects of the language, in deciding which parts of speech or grammatical categories to discuss in which situation. In contrast to classical teaching, where grammar was in focus, the communicative teaching based on semantic frames could have a more natural flow. The grammar discussed in different book chapters or different parts of a course would be decided from the situations rather than the texts being chosen to suit the grammar.

A natural flow in the teaching material could start out with the frames describing situations of leaving. This could be a starting point for learning to express a point in time, iterations, means of transportation or direction, distance and speed. All these concepts have

relevant frames of their own. When the situations discussed in class move on to frames relevant to aspects of visiting, the issues treated can, in a natural way, move to, for example, expressing duration or purpose.

10. The student point of view

FrameNet could be useful from the student perspective as well. A language learner is often in a situation where he or she needs to practice formulating speech or text. If the student wants to prepare for talking about a visit to a friend, he or she could look up the `Visiting` or `Temporary_stay` frames to see what belongs in such an utterance, for example location, time, duration or purpose of the stay. The annotated sentences would give the student patterns of expression. In the future, when FrameNets are more complete, a student who has access to FrameNet in his or her first language as well as in the language to be learned could gather the sets of frames relevant for a certain situation and study how the categorization of the frames differs between the languages.

For future students studying Chinese and having access to a complete FrameNet adapted to Chinese two of the frames collected for this situation would be: *lái* 'moving in the direction towards the location of the speaker' and *qù* 'moving toward a location other than that of the speaker'. By studying these frames, and other relevant frames, students could avoid what is now a common mistake. Intending to say 'What time do we depart?' in the sense 'When does the train leave the platform?' they often say *What time is the train on its way away from us?*. A pair of sentences which in English both would be 'Don't go!' would in Chinese evoke different frames depending on if the speaker meant '*Don't go there! It is too dangerous.*' or '*Don't leave me! I will miss you!*'. These differences could also be discovered by studying and comparing frames.

11. Conclusions

We believe that once the FrameNets of different languages reach a sufficient level of completeness they will be a useful resource for communicative language teaching and learning. However, for the FrameNets to be truly useful it is essential that the non-English ones on the one hand use the original English FrameNet as basis for construction, enabling linking between corresponding frames, demonstrating the similarities between the languages, and differences concerning syntax and lexical units. On the other hand it is imperative that the non-English FrameNets truly adjust to the language in question, as these adjustments would demonstrate the differences between the languages. Such an adjustment could be the creation of the *lái* and *qù* frames in Chinese.

Note

References

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