Sitting, Standing, and Lying in Frames: A Frame-Based Approach to Posture Verbs

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Abstract. Posture verbs which allow for an extended locative use, such as sit, stand and lie, make reference to specific parts of the localized object, to the orientation of prominent object axes and to positional information, which are perceived by means of cognitive modules such as gestalt recognition and spatial perception. These properties render posture verbs an excellent object for the investigation of cognition and language. This paper analyzes the three basic posture verbs of German (sitzen ‘sit’, stehen ‘stand’ and liegen ‘lie’) in terms of frame representations. It turns out that frames can serve as a highly flexible device for decompositional analyses that is at the same time a cognitively plausible knowledge representation format.

Keywords: posture verbs, extended locative use, frame analysis, object schemata, German, Korean, French.

1 Introduction

Posture verbs such as sit, stand, and lie basically denote particular postures of individuals. According to [1] virtually all languages have posture verbs and, in addition, often exhibit extended locative uses. For example, the English verb sit in (1) refers to the posture of an individual resting on the buttocks and also allows for specifying the location of this individual by means of a locative PP.

(1) John is sitting on the swing.

Posture verbs (henceforth PVs) with a locative extension cannot be analyzed in isolation, but need to be treated in the context of other locative expressions such as the locative PPs that figure as their complements. By consequence, any analysis of PVs has to be considered as part of an overall approach to the relation between space and language which aims at an understanding of how human language expressions make reference to space and location.

The last few decades have seen a considerable increase in the amount of studies devoted to this topic. Given the restrictions of this paper, we cannot summarize, let alone review, all the qualitative work that has been done in this area. From a cognitive perspective, the general approaches by [17] and [34] have been particularly influential. In addition, there are numerous comprehensive anthologies
such as [7, 10, 13, 23], to name just a few. There are also numerous works on the spatial meaning of particular parts of speech, such as spatial prepositions (2, 27, 36, 39), dimensional adjectives referring to the spatial properties of objects such as *wide* and *long* (18, 20), and locative verbs (1, 14, 26), which comprise verbs such as *hang (at)* and *stick (to)* in addition to posture verbs.

The typological branch of the research area, one important exponent of which is the Language and Cognition Group at the Max Planck Institute for Psycholinguistics, has revealed that languages differ significantly with respect to their spatial reference systems (22, 23). According to Ameka and Levinson (1), this diversity is in conflict with Landau and Jackendoff’s assumption (17) that spatial language is of a rather schematic nature which abstracts away from properties such as object shape and is mainly carried by prepositions as in English. Ameka and Levinson argue that languages with a large inventory of locative verbs, in particular, are problematic in this respect since they have a full set of contrastive locative verbs which often make specific reference to properties of the figure and the ground, such as the number of axes, the presence of a canonical orientation, and distinctions such as natural vs. cultural kind, flexible vs. rigid, tall vs. stout, and container vs. flat surface.

Any formal representation must be able to cope with the cross-linguistic diversity of spatial language. In this paper, we will show that frame representations in the sense of [3, 28] are ideal for this purpose as they provide us with a highly flexible device while at the same time being a cognitively plausible, variable-free representation format.

After a short introduction to our framework in the next section, we will apply the frame model to the three basic German PVs *sitzen* ‘sit’, *stehen* ‘stand’, and *liegen* ‘lie’ in section 3. Given the wide range of languages which have been investigated for their posture verb repertoires by the Nijmegen Language and Cognition Group and others, this may seem rather unspectacular. However, there are two reasons for our choice of German as an object language. First, German is an instance of a language which uses a comparatively large set of about ten verbs in basic locative constructions (16). This makes German a good starting point for exploring the potential of a frame analysis that can then be extended to languages with larger inventories of locative verbs. Second, there are already a number of investigations of German locative verbs and the subclass of PVs on which we can build the frame approach (1, 14, 16, 32 among others). In particular, we will take the decompositional approach by 14 as a basis for the frame representation of PVs and spatial prepositions. After the exemplary frame analysis of the three basic German PVs, we will outline some possible extensions of the frame approach in section 4.

2 The Framework

In our analysis of PVs, we will apply frame representations made up of recursive attribute-value structures. The introduction of frames as a cognitively plausible