The semantics of the focus and temporal particle *Gerade*

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As noted in the literature (e.g. König, 1991), German *gerade* bears quite some resemblance in meaning effects with restrictive focus particles like English *only*, without however excluding alternative values. While the class of *red cars* in (1) "exhaustively identifies" the class of cars getting often stolen, according to König, it does not exclude other types of cars from being often stolen.

(1) Gerade [rote]$_F$ Autos werden oft gestohlen.
GERADE red cars become often stolen.
'Precisely RED cars are often stolen.'

We analyse *gerade* in terms of a discourse particle that sharpens the perception of adequacy of a property for characterising a particular set. W.r.t. cars that are often stolen (i.e., the background B), (1) establishes red cars (the associate, according to Krifka (1998)) as the best match satisfying B. Thus *gerade* points at the subset of B which is viewed as the most prototypical one and tells us that this (nonempty) subset extensionally corresponds to the set characterised by the property P denoted by the associate. We compute this correspondence via a measure function μ that, when applied to the associate, returns a higher value than that of any other property P' considered to be relevant in context C. This establishes the match between the prototype of B and the associate as the best fit in C (although not necessarily unique in general). Therefore, the effect of sharpening the descriptive power of a property is the result of a comparative instruction.

We state our idea within the foreground-background framework of focus developped in von Heusinger (1999). Focus induces the construction of two different representations of a sentence, namely the foreground and the background. The foreground corresponds roughly to the host sentence without the particle, whereas the background corresponds to the foreground, where the focus value has been abstracted away, and replaced by a variable, see (2) for a simplified representation, where DRSs are given in the following flat notation: [discourse referents | conditions].

(2) a. Background: $[x|car(x), \mathbf{X}(x), get\_often\_stolen(x)]$
b. Foreground: $[x|car(x), \mathbf{red}(x), get\_often\_stolen(x)]$

In order to interpret a sentence, one additionnally needs a separate representation for the previous discourse. The sentence-background is taken as being given (i.e., the discourse referents and the conditions must be recoverable from the discourse). Background and foreground are related by a function, which corresponds to the assignment function h for the designated variable X.

We take *gerade* to denote the following conditions on assignment functions g, h, h' between background and foreground, where $g \subseteq h$ and $g \subseteq h'$, AFV stands for the actual focus value, and $\phi[X]$ stands for a formula ϕ containing a condition X.

(3) $[\![\text{gerade}]\!] = \exists h \exists g[([\![\phi[X]]\!]^{g,h} = 1) \wedge h(X) = \text{AFV} \wedge \exists \mu[C(\mu) \wedge \forall h'[h'(X) \neq h(X) \rightarrow \mu(h(X)) > \mu(h'(X))]]]$

g corresponds to the assignment function fixing all values in the background; h extends g by assigning the actual focus value to X. Functions h' that differ from h in the value they assign to X, are given a lower value than $h(X)$ by a contextually fixed measure function μ. For example (1), (3) amounts to the following: all alternative assignments h' for cars with some property X (other than being red) are contextually lower valued for being often stolen cars, so cars that are most typically often stolen are the red ones. Intuitively, this is what (1) corresponds to.

Let us now turn to the temporal uses of *gerade*. We claim that they can straightforwardly be derived from the semantics attributed to the particle in (3). *Gerade* has two temporal uses: the 'progressive' use (4a), and the 'immediate anteriority' use (4b). In (4a), *gerade* eliminates an otherwise dominant sequential reading (while maintaining the progressive reading). In (4b), the otherwise unspecified anteriority has to be immediate, whenever *gerade* is present.

(4) a. Als ich bei ihm läutete, wachte er gerade auf.
When I at him ringed, woke he GERADE up.
'When I rang at his place, he was waking up.'

b. Hans ist gerade aufgewacht.
H. is GERADE awoken.
'Hans has just awoken.'

We assume that the verbal predicate (or a part thereof) is the associate in (4a). *Gerade* tells us that the *R* time, which is when I rang at his place, is best characterised as a time when his waking up took place. The crucial point in deriving the progressive reading is that the moment of reference *R* is not part of the focus, and needs therefore to be part of the sentence background. This means that *R* must be discourse-given. Temporal progression in discourse is achieved in DRT by the introduction of a new *R* into a DRS. Since *R* must be given, progression cannot occur, and the predicate must attach to the already given *R*. In this way, we can account for the fact that *gerade* eliminates the sequential reading. Furthermore, since *gerade* as a 'focaliser' involves comparison amongst alternatives to the actually asserted focus value, we predict a sentence to be infelicitous if the focus value is necessarily true or excludes alternatives, as in (5):

(5) #7 ist gerade eine Primzahl.
7 is GERADE a prime number.
'7 is (for now) a prime number.'

As for the immediate anteriority reading illustrated in (4b), *gerade* says that *R*, which is the present time, is best characterised as a time within the perfect state of an event of Hans waking up. We assume that the verbal projection, including the PERFECT feature, ends up in the focus part, whereas TENSE and the subject are in the background, see (6), where n is now, i is an interval (here *R*), s is a perfect state, e an event, and $\prec$ means 'precedes'.

(6) a. Background: $[x,n,i|\text{Hans}(x), n \subseteq i, \mathbf{X}(i)]$

b. Foreground: $[x,n,i,e,s|\text{Hans}(x), n \subseteq i, i \subseteq s, e \prec i, \text{arrive}(e)]$

We assume the PERFECT to denote a relation of anteriority, with a link between the event itself and *R*, encoded as a perfect state. The perfect state itself is generally assumed to be given, or inferrable from given information (cf. Portner (2003)). How can (6b) be an optimal match w.r.t. (6a)? The idea is the following: the focus-part contributes a link between two eventualities, and ceteris paribus, the stronger the link, the better the predicate. The closer the event is to i, the more unlikely it is that some event could interfere with the perfect state, and immediate anteriority provides a guarantee for a strong link. But still, the notion of 'immediacy' is vague—which is what we want, since what is to count as immediate anteriority is highly context dependent.

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