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Referential anchoring, individual concepts, and weak and strong determiners^{*}

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1. Introduction

In this paper, I argue that the subject plays a crucial role in situationally anchoring the predicate of the clause. It is generally assumed that clausal predication is referentially anchored to the speech situation in terms of temporal (and modal) information expressed on the finite verb. While this is certainly correct, there are contexts in which referential anchoring by the verb alone is not sufficient, as is illustrated in (1).

- (1) a. John visited his mother. (e_1)
b. She was sick. (e_2)
c. $e_1 < e_2 < s$, $e_2 < e_1 < s$, $e_1 \circ e_2 < s$
d. She was sick one week before/after.

Anaphorically linking *she* to *his mother* the meaning of (1b) amounts to the claim that there is an event of sickness in the past whose theme is John's mother. Interpreting only the temporal information on the verb in (1b) yields the (temporal) readings given in (1c): since no particular order between e_1 and e_2 is established, the two events may precede, follow or overlap with each other as long as both of them precede the speech event. This rendition is incomplete since speakers typically interpret (1b) as a claim about John's mother being sick at the time of his visit.

One may assume that this specification in meaning is due to a pragmatic mechanism that instantiates the non-specified discourse relation between (1a) and (1b). For instance, one may propose that the utterance in (1b) is relevant in the context of the utterance of (1a) only if the speaker intends to say that there was a temporal overlap between John's visit and his mother's sickness. Note that this will not do, since there are linguistic expressions that explicitly refer to the time of John's visit as a reference point, as is indicated in (1d), requiring the grammatical presence of a reference time, as proposed by Reichenbach (1947).

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The proposal that I would like to make in this paper is that the reference time in (1c) is not determined by verbal categories like Tense and Mood directly, but crucially mediated by the subject. The anaphoric subject in (1b) and (1d) refers to a discourse antecedent that has been established in a previous event in the context, namely the event of John's visit, and it is this event with respect to which the predicate (and the temporal adverbs) are (temporally) situated in (1b) and (1d).

There are various possibilities conceivable for achieving this temporal anaphoric link. One way that I will argue for in this paper is the assumption that nominal expressions are individual concepts, that is to say, they are individuated with respect to an event (cf. Carnap 1928, Elbourne 2005). Nominal expressions in this approach are not one-place predicates anymore as in (2a) but must be analysed as two-place predicates, relating an event and the individuals present in the event, as is illustrated in (2b). I will refer to expressions like (2b) as nominal descriptions. A definite description combines a definite determiner with a nominal description that expresses a relation. I assume that the definite determiner combines two presuppositions: a) that there is a unique individual that satisfies the nominal description in e and b) that the event e in its domain is an element of the set of events (pre-established) in the context. This condition will be extended to all strong determiners later. The lexical entry for the definite determiner is given in (2c).

- (2) a. $\lambda x. \text{man}(x)$
 b. $\lambda e. \lambda x. \text{man}(x)(e)$
 c. $[[\text{the}]]c = \text{lambda } f_{\langle s,et \rangle}. \text{lambda } e_{\langle s \rangle} : \text{there is a unique } x \text{ such that } f(e)(x) = 1 \text{ and } e \text{ is a member of the set of events in } c . \text{ the unique } x \text{ such that } f(e)(x) = 1.$

The assumption that there is a reference event or a topical situation with respect to which a proposition is evaluated is not new nor is the assumption that individual concepts underlie the reference to individuals (cf. Enc 1987, Musan 1997 and Herburger 2000 among others). Elbourne (2005) treats individual concepts as functions that map events onto individuals (cf. f and g in (3b)) and proposes that the content of the speech act of assertion is analysed as an Austinian proposition, that is, a pair of a topic situation about which the speaker tends to say something and a proposition that is a set of situations, as in (3): if the topic situation is a member of the set, the speaker has spoken truly (cf. Austin 1961, Barwise and Perry 1983, 160, Kratzer 2004, 2006).

- (3) a. Mary greets John.
 b. $\lambda s. \text{Mary greets John in } s \ \& \ \text{Mary} = f(s) \ \& \ \text{John} = g(s)$

Note, however, that in this approach nominals and the verb are always evaluated with respect to the same event/situation. But there are good arguments for at least two cases in which a nominal must be evaluated with respect to an event different from that of the verb that takes it as an argument: relativized DPs, as in (4), and DPs with a strong or categorical interpretation, as in (5).

- (4) a. John read the book that Mary recommended.
 b. in s_2 John read the unique book x in s_1 such that Mary recommended x in s_1

- (5) a. weil hier viele Männer arbeiten (existential, weak, cardinal interpretation)
 since here many men work
- b. weil viele Männer hier arbeiten (proportional, strong interpretation)
 since many men here work

In (4) the relative DP *the book* must be evaluated with respect to the embedded event (rather than with respect to the matrix event) and in (5b), contrary to (5a), the DP *viele Männer* is evaluated with respect to an event that is given in the discourse and introduces the set of men that are under discussion.

2. From Milsark's generalisation to Brentano's distinction between judgment forms

Milsark (1974) proposed a two way distinction between DPs, a two way classification of one-place predicates and a generalisation about how these elements can be combined. In particular, he proposed that DPs can have either a cardinality or a true quantificational interpretation and divided one-place predicates into those expressing state descriptions (stage level predicates) and those expressing properties (individual level predicates). His famous generalisation has it that properties can only be predicated of strong DPs, as illustrated in (6). In (6c), *sm* stands for weak unstressed *some*.

- (6) a. The man is sick. (strong + SL)
 b. The man is intelligent. (strong + IL)
 c. Sm men are sick. (weak + SL)
 d. *Sm men are intelligent. (weak + IL)

Diesing (1992) takes up Milsark's generalisation and tries to derive it with a number of assumptions about the interface between syntax and semantics. Following Kratzer (1989), she assumes that weak readings of indefinites are the result of existential closure of a free variable, while strong readings involve quantificational operators. The domain of existential closure is the VP (the vP in present terminology), which contains the base position of subjects. Observing that raising predicates allow reconstruction but control predicates do not, Diesing proposes that the INFL head of IL-predicates is transitive, while SL-predicates may also combine with an unaccusative INFL. It therefore follows that subjects of IL-predicates cannot reconstruct and therefore cannot obtain a weak interpretation. I think the argument goes through but is based on a mere stipulation about INFL-types.

Ladusaw (1994) argues that Milsark's generalisation can be derived from Brentano's distinction betweenthetic and categorical judgments. According to Brentano athetic judgment consists in the presentation of an object, an entity or eventuality, and constitutes a simple judgment. A categorical judgment in contrast constitutes a double judgment, since it consists in the act of the recognition of the object that is made to be the subject and the act of affirming or denying what is expressed by the predicate about this subject. As is pointed out by Ladusaw (1994), the importance of this distinction consists in the fact "that one judgment form involves a presupposed subject in the sense that a

precondition for making the judgment is that the mind of the judger must be directed first to an individual before the predicate can be connected to it” (Ladusaw 1994, 3).

Ladusaw (1994) then proposes that what Brentano called presentations should be equated with (nominal) descriptions and that predication should be treated as a relation between an object and a property (basic in the case of IL-predicates or derived from a description). Since a description (for instance, the description *a cat sleeping in the garden* in the thetic judgment in (7a)) is itself a composition of an eventuality description with various individual descriptions, the theory of argument saturation must be taken to work on two levels, according to Ladusaw, either by restricting a parameter in an eventuality description with another description or specifying an object as the value of the parameter.

- (7) a. There was a cat sleeping in the garden. (thetic judgment)
 b. The cat was sleeping in the garden. (categorical judgment)

Before we address this point, let us discuss how the present account would treat the pragmatic differences between a thetic and a categorical judgment. (7a) can be analysed as the claim that there is a sleeping event in the garden that took place in the past and has a cat in it, as given in (8a). The meaning of (7b) can be analysed as given in (8b) in the present account, that is, as a claim about the existence of an event e_2 such that the unique cat in a contextually given event e_1 is the agent of e_2 that was a sleeping event taking place in the garden, where the predicate $\text{in}(e,e')$ represents the contribution of imperfective Aspect, which relates e_2 to the reference event e_1 .

- (8) a. $\exists e[\text{sleeping}(e) \ \& \ \text{past}(e,e_s) \ \& \ \exists x[\text{agent}(e,x) \ \& \ \text{location}(e,\text{in the garden}) \ \& \ \text{cat}(e,x)]]$
 b. a is the unique cat in e_1 $\& \ \exists e_2[\text{agent}(a,e_2) \ \& \ \text{past}(e_1,e_s) \ \& \ \text{sleeping}(e_2) \ \& \ \text{location}(e_2,\text{in the garden}) \ \& \ \text{in}(e_1,e_2)].$

The crucial point is, while the cat in (8b) is already individuated with respect to a given event – note that e_1 is not existentially bound since it is not part of the commitment of the speaker that there is such an event, but is rather presupposed by the use of the definite determiner – the cat in (8a) has not been individuated before, but enters the picture as a participant of an event to which the speaker has an existential commitment, accounting for its indefinite, existential interpretation. As Ladusaw puts it “in Brentano’s view of the existential commitment of a thetic judgment, only one description is affirmed; only the existence of the eventuality is affirmed, but commitment to that description will indirectly commit the judger to the existence of the cat” (Ladusaw 1994, 5).

In other words, since the speaker in (7a) is committed to the existence of an event of sleeping, he is also committed – by the very meaning of the term *sleeping* – to the existence of an agent and since the agent of sleeping is identified with the cat, he is also committed to the existence of the cat, representing the effects of unselective existential closure of the description in the account of Diesing (1992). In the following section, I will address the issue of how the logical forms in (8) can be derived from standard assumptions in event semantics.

3. Two modes of argument saturation

The first option of argument saturation of course consists in functional application that involves an individual and a (derived) property. In the present account, this operation can only occur outside of the vP and involves a prior step of event identification (cf. Kratzer 1996) between the event argument of the subject and the reference event of Tense, as I will argue below. The second option consists in predicate modification. Before we address the interpretation of weak DPs in the vP, let us see what is meant with the operation of event identification.

Kratzer (1996) proposes that the external argument of the verb, typically the agent argument, is introduced by a separate functional head that she identifies with a Voice head defined as in (9). As a consequence a referential DP inserted in [Spec, VoiceP] is interpreted as the agent of the relevant event.

$$(9) \quad [[\text{Voice}^0]] = \lambda x. \lambda e. \text{agent}(x, e)$$

However, note that this voice head must first combine with the meaning of the complement VP to derive the correct interpretation of an agentive verb as in (10a). Assuming that the interpretation of the VP complement of our Voice head is as given in (10b), we note that the meanings of (9) and (10b) are not compatible because of a type mismatch. As a consequence, Kratzer (1996, 122) proposes event identification as a special rule of composition according to which functions f and g combine, yielding a new function h : $\langle e, \langle s, t \rangle \rangle \ \& \ \langle s, t \rangle \ \rightarrow \ \langle e, \langle s, t \rangle \rangle$, as is illustrated in (10c). Applying the resultant function in (10c) to the individual *John* in (10a) (via functional application) then yields the correct interpretation in (10d).

- (10) a. John is sleeping in the garden.
 b. VP = $\lambda e. \text{sleeping}(e) \ \& \ \text{location}(e, \text{in the garden})$
 c. $[[(9) [(10b)]]] = \lambda x. \lambda e. \text{agent}(x, e) \ \& \ \text{sleeping}(e) \ \& \ \text{location}(e, \text{in the garden})$
 d. $\lambda e. \text{agent}(\text{John}, e) \ \& \ \text{sleeping}(e) \ \& \ \text{location}(e, \text{in the garden})$

In simple words, the effect of this compositional rule is that the agentive event is identified with the event denoted by the VP, that is, with the event of sleeping in the garden.

Now, I would like to address the question of how weak DPs are interpreted in this account. We noted above that it is crucial that the subject of athetic judgment like (7a) does not denote an object but constitutes a nominal description of the type $\lambda e. \lambda x. \text{cat}(e, x)$. The semantic type of this description is not compatible with the meaning of the voice head in (9). In particular, it cannot combine with the Voice head via functional application as in (10d) above. The nominal description must combine via the rule of predicate modification (cf. Heim & Kratzer 1998) generalized to predicates of the type $\langle s, et \rangle$.¹

¹I thank Clemens Mayr for pointing this out to me.

In the case at hand, that is (7a), this involves the identification of the event argument of the nominal description with the agentive event as well as the identification of its entity argument with the entity argument of the agent relation. Our case is only different in that there is an additional restriction to the final step that comes from the meaning of the nominal description. I assume that the so-called indefinite determiner *a* occupies a Number head specifying the condition that there is *one* individual (at least one assignment) for which the nominal description *cat* is true in a given event, hence the final abstraction over this argument does not involve the λ -operator but can and must be strengthened to the existential operator, as is illustrated in (11).

(11) $\lambda e \exists x. \text{cat}(e,x) \ \& \ \text{agent}(e,x) \ \& \ \text{sleeping}(e) \ \& \ \text{location}(e, \text{in the garden})$

It must be noted, however, that in the present account a strong DP cannot be interpreted in the vP , that is in [Spec, VoiceP], as in Kratzer's account. The event argument of the definite description *the cat* in (7b) cannot be identified with the event argument of the verb, due to the presupposition of the definite determiner. Furthermore, functional application will fail to apply to it as long as the definite description is not assigned a value for its event argument. In the following section, I will argue that this value assignment happens at a later step in the derivation.

4. The role of Tense and Finiteness in referential anchoring

We are now in a position to explain why subjects in [Spec, TP] serve to anchor the predicate denoted by the verb (phrase), as in (1) above. It is T that – by establishing a relation between speech time and reference time – introduces two more event arguments in addition to the one introduced by the verb. According to Reichenbach (1947), Tense establishes a link between speech time and reference time, as is illustrated in (12). The event denoted by the verb is then situated with respect to the reference time by Aspect, as is illustrated in (13).

(12) *The meaning of tense according to Reichenbach (1947)*

- a. $[[\text{Past}]] = \lambda s. \lambda r. r < s$
- b. $[[\text{Present}]] = \lambda s. \lambda r. s \subseteq r$

(13) *The meaning of aspect according to Reichenbach (1947)*

- a. $[[\text{Perfect}]] = \lambda e. \lambda r. e < r$
- b. $[[\text{Imperfect}]] = \lambda e. \lambda r. r \subset e$

I propose that the Spec-head relation between the subject and T is interpreted as the identification of the event arguments of the subject and T. In other words, the reference time of T (and henceforth of the verb) is identified with the event with respect to which the subject is evaluated in the discourse. This means that the subject and the verbal predicate (modulated by verbal aspect) are evaluated with respect to the same topical situation. The assertion then corresponds to the claim that there exists a (new) situation denoted by the verb that is situated via Tense and Aspect with respect to this topic

situation. If we now assume that value assignment to free variables is not unconstrained but restricted to specific syntactic positions and also make the reasonable assumption that the values for speech time and reference time are assigned in FinP in Rizzi's expanded C-domain (Rizzi 1997), it follows that the subject serves to anchor the predicate. For reasons of minimality, the Fin-head will enter into an Agree-relation with the constituent in [Spec,TP], rather than with the T-head. After the subject has been assigned a referential value for its event argument, either in [Spec,FinP] or in [Spec,TP] (via the Agree-relation), the property derived via λ -abstraction over the verb's agent role can be predicated of it, giving rise to the interpretation represented in (8b) of the sentence in (7b) above.

However, note that not all subjects qualify as *anchors* for the main predicate. In particular indefinite DPs are not evaluated with respect to a pre-established event in the context. As we have seen above, the event argument of the indefinite DP is identified with the event argument of the verb in this case. Thus, the predicate has to be anchored in an alternative way.

4.1 Alternative anchors in English

In English, the adverbial *there* is inserted in [Spec,TP] in this case. I will argue that *there* is not an expletive element but serves semantically as an alternative anchor in the clause, as is illustrated in (14a,b).

- (14) a. John visited his mother.
 b. There was a child crying in the garden.
 c. I went to the local bar last night. Into the room walked a man with a green hat
 ...

In the present account, *there* is a function that maps an event onto its location and by referring back to the event of John's visit, provides the event with respect to which the predicate *was a child crying in the garden* is temporally and locally evaluated.

In conclusion, subject-verb agreement probably results from the grammaticalisation of this important relation between subject and Tense, but what is crucial is that a referentially anchored expression enters into a Spec-head relation with T, allowing for the temporal location of the event denoted by the predicate. That is why PPs, by denoting the resultant location of a predicate expressing a change of state (location) can serve as subject/anchor in cases of locative inversion, as illustrated in (14c). The theory that I am proposing also permits a direct way of accounting for cross-sentential anaphora and bridging relations: the use of the definite determiner in the PP *into the room* in (14c) is sanctioned by the bridging relation between the local bar in the topical situation and the room that pertains to it based on the requirement that the locative PP is evaluated with respect to the very same topical situation. Similar considerations apply to the use of the definite determiner in the DP *the garden* in (14b).

4.2 Silent anchors and the interpretation of weak subjects

At this point the question arises how the case that combines a weak subject with a SL predicate in (6c) above can be derived in the present account. To address this question, let us first see in which kind of context an assertion as in (6c) would be appropriate. (15) provides such a context: a situation is introduced that is characterized as bad since there were women dying and men sick in it.

- (15) a. It was a terrible situation.
b. Some men were sick and some women were (even) dying.

The strong readings of the two subject DPs involve a small proportion of the men and women in the topical situation. This is achieved by moving the respective subject argument into [Spec,TP], where its event argument is identified with the situation under discussion. The weak readings in (15b), however, must be derived with a silent substitute in [Spec,TP], with the subjects occupying a lower position, possibly [Spec,AspP], in the present account. Some evidence for this assumption comes from the parallel cases in (16). In (16b) only the strong interpretation of the subject is available. Enforcing a weak interpretation with the reduced indefinite pronoun results in ungrammaticality, as illustrated in (16c). The intended meaning of (16c) can only be expressed via (16d) involving an alternative anchor or by the version given in (16e).

- (16) a. It was a very good situation.
b. Some men were not sick.
c. *Sm men were not sick.
d. There were no sick men.
e. No men were sick.

I assume that the ungrammaticality of (16c) indicates that a weak subject cannot be moved into [Spec,TP] (across sentential negation) and propose that the weak reading of the subject in (16e) is represented as given in (17). [Spec,TP] is occupied by a silent locative pronoun and the subject is realized in [Spec,AspP] below sentential negation. The weak negative determiner *no* is analysed as the combination of sentential negation and the weak determiner *sm* in the specifier below it. The strong reading (irrelevant in the present example), in contradistinction to this, involves the presence of the strong negative quantifier within the subject DP in [Spec,TP], where *no men* is interpreted as no individual in the set of men in the topical situation. In the present account, this follows from the assumption that strong quantifiers impose the presupposition that the event argument of their nominal complement must be an element of the set of events in the context, necessitating that the event argument of the subject is identified with the reference event of T.

- (17) a. [_{TP} LOC [not [_{AspP} sm men are [_{VP} t sick]]]] weak reading
 |
 _____ no
- b. [_{TP} no men are [_{AspP} [_{VP} t sick]]] strong reading

There is substantial cross-linguistic evidence for the analysis in (17) that comes from parallel German and Dutch data. In German, the different positions of strong and weak subjects can be made evident with TP-related temporal and locative adverbs, as we have seen in (5) above. In Dutch, as in German, a weak subject is realized in a lower position, but differently from both German and English, the anchoring substitute is spelled out in terms of the weak form of the R-pronoun (*daar,er*), as is illustrated in (18).

- (18) a. omdat er hier veel mannen werken weak reading
because LOC here many men work
- b. omdat veel mannen hier werken strong reading
because many men here work

To summarize, the systematic ambiguity of sentences like *some men were drunk* in English does not result from the reconstructability of the subject into a vP-internal position with SL-predicates in the present account (contra Diesing 1992), but involves the licensing of the subject in two different positions (that are visible in German and Dutch). The higher position [Spec,TP] is only compatible with discourse anaphoric arguments, that is, with arguments that receive a presuppositional or strong interpretation, and serves to anchor the subject and predicate with respect to the same reference event. The lower position hosts non-presuppositional weak subjects that are evaluated with respect to the event denoted by the verb. In this case, [Spec,TP] is occupied by a possibly silent locative pronoun that serves as an alternative anchor for the predicate.

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