

On the scalar semantics of the focus-associating adverb *you* in Mandarin Chinese

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OVERVIEW: Focus particles like *already* and *still* operate on time-sensitive alternatives. They are ‘aspectual’ focus particles in the sense of König (1991). Not many studies emphasize on how such particles embody the typical features of well-studied focus-associating particles, such as scalarity. In this article, I present an understudied aspectual focus particle *you* (lit. ‘already’ or ‘as great as’) in Mandarin Chinese. An example is shown in (1). I argue that *you* is a scalar focus particle, and the scale that *you* operates on is a scale of entailment relation. The assertion is on the top of the scale. This analysis partly follows Krifka’s analysis on *already*, in which the alternatives are aligned on a pragmatic scale that maps to a time scale (Krifka 2012). The existence of *you* adds to the typological possibilities of aspectual focus adverbs.

DATA: *You* is immediately followed by a focused phrase (see (1)). The phrases are always quantity expressions that can be aligned on a natural scale, such as duration, quantity, frequency, and length. The sentence implies that the prejacent exceeds one’s expectation in the dimensions indicated by the focused phrase at the reference time.

THE PUZZLE: Compared to *already*, it is quite unexpected that *you* cannot appear in a sentence in which the quantity of the focused phrase decreases with time. An example is (2), a foot race scenario, in which the distance between the runner Afu and the finish line decreases as time goes by. The sentence is infelicitous. Yet the English translation with *already* is acceptable. Conversely, Afu’s distance from the starting line increases as time progresses, and the sentence (1) is acceptable. (1) and (2) are illustrated in (3a) and (3b) respectively. In (3a), time and distance increase in the same direction, whereas in (3b), the two lines go in the opposite direction. Here t represents the reference time, and t_1 and t_2 precedes the reference time.

THE TWO SCALE PARADIGM: The puzzle of *you* can be accounted for if the alternatives of *you* are mapped to time in a certain manner. In other words, two scales are required. One is the scale on which the alternatives are aligned, and the other is the time scale. This correlation between two scales is mentioned in Krifka (2012). According to Krifka (2012), when *already* is associated with a focus in its scope (e.g. ‘John already weighs [80kg]_F.’), the sentence presupposes that the alternatives are aligned on a contextually given scale, and they map monotonically to a time scale according to the reference times of the alternatives, as illustrated in (4). Yet this analysis is obviously not sufficient to account for the case of *you*.

THE ENTAILMENT SCALE: In the *you* structure, the contrast between (1) and (2) can be accounted for by a certain entailment relation between the alternatives: the alternatives are aligned on a scale of entailment relation that holds between propositions anchored at a given time, which can be the reference time. Note that the distances here all have an ‘at least’ reading in their semantics. In the ‘increasing’ sentence (1), the alternatives such as ‘Afu is 100/200 meters away from the finish line’ are always entailed by the prejacent at the reference time (‘Afu is 300 meters away from the starting line at t ’ entails ‘Afu is 100/200 meters away from the starting line at t ’). Furthermore, the alternatives are true before the reference time (‘Afu is 100/200 meters away from the starting line at t_1/t_2 ’ and $t_1 \leq t_2 \leq t$). Thus, the prejacent always entails earlier alternatives. In contrast, in the ‘decreasing’ sentence (2), the later alternative does not entail earlier alternative at the reference time (‘Afu is 300 meters away from the finish line at t ’ does not entail ‘Afu is 400/500 meters from the finish line at t ’). Thus a regular notion of pragmatic entailment would not suffice to explain the contrast.

ANALYSIS: Therefore I make these three claims. (i) *You* presupposes that the alternatives are aligned on a scale of entailment relation that holds at a given time. I call this an ‘anchored entailment relation’ ‘ \rightarrow_t ’ (see (6)): for any time t , and alternatives P and Q , P at t entails Q at t . Thus, the assertion entails all other alternatives at the reference time. (ii) This entailment relation can account for the implication that the assertion exceeds the speaker’s expectations. The speaker compares all the alternatives at the reference time. Since the assertion entails and exceeds the other alternatives, we get the reading that it exceeds the speaker’s expectation. (iii) These implications are the presupposition of *you*, as shown by common presupposition tests. For example, sentence (5) shows that when the sentence is negated, the alternatives considered can only be entailed by the assertion of the first sentence. Thus, then second sentence is infelicitous (e.g. #4>3). This indicates that the alternatives considered should always be entailed by the prejacent, and it is part of the presupposition.

FORMALIZATION: In order to capture the time sensitivity of *you*, I adopt Montague’s coordinate semantics (Montague 1973), which states that a tensed proposition is true of a pair of world and time, and I further assume that as other focus adverbs, *you* takes propositional scope (Rooth 1992, among others). In (7), C_2 is the set of alternatives, Q are other alternatives in C_2 , and P is the prejacent. (7a) requires that the assertion entails the alternatives with the anchored entailment relation. (7b) means that if the alternatives are true at some time other than t , the time must precede t . (7b) allows the possibility that the alternatives are only true at the reference time, not at any earlier times in the case where $t' = t$. In other words, the alternatives do not need to true at any time other than the reference time. The lexical entry of *you* and an example of the derivation are shown in (8) and (9) respectively.

CONCLUSION: *You* is a scalar particle that operates on alternatives that are ordered with respect to their times. The scale of *you* can be subsumed by a special entailment relation between any two of the alternatives. Since *you* is mainly found as a perfective marker, the above described use of *you* might be ultimately followed from a unified analysis on the perfective use of *you*. We will leave this for future research.

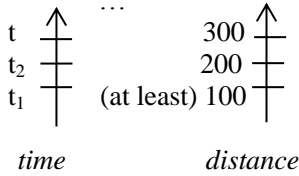
EXAMPLES:

(1) Afu li qidian you [sanbai gongchi]_F le.
 Afu from starting line you three-hundred meter Perf
 ‘The distance of Afu from the starting line is already/as great as 300 meters.’

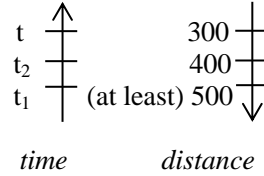
Implication: the distance from the starting line is rather long, and longer than one’s expectation at the reference time.

(2) #Afu li zhongdian you [sanbai gongchi]_F le.
 Afu from finish line you three-hundred meter Perf
 ‘The distance of Afu from the finish line is already/as great as 300 meters.’

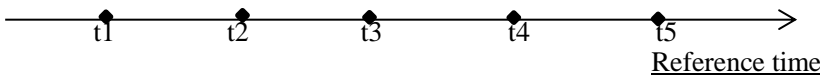
(3) a. Illustration of (1)



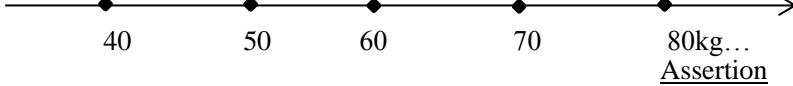
b. Illustration of (2)



(4) John already weighs [80kg]_F.
 Time scale:



Alignment of possible alternatives (a contextually given scale):



(5) Afu bingmeiyou chi fan chi-le you [san-wan]_F. #Ta chi-le si-wan.
 Afu not eat rice eat-Perf you three-bowl He eat-Perf four-bowl
 ‘It was not the case that Afu ate as many as three bowls of rice. He ate four bowls of rice.’

(6) **Anchored entailment ‘→_t’ relative to t:**

W=the set of all possible worlds; T=the set of all times

$$\forall P \forall Q \in (W \times T) [[P \rightarrow_t Q] \leftrightarrow \forall w \forall t [P(\langle w, t \rangle) = 1 \rightarrow Q(\langle w, t \rangle) = 1]]$$

Presuppositions of you:

(7) For a contextually determined set C₂, the assertion P, and alternatives Q in the set of C₂:

[[you]^{c, g, <w, t>}(C₂)(P) is defined only if

$$[P \rightarrow_t Q] \quad (a) \text{ Anchored entailment ‘}\rightarrow_t\text{’}$$

$$\wedge \exists t'' [Q(\langle w, t'' \rangle) = 1 \rightarrow t'' \leq t] \quad (b)$$

if defined, then P(<w, t>)=1 if [P →_t Q] ∧ ∃t'' [Q(<w, t'')=1 → t'' ≤ t]

Lexical entry of you:

$$(8) [[you]^{c, g, \langle w, t \rangle} = \lambda C_{\langle \langle i, t \rangle, \langle \rangle \rangle}. \lambda P_{\langle i, t \rangle}. \forall w \forall t (P(\langle w, t \rangle) = 1 \rightarrow Q(\langle w, t \rangle) = 1) \wedge \exists t'' (t'' \leq t \ \& \ Q(\langle w, t'' \rangle))]. P(\langle w, t \rangle)$$

The derivation for (1):

(9) [[you (C₂)] [~C₂ [Afu is 300 meters from the starting line]]]^{c, g, <w, t>} is defined only if

a. for all alternatives Q in C₂, if Q is true in w at t, Afu is 300 meters from the starting line in w at t entails Q in w at t and,

b. there exists some time t'' that precedes or equals t at which Q is true;
 if defined,

$$[[you (C_2)] [\sim C_2 [Afu is 300 meters from the starting line]]]^{c, g, \langle w, t \rangle} = 1 \text{ iff Afu is 300 meters from the starting line.}$$

SELECTED REFERENCES:

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