

Split-noun sentences in Mandarin and in German: Production and perception

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Introduction:

Pan's syntactic analysis (2003) suggested that Mandarin split nominal constituent is focused. He argued that when the focus phrase that contains the empty head noun is adjacent to the topicalized noun, it can establish a predicative relation with the topicalized noun. Féry (2005) proposes that the marked tonal pattern of split structures in German triggers an additional prosodic phrase. Furthermore, there might be two information structural patterns in German: the split noun is topicalized and the remainder of the sentence is generally focused, or the split noun is focused and the remainder is a deaccented background.

Aims:

- To compare the prosodic realization of the split nominal construction in Mandarin and in German both in topic and focus context.
- To study the extent to which the split sentences are accepted by listeners and whether the prosodic characteristics are sufficient to distinguish the split sentences in a topic context from those in a focus context.

I. Production Experiments:

1.1 Reading Materials: Split sentences

20 Mandarin and 8 German target sentences were constructed.

Chinese: (1a) shuqian BaoXin diu le san zhang. (bookmarks BaoXin lose asp three clas. 'Bao Xin lost three bookmarks.')
German: (1b) Birnen hat sie einige gekauft. (pears aux she some bought. 'She bought some pears')

1.2 Reading Materials: Context questions

Chinese: Focus context: Bao Xin diu le san zhang shenme? (What did BaoXin lose three of?) Topic context: Wo tingshuo baoxin diu.le shuqian he benzi, shi zhen de ma? (I heard that Bao Xin lost bookmarks and notebooks. Is that true?)
German: Focus context: Was hat sie einige gekauft? (What did she buy some of?) Topic context: Ich habe gehört, dass sie Birnen und Äpfel gekauft hat. Ist es wahr? (I heard that she bought pears and apples. Is that true?)

1.3 Participants

Six female German speakers and 7 Mandarin speakers (5 female and 2 male speakers) participated in the speech production experiments.

1.4 Recording procedures

The participants were recorded individually in a quiet room. During each trial, a sentence was shown on the computer screen, and the subject was asked to say it in a natural way at normal speech rate.

1.5 Acoustic Measurement

The F0 and the boundaries of each syllable (Mandarin)/word (German) were manually labeled using Xu's Praat script (1999, 2005).

IV. References:

Pan H.H., Hu J.H. (2003) Head Noun Movement, Focus, and Topicalization in Mandarin Chinese, In: Xu, J. Donghong Ji, and Kim Teng Lau (eds.) *Chinese Syntax and Semantics*, Singapore, 2003, 119-156
Xu (2005): <http://www.phon.ucl.ac.uk/home/yi/downloads.html>

1.6 Results:

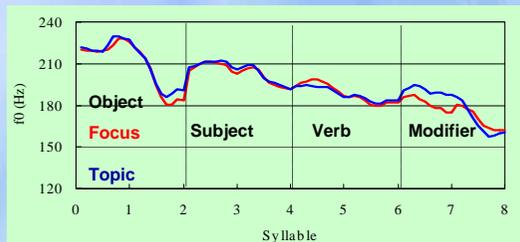


Figure 1. Intonational contours of Chinese split sentences in the two contexts

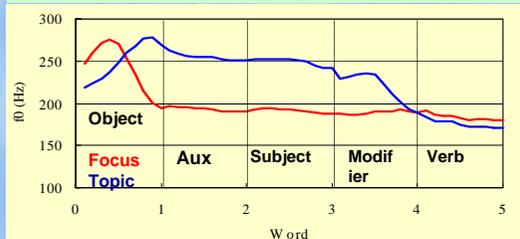


Figure 2. Intonational contours of German split sentences in the two contexts

Table 1. Pause length after the split noun

	Mandarin (all 7 speakers)	German (only 3 speakers)
Focus context	248 ms	35.8 ms
Topic context	189 ms	5 ms

II. Perception Experiments:

The question and answer pairs from the speech production experiments were cross-spliced and matched. They were played in sequence to the participants. The task is to judge whether the intonation of the answer was a good match to the question. A 10-point scale was used, with 10 being the best. 21 Mandarin and so far 6 German participants joined in the experiment.

Table 2. The average value of the judgment (10 is the best)

	Mandarin		German	
	Answer-Focus	Answer-Topic	Answer-Focus	Answer-Topic
Question-Focus	6.83	5.91	7.54	4.04
Question-Topic	5.63	5.11	6.5	4.93

III. Conclusions:

- Split sentence is a marked structure in Mandarin, that induces a long pause after the split noun. In German, the construction is more natural, and the pause after the noun is much shorter and not obligatory.
- The difference of the intonational contour between the two contexts in Mandarin shows that in the topic context, the modifier is realized with a raised F0, as a narrow focus, while in the focus context, it is part of a wide focus. In both contexts, the split noun is accented with high F0. In German, the split sentence in the topic context shows the typical hat pattern, while in the focus context, the split noun has a falling tone and the remainder of the sentence is deaccented.
- As revealed by the perception experiments, listeners perceive the difference quite well of the focus context. The intonational contours differ more between the two contexts in German than in Mandarin, and as a result, the German listeners can distinguish the two patterns better than the Mandarin listeners.