Focus Particles and Negative Polarity Items

The English focus particle *even* is known to introduce a scalar presupposition (ScalarP) given in (1); (2) presupposes that ‘that Bill saw Alan’ is the least-likely proposition among alternatives (LeastP). When *even* occurs in downward-entailing (DE) contexts, we observe ambiguity between LeastP and MostP (‘that Alan saw Bill’ is the most-likely proposition), as in (3). One theory holds that the ambiguity is due to the scope interaction between *even* and a DE expression (Karttunen and Peters 1979); when *even* is under *doubt*, we obtain LeastP, while, when *even* takes scope over *doubt*, the likelihood scale gets reversed by the DE operator *doubt*, yielding MostP. The other theory holds that *even* is lexically ambiguous between a regular *even* with (1) and an NPI *even* with (4) (Rooth 1985). Cross-linguistic data have been provided in favor of the lexical theory; in 0, *sogar* ‘even’ allows LeastP only, while *auch nur* ‘also only’ allows MostP only, suggesting that *sogar* is a regular *even* and *auch nur* is an NPI *even*. Indeed, *sogar*, but not *auch nur*, is acceptable in positive contexts. Just like 0, the Japanese examples in (6) seem to suggest that *-mo* ‘even’ and *-demo* ‘even’ are a regular *even*, while *-dake-demo* ‘only even’ is an NPI *even*. Indeed, *-mol-demo*, but not *-dake-demo*, is licensed in positive contexts. However, the distribution of these items in negative contexts casts doubt on this analysis. In negative contexts, only MostP is available in English, and *auch nur*, but not *sogar*, is licensed in German. In contrast, in Japanese, *-dake-demo*, which behaves like an NPI *even* in (6), cannot be licensed in negative contexts, as in (7), while *-mol-demo* can. Under the lexical theory, we may need to posit two types of NPI *even*; one licensed by negation (*-mol-demo*) and one by other DE operators (*-dake-demo*). However, it is not clear why there are two types and why there are two forms for the first type. In this paper, based on a scope theory, I account for the distribution of Japanese *even* and further extend the analysis to the data on Japanese NPIs.

The scope of negation in Japanese is known to be ‘narrow’ (Kuno 1980); as in (8), negation never takes scope over a quantificational element in a sentence. Then *-mol-demo* necessarily take scope over negation, yielding MostP. Moreover, the fact that *-mol-demo* only allow LeastP, as in (6), suggests that they cannot move above other DE operators. As for *-dake-demo*, I account for its distribution by extending Guerzoni’s (2003) analysis on German *auch nur*. Guerzoni argues that a presupposition of *auch* contradicts that of *nur*, and that the contradiction can be revolted if *auch* can scope over a DE operator. In Japanese, *-dake* ‘only’ is assumed to introduce a presupposition in (9), which is inconsistent with ScalarP of *-demo* ‘even’ in (1). However, when there is a DE operator that *-demo* can take scope over, the conflict is resolved due to a scale-reversal property of a DE operator (LF: *even* > DE > *only*). The movement of *-demo* is well-motivated in that it is required to resolve a semantic conflict. Without the presence of *-dake*, which causes a semantic conflict, *-demo* cannot undergo any movement, as in (6). The compositional analysis of *-dake-demo* is capable of explaining why *-dake-demo* is unacceptable in positive and negative contexts. In positive contexts, there is no DE operator, hence there is no way to resolve a semantic conflict. In negative contexts, as in (8), *-dake* as well as *-demo* necessarily takes scope over negation, thus it is impossible to obtain LF: *even* > negation > *only*, i.e. the only configuration free of the semantic conflict. The LF we obtain after resolving a semantic conflict yields MostP (*-demo* > DE), predicting that *-dake-demo*, whenever it is licensed, yields MostP only. As shown above, this prediction is borne out.

The proposed analysis further accounts for the distribution of NPIs consisting of the numeral *one* followed by *-mol-demo/-dake-demo*. All three forms are unacceptable in positive contexts, while, as in (10) and (11), the distribution is more complex in DE contexts. Following Lahiri (1998), the alternatives are introduced in terms of cardinality, as in (12). In positive contexts, the semantics of *even* says that John’s solving one question is the least-likely among the alternatives, which is inconsistent with the ordinary meaning of *one* in (13), i.e., *one* is the most-likely cardinality. If *even* can take scope over a DE operator, the inconsistency can be resolved (*even* > DE > *one*) due to the scale-reversal property of DE operator. According to the current analysis, *-mo* never moves, hence *one-mo* is predicted to be bad except for with negation. *One-dake-demo* should be licensed in DE contexts other than negative ones; to resolve a semantic conflict, *-dake* moves above a DE operator, yielding LF: *even* > DE > *only*. Regarding *-demo*, its distribution is the same as that of *-dake-demo*, which suggests that *demo* in *one-demo* comes with a silent *only*. This is not implausible given that ScalarP of *one* in (13) and of *-dake* ‘only’ in (9) are always consistent. Then the distribution of *-demo* is explained exactly in the same way as that of *-dake-demo*.
(1) \[\text{[[even]]}^\text{NPI}(C)(p)\]
\[
\forall q[ q \in C \land q \neq p \rightarrow \text{likelihood}(q) > \text{likelihood}(p) ]
\]

(2) Alan even saw [Bill]F.

(3) I doubt that Alan even saw [Bill]F.

(4) \[\text{[[even]}^\text{NPI}}(C)(p)\]
\[
\forall q[ q \in C \land q \neq p \rightarrow \text{likelihood}(p) > \text{likelihood}(q) ]
\]

(5) Es hat uns überrascht, das {sogar / auch nur} [der Hans]F da war. [German]
it has us surprised that {even / also only} the Hans there was
‘It surprised us that even John was there.’

   John-NOM most difficult question{-even/-even/-only-even} solved-that-ACC doubted
   ‘I doubted that John solved even the most difficult question.’
   \textbf{LeastP}

   John-NOM most easy question{-even/-even/-only-even} solved-that-ACC doubted
   ‘I doubted that John solved even the easiest question.’
   \textbf{MostP}

(7) John-wa [sono mondai]F{-mo/-demo/#-dake-demo} tok-ana-katta.
   John-TOP that question{-even/-even/-only-even} solve-NEG-PAST
   ‘John didn’t even solve that question.’

   John-TOP {all-GEN question / that question-only}- ACC solve-NEG-PAST
   \[\forall/\text{only}\neg, * \rightarrow \forall/\text{only}\]

(9) \[
\forall q[ q \in C \land q \neq p \rightarrow p > \text{likely/insignificant} \ldots q ]
\]

(10) John-wa [iti-mon]F{-mo/-demo/#-dake-demo} tokanakatta.
    John-TOP one-CL{-even/-even/-only-even} didn’t solve
    ‘John didn’t solve any question.’

    John-NOM one-CL{-even/-even/-only-even} solve-PAST-that-ACC doubt-PAST
    ‘I doubted that John solved any question.’

(12) \[
\{ p : \exists n[p=x.w, \exists x[x=n \land \text{solve}(j,x,w)] ] \}
\]
(13) \[
\exists x[ x=n \land \text{solve}(j,x,w) ] \rightarrow \exists x[ x=1 \land \text{solve}(j,x,w) ]
\]

References
Ph.D. dissertation, Massachusetts Institute of Technology.
Kuno, Susumu. 1980. The scope of question and negation in some verb-final languages. \textit{Proceedings of
the Sixteenth Chicago Linguistic Society}, 155-169.