1. Contribution

This study brings Alternative Semantics and the phonology of focus together to propose a parallel semantic-phonological derivation of focus. It is argued that foci can be either [+F, +WH] or [+F, -WH], i.e. wh-focus and common focus. The semantics projects the alternatives from the focused constituent upwards recursively, using a mechanism based on Shimoyama (2006); Beck (2006).

In order to derive phonological prominence locally, a set of direction operators 00, 01, 10, 11 is proposed to assign prominence recursively.

Moreover based upon work by Howell & Rooth (2009), Fery and Ishihara (2010), and Katz and Selkirk (to appear), the phonological constraint is stated on the basis of stress prominence recursively.

2. Scope Isomorphism of focus

Data show that the semantic scope of focus coincides with the scope where prosodic prominence is assigned.

- Two different types of foci are distinguished: common focus, i.e. [+F, -WH] (shown in the English data); wh-focus, i.e. [+F, +WH] as shown in the Japanese data.
- Essentially the interface strategy is the same for the common focus and the wh-focus. We call this the Scope Isomorphism of Focus.

3. A Recursive Semantics of Focus: from Hamblin 1973 to a new semantics based on Beck 2006; Shimoyama 2006

Hamblin’s semantics of questions does not refer to the focus semantic value of WH-phrases.

- Hamblin (1973) Semantics of Questions
- Rooth (1992) Alternative Semantics
- Beck (2006) Semantics of Questions

We propose a set of local operators 10, 01, 11 and 00 and a phonological constraint to assign prosodic prominence at the same time. Thus we propose a set of local operators 10, 01, 11 and 00 and a phonological constraint to assign prosodic prominence at the same time.

Shimoyama (2006) proposes a recursive compositional semantics for WH-questions. Focused elements directly give rise to a set of alternatives that can be expanded by Image Construction.

4. Local Operators: at the semantics-phonology interface

At the interface level, we need a mechanism to track which daughter node projects its alternatives, and a phonological constraint to assign prosodic prominence at the same time. Thus we propose a set of local operators 10, 01, 11 and 00 and a phonological constraint to assign prosodic prominence at the same time.

Four local operators that project alternatives differently.
- 10 project alternatives from left child
- 01 project alternatives from right child
- 11 project alternatives from both
- 00 don’t project alternatives

Semantic Interpretation Rules for the Local Operators

Let h be the ordinary semantic operation, e.g. leftward function application or rightward function application.

\[[\alpha]_{\lambda}\] ~ ![\alpha]_{\lambda} \quad \alpha \in \mathcal{A}\]

Phonology (constraint version)

Given a node \([\alpha, \beta]\), there is a grid column in the phonological interval corresponding to \(\alpha\) that is higher than every grid column in the phonological interval corresponding to \(\beta\).

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5. Stress-based Prominence

Howell & Rooth (2009) use web-derived corpus to study whether phonetic factors are involved in finding the F and SOF. The results show that models without pitch do as well in the accuracy of the testing data, as shown below.

Accuracy of testing data

92.2%: duration of V1
92.3%: duration of V1, distance between F1 and F2 40% into V1, duration of (d) closure.

This finding is consistent with Beaver et al. (2007), which shows that second-occurrence foic (SOF) occurring after a nuclear accent are prosodically marked by longer duration and greater energy.

For further studies:

- Representation for an F that scopes over material that is not given.
- Second-occurrence foci

6. Selected References