

A semantic analysis of Unexpectedness Intonation

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What is this talk about?

Example

- | | | |
|-----|-------------------------|-------------------------|
| (1) | Obama won the election! | DECLARATIVE EXCLAMATIVE |
| (2) | How tall Pau is! | <i>wh</i> -EXCLAMATIVE |

Goals

1. What is the **core semantics** for UI, i.e., the intonation that underlies declarative and *wh*-exclamatives?
2. How can we account for the **contextual impact** of UI?

Previous assumptions

- *Wh*-interrogatives and *wh*-exclamatives have the same core semantics, i.e., a **set of propositions** ($\langle \langle s, t \rangle, t \rangle$) (D'Avis 2002, Zanuttini and Portner 2003, Abels 2005).
- **Lack** of speaker **commitment** (Gunlogson 2003) is not part of the semantics of a *wh*-clause.
- Different **intonation** patterns can take as argument a set of propositions and yield well-formed **matrix** expressions (D'Avis 2002, Castroviejo t.a.).

Claims

- UI is a function that takes as input at-issue content and returns **expressive** meaning.
- UI can take as argument either a **proposition** (p) or a **set** of propositions (Q).
- UI imposes a requirement on its argument: if it is a set of alternatives, these alternatives must satisfy a **structural condition**, namely be ordered according to the inclusion relation.

Overview

1. Properties of declarative and *wh*-exclamatives
2. Previous literature
3. Proposal
4. A few answers and more questions

Wh-exclamatives

No assertions

They do not function as questions, but they do not make assertions, either (Grimshaw 1979, Zanuttini and Portner 2003).

Example

- (3) a. A: How tall is Pau? B1: # How tall he is! B2: Very tall.
b. A: Is Pau tall? B1: # How tall he is! B2: Very tall.

Wh-exclamatives

Wh-words

Only a subset of the set of *wh*-words can introduce *wh*-exclamatives (Elliott 1974, Zanuttini and Portner 2003).

Example

- (4)
- a. How tall Pau is!
 - b. #Who came to the party!
 - c. #What I found in my room!
 - d. #Where you went on vacation!

Wh-exclamatives

High degree

They indicate high (“extreme”) degree (Elliott 1974, Zanuttini and Portner 2003).

Example

- (5) a. #How relatively tall Pau is!
b. How tall Pau is! - # though he’s not extremely tall.
- (6) #How tall Pau is! (If we are surprised at his low degree of tallness.)

Declarative exclamatives

Assertions

They can answer a question (i.e., they can make an assertion).

Example

- (7) a. A: What happened?
b. B: Obama won the election!

Declarative exclamatives

No (apparent) restrictions

Any p can be pronounced with UI.

Example

- (8)
- a. I didn't win the lottery!
 - b. Pau is average tall!
 - c. Bill is 1.30 meters tall!

Background

- Rett (t.a.) claims that declarative and *wh*-exclamatives involve two different **force operators**: they have different domains, but the same value (an expression of surprise).
- D'Avis (2002) proposes that matrix *wie*-exclamatives in German receive their exclamative flavor from **intonation**.
- Castroviejo (t.a.) shows similarities between UI and **evaluative adverbs** such as *surprisingly* when they modify a (gradable) adjective (Katz 2005, Nouwen 2005).

Proposal

Main idea

UI is a force operator that can have different domains, namely p or Q .

- It constitutes a **single force operator**, because it has the same discourse impact irrespectively of whether it takes as input p or Q .
- UI imposes a certain **requirement** on its arguments: it is always fulfilled by p and it is fulfilled by Q only when the propositions in the set involve the inclusion relation.

An expressive function

- UI has the properties that Potts (2007) assigns to expressive items such as *damn* in the *The damn machine doesn't work*, namely: nondisplaceability, **immediacy**, **perspective dependence**, **independence**, descriptive ineffability and repeatability.
- Unlike *damn*, UI takes as input an entire clause.

An expressive function

PERSPECTIVE DEPENDENCE: UI cannot be emdedded, i.e., it is strictly **speaker-oriented**.

- (9) a. John is surprised at [how tall Pau is (#!)].
b. John knows that [Obama won the election (#!)].
- (10) a. How tall Pau is! / Pau is 2 meters tall! # I guess it's unbelievable, but I'm not surprised.
b. John is surprised at how tall Pau is. I guess his tallnes is unbelievable, but I'm not surprised.

An expressive function

IMMEDIACY: UI behaves like a **performative**, i.e. it achieves its intended act simply by being uttered.

- (11)
- a. A1: How tall Pau is!
 - b. A2: Pau is 2 meters tall!
 - c. B1: # That's not true. I don't think this is unexpected at all.
 - d. B2: # You're completely right. This is unexpected.
 - e. B3: No he's not!

An expressive function

INDEPENDENCE: UI can be **removed** and the regular descriptive meaning is still conveyed.

- (12) a. A: What happened?
 b. B: Obama won the election(!)

An expressive function

INDEPENDENCE: UI can be **removed** and the regular descriptive meaning is still conveyed.

- (12) a. A: What happened?
b. B: Obama won the election(!)

(But ...

- (13) How tall Pau is #(!).)

Satisfying unexpectedness

Hypothesis

- When the argument of UI is a **a set of worlds**, UI conveys that these overlapping true situations are unexpected.
- When the argument of UI is a **a set of propositions**, UI needs to make the false propositions in the set unexpected.

Satisfying unexpectedness

Monotonicity

- Upward and downward monotonicity:

(14) Pau is 2 meters tall \Rightarrow Pau is 1.75 meters tall. MON \uparrow

(15) How tall Pau is! (Pau is 1.75 meters tall) \Rightarrow How tall Pau is!
(Pau is 2 meters tall) MON \downarrow

- UI displays **downward monotonicity** when it takes as argument a set of **alternatives** (which includes **false** propositions).
- It conveys that the the **actual** (most informative) proposition p is **unexpected**, and so are any of the propositions in the set that are not entailed by p .

Satisfying unexpectedness

Core semantics for UI

(16) Obama won the election!

The set of worlds w such that **Obama won the election in w** are true and unexpected.

(17) $UI(p) = p(w) \ \& \ \forall w' \in \text{NONEXP}_s(w) \ [p(w')]$

Where $\text{NONEXP}_s(w)$ is the complement set of the set of worlds compatible with the speaker's expectations in w (Sharvit 2002).

Satisfying unexpectedness

Core semantics for UI

(18) How tall Pau is!

There is a weakly exhaustive true proposition (e.g., **that Pau is 1.85 meters tall**) that is unexpected, and so are any false propositions in the set (e.g., **that Pau is 2.10 meters tall**).

(19)
$$\text{UI}(Q) = \exists p \in Q(w)[p(w) \ \& \ \forall w' \in \text{NONEXP}_s(w) [p(w')] \ \& \ \forall q \in Q(w)[w \notin q \Rightarrow q(w')]]$$

Satisfying unexpectedness

How vs. Who

(20) How tall Pau is!

- $U = D_d$
- $\text{Exp}_s(w) \in Q(w) = \{w \mid \text{Pau is 1.85 meters tall in } w\}$.
- $p_w \in Q(w) = \{w \mid \text{Pau is 2.10 meters tall in } w\}$
- $\{q \in Q(w) \mid w \notin q\} = \{\text{P is 2.11 mt, P is 2.12 mt, P is 2.13 mt, ... P is } n \text{ mt}\}$

Satisfying unexpectedness

How vs. Who

(21) #Who came to the party!

- $U = \{a, b, c, d\}$
- $\text{Exp}_s(w) \in Q(w) = \{w \mid a \text{ and } d \text{ came to the party in } w\}$.
- $p_w \in Q(w) = \{w \mid a \text{ and } b \text{ came to the party in } w\}$
- $\{q \in Q(w) \mid w \notin q\} = \{a \text{ ctp}, b \text{ ctp}, c \text{ ctp}, d \text{ ctp}, a \oplus c \text{ ctp}, a \oplus d \text{ ctp}, b \oplus c \text{ ctp}, b \oplus d \text{ ctp}, c \oplus d \text{ ctp}, a \oplus b \oplus c \text{ ctp}, a \oplus b \oplus d \text{ ctp}, a \oplus c \oplus d \text{ ctp}, b \oplus c \oplus d \text{ ctp}, a \oplus b \oplus c \oplus d \text{ ctp}\}$

Satisfying unexpectedness

How vs. Who

How generates sets of propositions that are naturally **ordered**.

$$(22) \quad p, q \in Q \Rightarrow [p \subseteq q \vee q \subseteq p]$$

It follows that in *how*-sets all **expected** propositions q are included in the weakly exhaustive true proposition, so no q is part of the subset of false propositions.

$$(23) \quad \forall q \in Q(w) \ \& \not\subseteq \text{NONEXP}_s(w) \ [\exists p \in Q(w) \subseteq \text{NONEXP}_s(w) \\ [p(w) \ \& \ p \subset q]]$$

Assembling the pieces

UI as a function

- UI is a function of type $\langle \langle st \rangle / \langle st, t \rangle, \epsilon \rangle$
- It is a predicate that imposes **no truth conditions**, but it does impose **structural conditions** on its argument.

Assembling the pieces

Two-dimension semantics

- **CI TIER:** $UI(p) / UI(Q)$
- **ASSERTION TIER:** $p \Rightarrow$ the sentence can be uttered to make an assertion. $Q \Rightarrow$ the speaker doesn't choose which one of the propositions corresponds to his/her beliefs, so Q will always fail to make an assertion.

Assembling the pieces

UI as an expressive

- The speaker using UI does **not intend** to modify the addressee's commitment set by introducing to context his/her feeling of unexpectedness.
- The speaker wants to update the common ground with the information that s/he has performed an **expressive speech act** (Stalnaker 1998).
- Still, after uttering a declarative or *wh*-exclamative, the **worlds** where the speaker does not experience unexpectedness are **erased** from the addressee's commitment set automatically, without the addressee previously judging this content true.

Assembling the pieces

What are exclamatives?

Definition

These exclamatives are sentential expressions that convey unexpectedness by means of UI, an expressive function that takes as argument an entire clause and whose output is a conventional implicature.

Conclusions

A few answers

- UI has a **core semantics**, although it may have different domains. It requires that the true proposition be unexpected, and so the rest of the alternatives, if any.
- *Wh*-exclamatives indicate **high degree** because all the false propositions in Q are entailed to be unexpected.
- Declarative exclamatives (but not *wh*-exclamatives) have the proper semantic type to make assertions; UI only contributes meaning at the CI TIER, so it does not have the properties of **asserted content**.

Conclusions

More questions

- Why does *It's surprising* **embed** any *wh*-word?
- Why do certain languages, like German and Dutch, have **matrix** *wh*-exclamatives introduced by *who*?
- Is there a **unified** way to define all exclamative constructions?

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