1 Preview and Background

- Vocatives
  The centerpiece of this presentation is the semantics and pragmatics of vocatives. Vocatives are relevant to information structure because:

  1. They are indexical, involving reference to the addressee.
  2. Their contribution to the meaning of the sentence does not seem to be truth-conditional in nature.
  3. They are very similar to topics both syntactically and pragmatically.

- Summary of Main Hypotheses

  1. The addressee is represented in its own syntactic projection, as revealed by imperatives and vocatives.
  2. Vocatives are separate performatives, and can be analyzed as expressive meaning (in the sense of Potts 2003a).
  3. Topics – similar as they are to vocatives – should be thought of as separate performatives as well.

  Point 3 is obviously controversial, and may be even more so in that it allows the hypothesis that the cognitively relevant structuring of information should pushed outside the boundaries of linguistic theory.

- Clause Typing

  This work is part of a broader project on clause typing undertaken collaboratively with Raffaella Zanuttini. Our work on clause types begins from the following fundamental points:

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1. Clause types are to be identified by three criteria (Sadock & Zwicky 1985):
   (a) They form a **closed system**.
   (b) They are associated with a particular sentential **force**.
   (c) The major clause types – declaratives, interrogatives, and imperatives – are **universal**.

2. There are significant typological generalizations concerning clause type systems. In addition to the universality of the major types, we have some types that are common but not universal (exclamatives), some that are rare (promissives), and some types that, logically speaking, might have existed but apparently do not (“threatatives”, “warnatives”). These generalizations cannot be explained in functional terms, and instead require a grammatical account.

3. Each major clause type is associated with a component of the discourse context, and these components are sets of semantic values, differentiated by type:
   (a) Declaratives are associated with the **Common Ground**, a set of propositions.
   (b) Interrogatives are associated with a **Question Set**, a set of sets of propositions.
   (c) Imperatives are associated with the addressee’s **To-do List**. A To-do List is a set of properties, and a To-do List function assigns one to each participant in the conversation.


5. The forces associated with major types – **assertion**, **asking**, and **requiring** – are simply the addition of the meaning of a clause to the type-matching component. For example:

   Context + *It is raining* = CG ∪ \{ \[ *It is raining. \] w,c \}

6. Note: We must distinguish **sentential force** (Chierchia & McConnell-Ginet 1990, or **sentence mood**, Reis 1999) from the ultimate illocutionary force.

2 Imperatives

- The Imperative Subject
  In many languages, the subject of an imperative must refer to, overlap with, or quantify over the addressee or the set of addressees (Mauck et al. 2004). (There are exceptions; some languages have true third-person imperatives. See (8) below and Mauck et al. (2004) for details.)

- This restriction does not mean that the subject is simply a null or overt second person pronoun (cf. Potsdam 1996), and is not pragmatic in nature:

  (1)  
  a. Eat!  
  b. Boys go in, girls wait outside!  
  c. Nobody touch your pencils!  
  d. Someone come up to the blackboard and do this problem!

  (2)  
  a. (You) be kissed by Mary!
b. *Mary kiss (you)!

• We propose that the addressee is represented in the syntax of imperatives, but not as the canonical subject (cf. Platzack & Rosengren 1994). Suppose that the addressee is represented as a syntactic head, \( addr \).

\[
addrP \\
 addr \quad IP
\]

More evidence for the idea that the addressee is represented in a syntactic projection of its own will come from vocatives in Section 3.

• The imperative IP denotes a property constructed by abstracting over the subject NP (it’s a variable) or a domain variable of the subject NP. (The syntactic details are not relevant here.)

• The overall meaning of the imperative \( addrP \) is a property, specifically the IP property with its argument restricted to the (possibly singleton) set of addressees (cf. Hausser 1980):

\[
\begin{align*}
(4) \quad & \text{a. } \llbracket \text{Eat!} \rrbracket_{w,c} = \left[ \lambda w \lambda x : x \in addr(c) \cdot x \text{ eats in } w \right] \\
& \text{b. } \llbracket \text{Everyone eat!} \rrbracket_{w,c} = \left[ \lambda w \lambda x : x \in addr(c) \cdot \forall y : y \in x \cdot y \text{ eats in } w \right]
\end{align*}
\]

• Force Assignment in Imperatives

1. The property in (4) is added to the addressee’s To-do list (or addressees’ To-do lists). Because of the restriction to the addressee, it is a property that only the addressee can have, and so it would be infelicitous to add it to any other individual’s To-do list. (The addressee restriction also lets us distinguish imperatives from promissives, a rare but attested clause type, cf. Pak 2004 on Korean.)

2. Distinctions among subtypes of imperatives – orders, requests, permissions, etc. – should not be understood at the level of conversational update. They all add a property to the addressee’s To-do list. Rather, these differences have to do with the pragmatic or sociolinguistic basis for the speaker’s attempt to add a property to the addressee’s To-do list.

   (a) Orders occur when the basis is social authority.

   (b) Requests occur when no social authority is invoked, and the basis is the speaker’s or addressee’s benefit.

   (c) Permissions occur when the property is understood to be one the addressee herself wants on her To-do list.

3. The set of addressees can include groups. In that case, it’s a pragmatic matter how the work of making the imperative property true is distributed among group members. If the property is distributive, the corresponding non-group property will be added to each individual’s To-do list. If it’s not, what happens is not linguistics specifiable.

• Some compositional details:

1. \( \llbracket addr \rrbracket_{w,c} = \left[ \lambda w \lambda x : x \in addr(c) \cdot x = x \right] \)

   This denotes a trivial property restricted to the addressee.

2. We have a new combination rule, Restrict (cf. Chung & Ladusaw 2004):
Restrict(\(P, Q\)) = [\(\lambda w \lambda x : P(w)(x)\) is defined and \(Q(w)(x)\) is defined . \(P(w)(x) = Q(w)(x) = 1\)]

- This conjoins \(P\) and \(Q\), preserving their presuppositions. It is essentially the same as Heim & Kratzer’s Predicate Modification, though I don’t believe PM is explicit about how presuppositions are handled.
- Alternatively, we could handle the compositional semantics by providing \(addr\) with a suitable meaning as a function from pairs of properties to properties. But I find Chung & Ladusaw’s reasons for proposing \textbf{Restrict} (and their version is more general than (5)) compelling, so we might as well use it here.
- When a vocative occurs in a clause type other than imperative, the sister of \(addr\) doesn’t denote a property, so Restrict can’t apply. A couple of options:
  (a) There is another element in the position of \(addr\) with a trivial meaning:
      \[ [\text{\textit{addr\_non-imp}}] w,c = [\lambda p . p]; \] or
  (b) The position is semantically vacuous.

3 Vocatives

3.1 Vocatives and Reference to the Addressee

- The addressee may be overtly represented in the syntax by a vocative phrase:

  (6) a. John, you may be interested in this.
      b. Maria, what’s that on your nose?
      c. Test takers, no one touch your pencils!
      d. Kids, Anna play the piano and Kristin turn pages for her!
      e. Susan, did John finish the illustrations?

The examples in (6) show that vocatives may occur with all clause types, and need not correspond to an argument. In imperatives, of course, they must correspond to the subject, since the vocative refers to the addressee(s) and the subject must refer to, overlap with, or quantify over the set of addressees.

- The question arises of whether the representation of the addressee(s) in imperatives is the same as that in vocatives. We propose that they are (specifically, that vocatives occur in the specifier of \(addrP\), cf. Zanuttini 2004):

\[
\begin{array}{c}
VOC_{2p} \\
\text{\it kids} & \quad \text{\it addr}_{2p} & \quad \text{\it IP}
\end{array}
\]

\(VOC_{2p}\) presupposes that \(VOC\) denotes the set of addressees:

\[ [XP_{2p}]_{w,c} = [\lambda w \lambda x : \{ y : [XP]_{w,c}(w_c)(y) \} = \text{\it addr}(c) \cdot [XP]_{w,c}(w)(x) = 1] \]

- Caveats:
1. As mentioned above, the syntax and semantics of imperatives implies that \textit{addr} will be linked to the subject position via Restrict, while in other clause types, the two positions need not have anything to do with one another.

2. However, in some languages the subject of the imperative may not be the addressee, but rather an individual that the addressee has control over:

   (8) Layke tini baje aaveN. (Bhojpuri)
       children-nom three o’clock come-imp-3p
       ‘Your children come at 3 o’clock!’

   We might suggest an unexpressed shift to a causative meaning in such cases.

3. Some speakers accept similar examples in languages where they are not generally thought to be possible (English, Italian), for example:

   (9) Don’t he move! (R. Kayne, p.c. to Raffaella Zanuttini)

• Pragmatic Contribution

   The pragmatic contribution of vocatives remains to be characterized explicitly in section 3.2, but can be described informally as indicating that the meaning expressed by the clause is of special relevance to the referent of the vocative (the addressee).\textsuperscript{1} Zwicky (1974) distinguishes two types of vocatives: calls and addresses.

   1. “Calls are designed to catch the addressee’s attention.”

   2. Addresses “maintain or emphasize the contact between speaker and addressee.”

   (Zwicky 1974, 787)

Some items can only be used as calls:

   (10) a. Cabby, take me to Carnegie Hall.
      b. *I don’t think, cabby, that the Lincoln Tunnel is the best way to go to Brooklyn.

   (11) a. Hey you, give me that boat hook!
      b. What I think, *you, is that we ought to take the money and run.

   (Zwicky 1974, (32)–(35); see also Schegloff 1978)

• Sociolinguistic Contribution

   Vocatives may express a wide variety of features of the discourse situation: cf. \textit{honey, dumbass, ma’am, your honor, Franz Kafka, Mr. Kafka, waiter, dude, son, comrade} (all of these from Zwicky 1974).

3.2 The Pragmatic Contribution of Vocatives

• Expressive content

   I suggest that the meaning of vocatives be formulated as \textbf{expressive content} in the sense discussed recently by Potts (2003a, 2003b, 2003c, 2004). Potts has applied his theory of

\textsuperscript{1}Lambrecht (1996) describes vocatives, and topics as well, as follows: “a constituent coding a referent which is accessible from the speech setting or from the linguistic context is associated with a sentence via a pragmatic link of \textit{relevance}” (277). The basic idea of relevance is right, but Lambrecht doesn’t explain the nature of the pragmatic link, and in particular doesn’t say how it differs from simply asserting that S is relevant to the referent of the vocative/topic.
expressive content to conventional implicatures, epithets, appositives, and honorifics. All of these present propositional content which is separate from the central at-issue content expressed by a sentence. For example, the appositive in (12) (= Potts 2004, (22)a) adds the non-at-issue content “Lance is a cyclist.” The antihonorific in (13) (= Potts & Kawahara 2004, (11)) adds the non-at-issue content “It sucks that Mary overslept.”

(12) Lance, a cyclist, is from Texas.

John Mary oversleep-antihon-PAST -fact know
‘John knows that Mary overslept.’

- Expressive content and performatives

1. Major points of Potts’ analysis
   (a) Expressive content = Conventional implicature = Non-at-issue content.
   (b) Type theory distinguishes types $\tau^a$ (at-issue) and $\tau^c$ (expressive) with the same domains. We have functional types $<\tau^a, \sigma^a>$ and $<\tau^a, \sigma^c>$, but not $<\tau^c, \sigma^a>$ or $<\tau^c, \sigma^c>$.
   (c) Semantic composition
      i. If $\alpha$ of type $<\tau^a, \sigma^c>$ combines with $\beta$ of type $\tau^a$, the result has at-issue meaning $[[\beta]]_{w,c}$, of type $\tau^a$, and expressive meaning $[[\alpha(\beta)]]_{w,c}$, of type $\sigma^c$.
      ii. Otherwise, semantic composition operates as usual, and any expressive meanings on $\alpha$ or $\beta$ are left hanging.
      iii. The interpretation of a parsetree $T$ with root node $R$ is $<[[R]]_{w,c}, E_1, \ldots, E_n>$, where $E_1, \ldots, E_n$ are all of the expressive meanings of type $\tau^c$ nodes in $T$.

2. Performative version no. 1
   Potts (2003c) and Potts & Kawahara (2004) suggest that non-at-issue content is performative in nature. However, the performative treatment isn’t fully worked out; nor is it made clear why the concept of a performative is invoked for the phenomena under discussion (epithets and honorifics). The basic formal idea is that utterances are made with respect to a pair $(W, C)$, where $W$ is a set of worlds and $C$ is a set of contexts. The performative $ASSERT(p)$ reduce $C$ to one in which the agent has asserted $p$:

\[(W, C) + \left[ ASSERT(p) \right]^{C_A, C_P, C_T} =\]
\[\left\{ \begin{array}{l}
W, \\
c' \in C \quad c'_A \text{ asserts } p \text{ at } c'_P, c'_T, c'_w > \text{ or } \\
c'_A \neq c_A \text{ or } \\
c'_T \neq c_T \text{ or } \\
c'_P \neq c_P
\end{array} \right\}\]

(Potts & Kawahara 2004, (33))

However, $C$ seems not to play an essential role. $W$ is the Context Set, and so should contain all information mutually presupposed by speaker and hearer(s). Since it is obvious that $p$ has been asserted, the information that $p$ has been asserted will need to be incorporated into $W$. Therefore, it seems that $C$ can be dispensed with.
3. Performative version no. 2
I think it’s better to stick with the original multidimensional analysis as a technical device, and distinguish at-issue from non-at-issue content directly.

(a) A sentence-denotation is a pair \(< A, C >\), where \(A\) is the set of at-issue meanings and \(C\) is the set of non-at-issue meanings. (Perhaps \(A\) must be a singleton – Potts assumes this in his terms.)

(b) For all \(m \in C\), the truth of \(m\) is guaranteed by its being understood. We say \(m\) is a **performative**.

Compare:
- An explicit performative, which describes an illocutionary act, is automatically true once understood.

\[(15) \text{a. I hereby assert that it’s raining.}\]
\[(15) \text{b. If (15)a is understood by the addressee, it is automatically true (the assertion has been made).}\]

(cf. Searle 1965, 1969 on the analysis of illocutionary act as Gricean non-natural meaning)
- As discussed by Potts (2003c), expressive content like that introduced by epithets falls under this description as well:

\[(16) \text{a. That bastard Kresge was late for work yesterday. (Potts 2003c, (14))}\]
\[(16) \text{b. If (16)a is understood by the addressee, “I hereby express disapprobation of Kresge” is automatically true (disapprobation has been expressed).}\]

(c) A thought: explicit performatives like (15)a have an empty \(A\), or meet the requirement \(A \subseteq C\).

(d) Interpretation Principles
We have two kinds of meaning. Let’s make this explicit by using separate interpretation functions, \([\ ]_{w,c}\) for regular content and \([\ ]_{w,c}^C\) for expressive content. (The parallels to Rooth’s Alternative Semantics are obvious.)

i. For all nodes \(N\) with daughters \(D_1\) and \(D_2\), (**Ordinary function application**)
   \[
   \text{if } [D_2]_{w,c} \text{ is in the domain of } [D_1]_{w,c}, \text{ then } [N]_{w,c} = [D_1]_{w,c}([D_2]_{w,c}).
   \]

ii. For all nodes \(N\) with daughters \(D_1\) and \(D_2\), (**Expressive function application**)
   \[
   \text{if } [D_2]_{w,c} \text{ is in the domain of } [D_1]_{w,c}^C, \text{ then } [N]_{w,c}^C = [D_1]_{w,c}^C([D_2]_{w,c}).
   \]

iii. For all nodes \(N\) with daughters \(D_1\) and \(D_2\), (**At-issue percolation**)
   \[
   \text{if } [D_1]_{w,c} \text{ is not defined, } [D_1]_{w,c}^C \text{ is defined, and } [D_2]_{w,c} \text{ is defined, then } [N]_{w,c} = [D_2]_{w,c}.
   \]

iv. For all nodes \(N\) with single daughter \(D\), then (**Unary branching**)
   A. \([N]_{w,c} = [D]_{w,c}\), and
   B. \([N]_{w,c}^C = [D_2]_{w,c}^C\), if defined.

v. If \(R\) is a root node, then (**Root node**)
   A. \([R]_{w,c} = A\), and
   B. for all \(N\) dominated by \(R\), if \([N]_{w,c}^C \in D_{<s,t>}\), then \([N]_{w,c}^C \in C\).

4. Performative analysis of vocatives
(a) Calls
The idea of non-at-issue content as a separate performative is natural for calls. The meaning of John as a call in (17)a is something like (17)b:

(17) a. John, your dinner is ready!
    b. “I hereby request John’s attention.”

The meaning in (17)b has the Gricean characteristics of an illocutionary act. (Perhaps (17)b should be formulated as an imperative meaning, i.e. a hearer-directed property.)

(b) Formal meaning for call intonation:

\[
\text{[ CALL } C_{w,c} = \lambda x \lambda w . \text{ speaker}(c) \text{ requests } x \text{’s attention in } w
\]

\[\text{[ CALL } w,c \text{ is not defined, but } [ \text{ CALL } ] C_{w,c} \text{ is. This marks the resulting proposition, which is the meaning of the vocative, for inclusion in } C \text{ rather than } A.\]

(c) Addresses
I suggest that the meaning of John, used as an address, is as in (18).

(18) “I hereby inform you, John, that this sentence’s at-issue meaning is of special relevance to your interests.”

This meaning is actually applicable to calls as well, so I suggest that (18) is the interpretation of vocatives in general, and calls in addition get (17)b.

4 Topics

• Vocatives and Topics
Vocatives are very similar to sentence topics. While this point is clear in English, the relatively impoverished syntax of topics in English means that the similarity has a rather narrow empirical base. The point is more significant in Italian (Zanuttini 2004) and French (Lambrecht 1996). Zanuttini shows that vocatives are extremely similar to a particular syntactically distinct variety of topic in Italian, Hanging Topics. (Ultimately, Zanuttini concludes that vocatives are to be distinguished from Hanging Topics.) Lambrecht considers vocatives to be a subvariety of topic.

• This connection (and possible identity) between vocatives and topics suggests that we should consider an analysis of topics as expressives as well. The idea would be that Maria in (19) introduces a non-at-issue performative meaning:

(19) Maria, I like her very much.

The strategy of modeling the contribution of topics by means of a separate performative leaves open to a significant extent what the content of that contribution is. We can draw ideas about how to formulate this expressive meaning from various intuitive ways of characterizing topics.

• Aboutness
I suggest something like the following, based on the information structure theory of topics (Reinhart 1981, Vallduvi 1992, Lambrecht 1996, Portner & Yabushita 1998):

(20) “I hereby inform you that you will more easily understand this sentence’s at-issue meaning if you activate your mental representation of Maria.”
Or perhaps:

(21) “I hereby request that you activate your mental representation of Maria.”

These interpretations reflect performative implementations of the intuitive notion of **aboutness**. As a matter of fact, the addressee’s mental representation of Maria will be activated just by the fact that he or she understands such performatives, so their intended (perlocutionary) effect is almost guaranteed as well.

- **Formal version:**

  \[ [\text{TOP}]^C_{w,c} = \]
  \[
  \lambda x \lambda p \lambda w . \text{speaker}(c) \text{ informs addressee}(c) \text{ in } w \text{ that speaker}(c)’s illocutionary intent in expressing } p \text{ is more easily understood by addressee}(c) \text{ in worlds in which addressee}(c)’s mental representation of } x \text{ is active than in otherwise similar worlds in which it is not} \]

- **Handling aboutness by means of a separate performative is promising because it may allow an understanding of the similarities between vocatives and topics in terms of the similarities between the pragmatic analyses sketched in (18) and (20).**

- **Is Information Structure part of grammar?**

  Handling aboutness by means of a separate performative may also represent an improvement over existing information structure theories of topics because it does not require adding complexity to the model of grammar (cf. Vallduví 1992) or Common Ground (cf. Reinhart 1981, Portner & Yabushita 1998).

  Rather, because this way of thinking about topics reduces the notion of “information processing instructions” to that of illocutionary act, it allows us to keep the cognitively relevant structuring of information outside of grammar –*where it belongs?*

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