1. Overview

Topics to be covered:

• The nature of assertion as expressing commitments
• Judgements as a separate act from commitments
• Subjective epistemics as expressing strength of judgments
• Evidentials as expressing source of judgements
• Discourse epistemics

2. Assertions as Commitments

2.1 The dynamic view of assertions

(1) Assertions as modifying the common ground, "a body of information that is available, or presumed to be available, as a resource for communication" (Stalnaker 1978)

– Common ground is modeled by a set of propositions (context set),
– Assertion of a proposition restricts the input common ground to an output common ground by intersection. +

Example: $s + \varphi = s \cap \varphi$

(3) Alternative view: Common ground as sets of propositions
– Assertion of a proposition adds the proposition to the common ground
– Context set: the intersection of the propositions of the common ground

Example: $c + \varphi = c \cup \{\varphi\}$

(4) Advantages of this view:
– Meaningful addition of tautologies, e.g. ‘2399 is a prime number’
– possible modeling of contradictory common grounds
  (would lead to empty context set)
– possible enrichment by imposing a saliency ordering of the propositions

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2.2 How do speakers add propositions to the common ground?

(5) \( S_1 \) asserts \( \phi \) at \( c \): \( S_1 \) applies function \( f(\phi) = \lambda c'[c' \cup \{\phi\}] \) to \( c \)

(6) Problems:
   - This assumes that one speaker \( S_1 \) has authority over the common ground
   - Does not appreciate that common ground is negotiated
   - Even if \( \phi \) is accepted to \( c \), it should remain on record that it was \( S \) who introduced \( \phi \)

(7) Concept of table in Farkas & Bruce 2010:
   - Common ground has a negotiating area on which participants place propositions
   - After acceptance by other participants, move proposition to permanent common ground
   - Problem: After acceptance, information who introduced which proposition gets lost

(8) Participants convey information due to the rules of a particular game, the CG game.
But in order that this is not just any arbitrary game, there must be rules attached to it,
what are those rules?

(9) Stenius 1968: “Produce a sentence in the indicative mood only if its sentence-radical is true.”
Could we play this game differently? No.

(10) Lewis 1972: Convention of truthfulness and trust
   Problem: This is not just a convention, like driving on the right side of the road?

(11) Lauer 2013: How to get from utterances to propositional updates of information states,
in the current framework, how do you get from (b) to (c):
   a. \( c + S_1: \text{It is raining.} \)
   b. \( c \cup \{ S_1 \text{ uttered: it is raining} \} \) “cautious update”
   c. \( c \cup \{ S_1 \text{ uttered: it is raining, \ldots, ‘it is raining’} \} \) “credulous update”

2.3 Three approaches to assertion

(12) Bach & Harnish 1979, Lauer 2013 “I believe”
   a. Speaker expresses a belief in the truth of a proposition \( \phi \)
   b. This is reason for Addressee to believe \( \phi \) as well, if they consider Speaker well-informed,
not deceiving, speaking in earnest, etc.
   c. Explains Disbelief Paradox (Moore): # It is raining, but I do not believe that it is raining.
   d. Problem: Difference between It is raining and I believe that it is raining,
if we assume that I believe that I believe that \( \phi \) \( \iff \) I believe that \( \phi \).

(13) Bach & Harnish 1979, Truckenbrodt 2006: “you should believe”
   a. Spreaker expresses (in addition) the intention that the addressee should form a like belief.
   b. Addressee recognizes this intention and believes \( \phi \), if they consider Speaker well-meaning.
   c. Explains Belief Transfer Paradox: # It is raining, but I don’t want you to belief it.
   d. Disbelief paradox: Do not want others to believe what you don’t believe!
   d. Problem: Believe it or not / I don’t care whether you believe it / Just for the record, \( \phi \)

   a. Speaker expresses public responsibility for truth of the proposition,
backed by social sanctions if the proposition is false (and there is no excuse)
   b. The social sanctions act as a guarantee that Speaker does not commit to falsehoods;
this constitutes reason for the Addressee to assume \( \phi \).
   c. Explains Blame Paradox: # It is raining, but I don’t want to be blamed if it is not raining.
   d. Disbelief paradox: When you declare responsibility for \( \phi \) and for disbelief in \( \phi \), you invite
social sanctions, as you make evident that you do lack sufficient reasons to believe \( \phi \)
   e. Belief transfer paradox: The typical reason to risk social sanctions is to communicate,
i.e. to make other people belief in propositions.
In (13), (14), (15), the steps a/b can be seen as a **conversational implicature** by which the speaker communicates the proposition to the addressee.

Nature of lying:
(13) makes lying is, strictly speaking, impossible, as assertions are expressions of a belief; as expressing a false belief is not lying.
(14) makes lying morally bad: Do not want others to believe what you don’t believe.
(15) makes lying risky: Don’t get caught, you might get sanctioned.
– In all three cases, lying runs the risk to lose ability to communicate.

### 2.4 The commitment view, implemented

Implementation of commitment view in Krifka 2015:

– $S_1$: *It is raining.* : $c + S_1 \vdash ‘\text{It is raining}’$,
  where $S_i \vdash \phi$: the proposition $\lambda i[S \text{ is i publicly committed to the truth of } \phi]$
  – The proposition $\phi$ itself is then added as a conversational implicature,
    if no objection, or simple acknowledgement *okay*. $c + S_1 \vdash ‘\text{It is raining}’ + ‘\text{It is raining}’$
  – The source of a proposition, the participant responsible, remains on permanent record
  – As common grounds essentially contain commitments, I call them “commitment states”.

Possible reactions after $c + S_1 \vdash ‘\text{It is raining}’$:
– No. $S_2$ takes up proposition ‘It is raining’ and asserts its negation,
  resulting in $c + S_1 \vdash ‘\text{It is raining}’ + S_2 \vdash ¬‘\text{It is raining}’$,
  preventing the proposition ‘It is raining’ from becoming part of c,
– Yes. $S_2$ takes up proposition ‘It is raining’ and asserts it,
  resulting in $c + S_1 \vdash ‘\text{It is raining}’ + ‘\text{It is raining}’ + S_2 \vdash ‘\text{It is raining}’$,
  making $S_2$ also publicly responsible for the truth of ‘It is raining’

The content of the assertion proper, $S_1 \vdash ‘\text{It is raining}’$, cannot be addressed directly by $S_2$, except by comments like *Don’t say that, Take this back, Don’t make a fool of yourself.*

Syntactic implementation,

possible head movement of finite verb to CommitP or ActP, movement of subject to Specs

$[\text{ActP} \rightarrow [\text{commitP} \vdash [\text{tp it is raining}]]]$

Semantic interpretation:

$[[\text{ActP} \rightarrow [\text{commitP} \vdash [\text{tp it is raining}]]]]^{S_1,S_2}$, where $S_1$: speaker, $S_2$: addressee

$= \lambda c[c + S_1 \vdash [[\text{tp it is raining}]]^{S_1,S_2}]$

$= \lambda c[c + S_1 \vdash \lambda i[\text{it is raining in i}]]$

### 2.5 Questions in the commitment view

Extension from commitment states to “commitment spaces”: commitment state + possible continuations

(Cohen & Krifka 2014, Krifka 2014)

Commitment spaces modeled as sets of commitment states $C$ ordered by set inclusion;
the actual commitments are the smallest commitment state, the root of the commitment space, $\sqrt{C}$

Update with regular speech acts: $C + \phi = \{c \in C \mid \sqrt{C + \phi} \subseteq c\}$

Questions as restrictions of continuations that do not change the root (meta speech acts)

a. monopolar question:
\[ C + ?\pi = \{\sqrt{C}\} \cup \{c \in C \mid \sqrt{C} + \phi \subseteq c\} \]

b. bipolar question by question disjunction:
\[ C + [?\phi \lor ?\neg\phi] = [C + ?\phi] \cup [C + ?\neg\phi] \]

c. wh questions by general disjunction, e.g. who came:
\[ C + \bigvee_{x \in \text{PERSON}} [?x \text{ came}] = \bigcup_{x \in \text{PERSON}} [C + ?x \text{ came}] \]

More specifically: In a monopolar question Is it raining?
speaker S\(_1\) imposes on S\(_2\) to update C with S\(_2\) \vdash "it is raining";
S\(_2\) can a. perform this update,
b. reject it and answer no, S\(_2\) \vdash \neg "it is raining",
c. reject it and answer, e.g. by asserting I don't know, S\(_2\) \vdash \neg K_{S\phi}

Syntactic and semantic implementation of constructing commitment space updates, Assertions and addressee-oriented questions:

a. \[ \llbracket [\text{ActP} [ \text{Actº} [ \text{Commitº} \{ \text{Commitº} \vdash \text{it is raining} \} ] ] ] \rrbracket_s,a \]
\[ = \llbracket [\text{Actº} \vdash \text{it is raining}] \rrbracket_s,a \]
\[ = \lambda C \{\{\sqrt{C}\} \cup \{c \in C \mid \sqrt{C} + s(\text{I}) \subseteq c\}\} (\lambda p (\lambda x [\text{it is raining in i}] p)) \]

b. \[ \llbracket [\text{ActP} [ \text{Actº} [ ? ] [ \text{Commitº} \vdash \text{it is raining} ]] ] ] \rrbracket_s,a \]
\[ = \lambda C \{\{\sqrt{C}\} \cup \{c \in C \mid \sqrt{C} + a(\text{I}) \subseteq c\}\} (\lambda p (\lambda x [\text{it is raining in i}] p)) \]

2.6 Refinements of the commitment view

Subtypes of assertions that relate to degrees of seriousness / social consequences:

– Explicit performatives: I swear / claim / suggest that he did not steal the money.
cf. strength distinctions of speech-act-denoting verbs in Vanderveken 1990
– Speech act adverbials relating to seriousness: I honestly did not steal the window.
– Invocation of authorities: Let God be my witness / Jeez, I did not steal the money.
– Sanction specification: For the life of me, I did not steal the money.
– Oath phrases:

  a. wallaahi / winnabi / wiʔingiil maʔaxatt-iš ḥaaga (Egyptian Arabic)
  
  by good / by the prophet / by the bible I did not steal anything (Mughazi 2003)

  b. ischwör, Alter, war genau so (Kiezdeutsch)
  
  I.swear, guy, it was exactly like that (http://www.kiezdeutsch.de/sprachlicheneuerungen.html)

Invoking another authority that is to blame if proposition is false: slifting, according-to

a. The weather forecast says it will rain.
b. According to the weather forecast, it will rain.
c. It will rain, the weather forecast says.
d. Laut (dem) Wetterbericht wird es regnen.

(cf. Koev 2017)

What about epistemics, evidentials?

a. It probably / certainly is raining.
b. I think / believe it is raining.
c. It must / might be raining.
d. It seems to be raining.

Assertion + epistemic modifier for it likely is raining; P: probability

a. von Fintel 2003: \(\lambda c[c + \text{speaker has put forward } \phi \land P(\text{it is raining}) > 0.5]\)
b. Cohen & Wolf 2011: Assert ("it is raining", P("it is raining") > 0.5); cf. also Piñón 2009.
c. Wolf 2015: Epistemics are expressive, after Potts 2007: \(\langle \text{it is raining}, P(\text{it is raining}) > 0.5\rangle\)
Problems:

a. Why is assertion “weakened” by epistemic?

b. Why ✓ It likely will rain. but # It will rain. It likely will rain.

c. Why no elaboration: It will rain. #It is likely. / I know it from the weather forecast.

d. Why are parentheticals slightly off: # It will – likely – rain.

(33) Wolf 2015: objective / descriptive vs. subjective / expressive epistemics

a. It is probable that it will rain tomorrow. $P_{\text{assert}}(P(\text{rain}) > 0.5) \geq \text{high}$

b. It will probably rain tomorrow. $P_{\text{assert}}(P(\text{rain}) \geq \text{high}) > 0.5$

(34) Problem:
Can commitment strength (backed by social sanctions) really be captured by probability?

3. Epistemics and Judgements

3.1 Peirce and Frege on Judgement and Assertion


[A]n act of **assertion** supposes that, a proposition being formulated, a person performs an act which renders him liable to the penalties of the social law (or, at any rate, those of the moral law) in case it should not be true, unless he has a definite and sufficient excuse;

and an act of **assent** is an act of the mind by which one endeavors to impress the meanings of the proposition upon his disposition, so that it shall govern his conduct, this habit being ready to be broken in case reasons should appear for breaking it. (CP 2.315)

What is the essence of a **Judgment**? A judgment is the mental act by which the judge seeks to impress upon himself the truth of the proposition. It is much the same as an act of asserting the proposition, or going before a notary and assuming formal responsibility for its truth, except that those acts are intended to affect others, while the judgment is only intended to affect oneself. (CP 2.252)

(36) Frege on **Gedanke** (Proposition), **Urteil** (Judgement) and **Behauptung** (Assertion)

In einem Behauptungssatz ist also zweierlei zu unterscheiden: der Inhalt, den er mit der entsprechenden Satzfrage gemein hat und die Behauptung. (…) In einem Behauptungssatze ist **beides** so verbunden, daß man die Zerlegbarkeit leicht übersieht. Wir unterscheiden demnach

1. das Fassen des Gedankens -- das Denken,
2. die Anerkennung der Wahrheit eines Gedankens -- das Urteilen
3. die Kundgebung dieses Urteils -- das Behaupten. (Frege 1918, Der Gedanke).

I propose a correction: All **three** aspects may be combined in an assertion.

3.2 Propositions, Judgements and Assertions

(37) There are **three** distinct semantic operations;

a. Forming a **proposition** / thought $\varphi$ which has truth conditions
b. Forming a **judgement** of $x$ concerning a proposition $\varphi$, a **private** act

c. Forming an **assertion** of $x$ of $\varphi$, a **public** act with social consequences

(38) We can distinguish between:

a. $S$ asserts a **simple proposition** $\varphi$, in order to introduce $\varphi$ to the common ground:

   $S$ asserts $\varphi$, in order to introduce $\varphi$

b. $S$ asserts a **judgement** by $S$ about a proposition $\varphi$, also to introduce $\varphi$ to the common ground:

   $S$ asserts ‘$S$ considers $\varphi$ likely’, **also** to introduce $\varphi$ to the common ground
Reason for asserting judgments:

a. Weakening of commitment by committing to a proposition that refers to a private act and hence is more protected from possible social sanctions.
b. Karttunen 1972, Veltman 1996: *It is the mailman* “stronger” than *It must be the mailman.*
c. Experimental result by Knobe & Yalcin 2014 for extracertexual assessors (Eavesdroppers):
   a. S₁: *John is dead.* E knows that John is not dead, judges what S₁ said as false.
   b. S₁: *John might be dead.* E knows that John is not dead, but judges what S₁ said as true.

Lauer 2013 only has (38)(b), i.e. asserting φ is always committing to a judgement (belief) of φ however, there is a difference between S₁: *It is raining.* and S₁: *I believe that it is raining.*

Two uses of judgement/belief clauses, like *I believe that φ.*

a) With ‘I [prop.attitude] φ’, speaker S₁ wants to add proposition ‘S₁ believes φ’ to common ground
b) With ‘I [pro.attitude] φ’, speaker S₁ wants to add φ itself to common ground, especially if φ is a QUD (Question under Discussion).

Two claims for case (b):

(i) there are special grammatical forms for (b): epistemic adverbials, embedded root clauses
(ii) [prop.attitude] must assign high or at least exclude low subjective probability to φ

No negated epistemic adverbials (Bellert 1977, Ernst 2009):
*It will likely / *unlikely rain.* vs. *It is likely / unlikely that it will rain.* (objective epistemics)

No embedded root phenomena in negative contexts:
Ich glaube, es wird regnen. vs. *Ich glaube nicht, es wird regnen.*
vs. Ich glaube (nicht), dass es regnen wird.

### 3.3 Judgements in syntax and semantics

Subjective modals to express confidence of speaker, addressee, attitude holder:

a. Peter: *It will likely rain.* assertion – speaker
b. Mary, to Peter: *Will it likely rain?* question – addressee
c. Peter thinks that it will likely rain propositional attitude – attitude holder: Peter

Assume a judgement phrase for expressing the confidence of a judger in a proposition φ; when asserted, the speaker S commits to the proposition that S has the specified confidence in φ, in a propositional attitude context, it is expressed that the subject has the specified confidence in φ; cf. Tenny & Speas 2003, Speas 2004, Evaluative Phrase; Zu 2015, Sentience Layer

The judger aligns with the judge parameter of personal taste / perspective predicates by default:

a. *The pizza is tasty.* default judge: speaker
b. *Is the pizza tasty?* default judge: addressee
c. Peter thinks that the pizza is tasty. default judge: subject, here: Peter

Tense Phrases (TPs) and Judgement Phrases (JPs)

a. TPs are interpreted as propositions with a judge parameter that figures in the interpretation of perspective predicates, personal taste predicates, logophoric pronouns in addition to a parameters for speaker, addressee etc.

b. JP that makes the judge parameter accessible for semantic operators:

   %% 

   b. λj[[TP the pizza is tasty]] = j[the pizza is tasty for j]

   c. Possible interpretation by centered worlds, Lewis 1979;
   cf. Lasersohn 2005, Coppock & Wechsler 2017: j{i}[[the pizza is tasty for j in i]]
(49) JP can be modulated by subjective epistemic operators:
- epistemic particles (German wohl, Zimmermann 2004; English perhaps),
- epistemic adverbials (certainly, likely, possibly)
- epistemic modals in subjective reading (may)

3.4 Subjective vs. objective epistemic operators and judgements

(50) Lyons 1977:
Subjective: Poss + it-is-so + Alfred is unmarried. 
Alfred may be unmarried.
Objective: I-say-so + Poss + Alfred is unmarried.

(51) Papafragou 2006: \[\text{might} \phi \] \[\text{con,i} = \forall x \in G_{\text{con}} \exists i' f(x(i) [\phi]^{\text{con,i'}}
G_{\text{con}}: \text{group of knowers whose knowledge is relevant}; subjectivite: \ G_{\text{con}} = \{\text{speaker(\text{con})}\}, \ G_{\text{con}} \text{ might be specified, e.g. as reported by the weather forecast
\text{cf. also Kratzer 1981, Tancredi 2007, Portner 2009}

(52) Wolf 2012, 2015: \textbf{expressive} (better: \textbf{judgmental}) vs. \textbf{descriptive} epistemic modality

3.5 Implementation of subjective / objective epistemics

(57) Assume for concreteness a probability-theoretic approach to epistemics:
P(x, i, \phi): \text{the probability that x assigns at index i that \phi is true at i}

(58) Objective epistemics are proposition-internal, relating to the TP:
a. \[\text{it is likely that it will rain}\] = \lambda_i P(x, i, \lambda_i'[\text{it will rain in } i']) > 0.5
x: a contextually salient authority, as unspecified: one with which the speaker aligns
b. \text{as reported by the weather forecast, it is likely that it will rain.} 
\lambda_i P(\text{report of the w.f. in } i, i, \lambda_i'[\text{it will rain in } i']) > 0.5
\text{speaker considers w.f. relevant, otherwise there is no add this to the common ground}

(59) Subjective epistemics are proposition-external, relate to a judgement phrase, JP:
a. \[\text{it will rain}\] = \lambda_j P(j, i, \lambda_j'[\text{it rains in } i']) = 1
b. \[\text{this is likely that it will rain}\] = \lambda_j P(j, i, \lambda_j'[\text{it will rain in } i']) > 0.5
epistemic adverbial
b. \[\text{perhaps it will rain}\] = \lambda_j P(j, i, \lambda_j'[\text{it will rain in } i']) \neq 0
epistemic particle
d. \[\text{must it rain}\] = \lambda_j P(j, i, \lambda_j'[\text{it rains in } i']) = 1
epistemic verb
(60) Anaphoric uptake:
  a. $S_1$: (59)($a,b,c,d$), $S_2$: *I (don’t) believe it*. – $S_2$ does (not) believe that it rains (TP)
  b. $S_1$: (59)($a,b,c,d$), $S_2$: *I believe so, too.* – $S_2$ can align with $S_1$’s JP
a. JP’s are not propositions, type st, but functions from judges to propositions, type est, no anaphoric uptake for such functions by it, that, but possibly by so – (requires testing!)

(61) Some general considerations:
  a. In $\langle$ActP $\ldots$ CommittP $\ldots$ [JP $\ldots$ [TP $\ldots$ ]]$, only TP can relate to factual common ground
b. Operators in ActP, CommitP, JP are just tools to change the factual common grounds; this explains why JP epistemic operators express a high subjective probability.
c. We can express what these operators do by propositions, e.g. ‘$S_1$ is publicly committed to the truth of the proposition that $S_1$ considers $\varphi$ likely’, but these propositions are not true independently, they come about by speech acts.
d. They should not be relegated to an “expressive dimension” in addition to factual information.

(62) But there are ways of dealing with ActP, CommitP, JP in discourse:
  a. Can be talked about: $S_1$ claimed that she considered it likely that ...
  b. Anaphoric means to relate to judgements, acts: That’s right, I agree,
  c. Other comments on discourse moves Well said!, Good question!
  d. Preparations of discourse moves: Now I have to ask you a difficult question.

(63) JP is not accessible to negation: *It not likely will rain, *It not perhaps will rain
a. JP’s cannot be negated, as they are not propositions, type st, but of type est.
b. Why: *It unlikely will rain – Speaker wants to propose TP, P(s, i, [TP]) must exclude 0, if subjective probability is small or includes 0, would not work to convince addressee of $\varphi$!
c. Lowest commitments: *It will perhaps rain, It possibly will rain, answer yes can agree with JP or assert TP.

3.6 Judgement phrases in assertions and questions

(64) Alignment of Committer of CommitP and Judge of JP:
$S_1$: *It will likely rain*. – $S_1$ claims responsibility for truth of: $S_2$ thinks it is likely that it will rain.

(65) Committing to a judgement phrase without epistemic modifier:
$\langle$ CommittP $\langle$ Commit $\langle$ it $\langle$ JP [r J [TP _ _ rain]] ]] [[ ]] ] $\rangle$

(66) Committing to a judgement phrase with subjective epistemic modifier:
$\langle$ CommittP $\langle$ Commit $\langle$ it $\langle$ JP [r J [TP _ _ rain]] ]] [[ ]] ] $\rangle$

(67) Assertion of commitment phrase with a judgement phrase with epistemic modifier:
$\langle$ CommittP $\langle$ Commit $\langle$ it $\langle$ JP [r J [TP _ _ rain]] ]] [[ ]] ] $\rangle$

(68) Additional specification of a commitment phrase operator (just for illustration)
$\langle$ CommittP $\langle$ Commit $\langle$ it $\langle$ JP [r J [TP _ _ rain]] ]] [[ ]] ] $\rangle$

(69) Questioning a commitment phrase, shift of judge to addressee (interrogativity flip, Faller 2002)
$\langle$ CommittP $\langle$ Commit $\langle$ it $\langle$ JP [r J [TP _ _ rain]] ]] [[ ]] ] $\rangle$
(70) Subjective + objective epistemic operator o.k., not subjective + subjective

It is perhaps likely that it will rain, but * It will perhaps likely rain

\[
[[\text{ActP it } \vdash \text{[CommitP } \vdash \text{[J [TP likely that it will rain]}]]]]^a
\]

\[= \lambda C \{c \in C | \neg C + s \vdash \lambda i[P(s, i, \lambda i[\text{will rain in } i] > 0.5]) \neq 0 \} \subseteq c\]

3.7 Judgement phrases in propositional attitudes

(71) a. John thinks that it likely will rain.
   b. John came to think that it will likely rain.

(72) Not easy to reconcile with the assertion modifier approach.

(73) Embedded judgement phrase:

\[
[[\text{JP it } \vdash \text{[J will [TP likely that it will rain]}]]]^a
\]

\[= \lambda j \lambda i[P(j, i, \lambda i[\text{will rain in } i] > 0.5)]\]

(74) Filling argument slot of propositional attitude predicate

\[
[[\text{TP John thinks } \vdash \text{[J that [TP likely that it will rain]}]]]^a,i
\]

\[= \lambda j[\text{think}(j)(\lambda i[P(j, i, \lambda i[\text{will rain in } i] > 0.5)]]
\]

John has a thought that can be characterized as: he considers it > 0.5 likely that it will rain.

(75) a. John thinks that perhaps it will rain. subjective epistemic
   b. # John doubts that perhaps it will rain. subjective epistemic
   c. John doubts that it is likely to rain. objective epistemic

(76) * John doubts that perhaps it will rain.

\[
[[\text{doubt that } \varphi ]] = \text{think}(\neg \varphi),
\]

negation does not have scope over a JP, as negation is a propositional operator

(77) High negation in questions is possible:

Isn’t this perhaps too simple?

Cf. Krifka 2015 for high negation in questions as applying to CommitP;

speaker tests whether addressee would refrain from committing to the unnegated proposition

\[= \lambda C \{\neg C \cup \{c \in C | \neg C + \neg[S_2 \vdash \lambda i[\text{this is too simple in } i]] \subseteq c\}\}
\]

3.8 Non-at-issuessss

(78) Assumption here:

a. Regular semantic representation: [[ActP [CommitP [JP [TP ]]]]]

b. Material in JP, CommitP are tools to make TP-material become part of the common ground

c. Only TP material can address factual points, question under discussion.

(79) Differs from approaches that have the effect of JP / CommitP on a separate, “expressive” layer, e.g. Wolf 2014;

explains why # It is raining (I think it is likely.) is odd, as it involves a full commitment to ‘It is raining’

(80) Example with speaker attitude in JP vs. TP:

a. S_1: It will likely rain.

\[
[[\text{ActP it } \vdash \text{will [CommitP [\vdash [J [TP likely that it will rain]}]]]]^a
\]

\[= \lambda C[C + S_1 \vdash \lambda i[P(S_1, i, \lambda i[\text{will rain}] > 0.5)]
\]

S_2: I don’t believe it. (= that it will rain.)
b. $S_1$: I think it is likely that it will rain.
\[
[[I \text{ think } [\text{[comm} \leftarrow [\text{TP _ it is likely that it will rain}\text{]]\text{]}}]]]^{\text{a}}$
= \lambda C[C + S_1\rightarrow \lambda i[\text{P}(S_1, i, \lambda i[\text{it will rain}]])]

$S_2$: I don’t believe it. (i) that you think it is likely (ii) that it will rain.

3.9 Evaluation dimensions beyond Truth

(81) Dimensions: the True, the Good, the Beautiful; here we have a closer look at the Good.

(82) a. *Es regnet leider / gottseidank / (un)glücklicherweise.* subjective, not-at-issue
   ‘Unfortunately / fortunately, it is raining.’
   b. *Es ist schade / gut, dass es regnet.* objective, at-issue
   ‘It is (un)fortunate that it is raining’

(83) Flip / shift with subjective goodness evaluations?
   a. *Regnet es leider?* ‘It is unfortunately raining?’
   *Ist es schade, dass es regnet?* ‘Is it unfortunate that it is raining?’
   b. *Peter glaubt, dass es leider regnet, aber ich finde es gut.*
   ‘Peter thinks that it is unfortunately raining, but I like it.’
   *Peter glaubt, dass es schade ist, dass es regnet, aber ich finde es gut.*
   ‘Peter thinks that it is unfortunate that it is raining, but I like it.’
   c. *Peter findet, dass es leider regnet.*
   *Peter findet es schade, dass es regnet, aber ich finde es gut.*
   ‘Peter finds it unfortunate that it is raining, but I like it.’

(84) Subjective goodness always related to the speaker, modeled as expressive meaning:
   a. $[[\text{TP leider } [\text{TP es regnet}]]]^{\text{a}}$
   = $\lambda i[\text{it is raining in } i], \text{expressive: } \lambda i'[\text{s considers } \lambda i[\text{it is raining in } i ] \text{ unfortunate in } i']$
   b. $[[\text{TP es ist schade, dass es regnet}]]$
   = $\lambda i'[\text{x considers } \lambda i[\text{it is raining in } i ] \text{ unfortunate in } i'], \text{expressive: } –$
   c. $[[\text{TP ich finde es schade, dass es regnet}]]^{\text{a}}$
   = $\lambda i'[\text{s considers } \lambda i[\text{it is raining in } i ] \text{ unfortunate in } i'], \text{expressive: } –$

(85) Interactions of the True with the Good:
   a. *Es wird wahrscheinlich leider regnen.* ‘It will probably rain;’
   b. *Es wird leider wahrscheinlich leider.* the proposition ‘it will rain’ is dispreferred

4. Evidentials and judgements

(86) Evidentials often difficult to tease apart from epistemics,
   do not express the confidence of a judge that a proposition is true,
   but rather the source of the judgement (de Haan 2000, Hacquard 2011),
   e.g. a person, a rumor, a sensory channel

(87) Here I propose no separate projection for evidentials,
   but that they specify the judge parameter of a judge phrase;
   consequence: evidentials are always not-at-issue, as judge phrases are not-at-issue

4.1 Non-reportative Evidentials: Sensory, Inferential

(88) Non-reportative evidentials specify the nature of the judge relation,
   e.g. sensory channel: hearing, source of knowledge: inferential

(89) Example: auditory evidentials, fápli-yá:li-hawa-t
   e.g. Koasati (Kimball 1991) be.windy-ABILITY-AUDIT-PAST
   ‘one could hear the wind occasionally’
Example: inferential evidentials  
\text{es regnet wohl}  
e.g. German \text{wohl}  
‘presumably it is raining’

Doherty 1979: presenting a hypothesis,  
Zimmermann 2004: expressing a conjecture (‘Vermutung’) by speaker or addressee,

Assertion of non-reportative evidentials serve to reduce the blame if proposition is false,  
as sensory evidence / inferential evidence is not always to be trusted.

Meaning contribution of \text{wohl} is not-at-issue (Zimmermann 2004):  
\text{S}_1: \text{Es regnet wohl}.  
\text{S}_2: \text{Das glaube ich nicht}.  
‘I don’t believe it’, i.e. \text{S}_1 strictly believes that it is not raining.

Interrogative flip, as \text{j} is specified as addressee in questions:  
\text{Regnet es wohl?}

4.2 Reportative Evidentials

Reportative evidentials shift the evidence holder

Example hearsay evidential; cf. Schenner 2008.  
\text{Es soll regnen}.  
‘Reportedly, it will rain’

Not-at-issue  
\text{\neg S}_2: \text{Das glaube ich nicht}.  
‘I do not believe that’, i.e. that it will rain.  
meaning contribution:  
\text{\neg \( \text{Wenn es regnen soll, dann müssen wir einen Schirm mitnehmen.} \)}

\text{S}_2: \text{Das glaube ich nicht}.  
‘I do not believe that it will rain’ (preferred)  
ii) ‘I do not believe that the weather forecast predicted so’

\text{Wenn es laut Wetterbericht regnet, müssen wir einen Schirm mitnehmen.}  
\text{Laut Wetterbericht regnet es nicht.}  
i) According to the w.r., it will not rain.  
ii) ‘It is not the case that according to the w.r. it will rain’

\text{Laut Wetterbericht sagt (*nicht), es wird regnen}. (Simons 2007; Krifka 2014 for proxy speech acts)
5. Excursions: Egophoricity and Allocutive Agreement

5.1 Egophoricity as referring to judge

Alignment of committer with subject.

a. jĩː aːpwa twan-ā
   1.ERG much drink-PST.EGO
   ‘I drank a lot.’
   b. chã aːpwa twan-ā
   2.ERG much drink-PST
   ‘you drank a lot’

c. jĩː aːpwa twan-ā lā?
   1.ERG much drink-PST Q
   ‘Did I drink a lot?’
   d. chã aːpwa twan-ā lā?
   2.ERG much drink-PST.EGO Q
   ‘Did you drink a lot?’

d. wãː aːpwa twan-ā
   3.ERG much drink-PST.DJ
   ‘S/he drank a lot.’
e. wãː aːpwa twan-ā lā?
   3.ERG much drink-PST.DJ Q
   ‘Did s/he drink a lot?’

(106) In reportative evidentials, reported claims:

a. Syām-ā aːpwa twan-ā hã.
   Syam-ERG much drink-PST.CJ EVID
   ‘According to Sam, he drank a lot.’
   b. Syam-ã wãː aːpwa twan-ā dhakā dhāl-ā
   Syam-ERG 3.ERG much drink-PST / drink-PST-EGO COMP say-PERF
   ‘Sam said that he / he drank a lot.’

(107) Modeling in terms of judgement phrase:

a. Ego marking: Judge = Subject (restricted to subjects with intentional θ role in Newari)
   b. In embedded clauses, reportative evidentials: Judger = reportative source
   c. In assertions / questions: mediated by commitment phrase, judger = speaker / addressee

(108) Suggested implementation:

a. Recall that up to the TP level there is an index for the judge, j: [[ TP … ]]^{[a,j]}
   b. Subject of (intentional) verbs combines with VP + Tensee: [TP [DP a], [T [VP … ] [T’ … ]]]
   c. EGO marking expresses j = subject: [TP [DP a] [ [T [VP … ] [T’ … ]]] EGO ],
      with [[ [T … ] EGO ]^{[a,j]} = [EGO]^{[a,j]}(x), where x: subject
   d. In assertions, j is set to speakers; in questions, j is set to addressee
   f. No syntactic binding between speaker / addressee and subject required,
      no syntactic representation of speaker and addressee as in neo-performative analyses

(109) Hale 1980, Coppock & Wechsler 2017: Rhetorical questions are different:

a. Ji ana wan-ā lā?
   1.ABS there go-PST.EGO Q
   ‘Did I go there? (most certainly not!)’
   b. Cha wal-a lā?
   2.ABS come-PST Q
   ‘Did you come? (most certainly not!)’

c. Interpretation of this type of rhetorical question:
   a. Speaker puts own judgement as the only legal continuation.
   b. [[xɛt? !]^{[a]} = λx C [{\sqrt{C}} \cup \{c \in C | \sqrt{C} + r(s) \subseteq c\}] (not a, as in regular questions)
   c. If no reaction by addressee, affirming reaction: regular continuation
   d. Negative reaction rejects commitment by the initial speaker – offensive move.
5.2 Politeness, allocutive agreement: referring to speaker, addressee

(110) Hallmark: no flip with questions, no shift with propositional attitudes; interpreted with respect to s / a parameter in TP

(111) Politeness distinctions in German

a. Referring to addressee
   a. ⟦du⟧s,a,j = a, if socially close to s
   b. ⟦Sie⟧s,a,j = a, if socially distant to s

b. Politeness distinctions in referring to third person referents in German:
   a. ⟦Herr Klein⟧s,a,j = Thomas Klein, if s or a socially distant to Thomas Klein
   b. ⟦Thomas⟧s,a,j, ⟦T⟧s,a,j = Thomas Klein, if s and a socially close to Thomas Klein

(112) Allocutive agreement in Basque; Oyharçabal 1993, Zu 2015

i. ⟦[[T′[VP …] [Tº …]] -k⟧⟧s,a,j = λx: male(a), familiar(s,a), x≠a ⟦ [[T′[VP …] [Tº …]]⟧s,a,j(x)

ii. ⟦[[T′[VP …] [Tº …]] -k⟧⟧s,a,j = λx: female(a), familiar(s,a), x≠a ⟦ [[T′[VP …] [Tº …]]⟧s,a,j(x)

(113) Plural speaker agreement in Jingpo (Tibeto-Burman) expressing bonding, Zu 2013

⟦[[T′[VP …] [Tº …]] -käʔ⟧⟧s,a,j = λx: bonding(s,a) ⟦ [[T′[VP …] [Tº …]]⟧s,a,x, (x),

cf. How are we doing today in nurse speak, ⟦we⟧s,a,j = a iff bonding(s,a)

5.3 Addressee reference on the ActP level

(114) Addressee agreement in Jingpo questions (Tibeto-Burman), Zu 2013, 2015

i. ⟦[Actº?]⟧s,a,j = λrλC {√C} ⋃ {c ∈ C | √C + [r(a)] ⊆ c} – committer unspecified

ii. ⟦[Actº? -n]⟧s,a = λrλC: sg(a) {√C} ⋃ {c ∈ C|√C + [r(a)] ⊆ c} – single addressee

iii. ⟦[Actº? -mə]⟧s,a = λrλC ⋃ x ∈ a [{√C} ⋃ {c ∈ C|√C + [r(x)] ⊆ c}] – to every addressee

6. Discourse epistemes

6.1 German mögen / mag

(115) literal meaning: ‘to want, to like’, cognate with may, historically ‘be able to’, cf. vermögen

(116) Das mag in der Theorie stimmen, taugt aber nicht für die Praxis.

‘(granted that) this may hold in theory, but is not useful for practical purposes’

(117) Objective epistemic modal? Probably not.

a. S₁: Das mag in der Theorie stimmen.
   S₂: I don’t believe it.
   ‘I do not believe that it holds in theory’, rather than ‘I do not believe that it can hold in theory’

b. *Wenn das in der Theorie stimmen mag, dann muss die Theorie schlecht sein.
   ‘If this may hold in theory, the theory must be bad.’

(118) Subjective epistemic modal?

a. Not really, as it cannot serve to introduce a proposition into discourse.

S₁: Wir mögen die Atmosphäre durch SO₂-Injektionen abkühlen können, aber...
   ‘We may be able to cool down the atmosphere with SO₂ injections, but...’

S₂: #Du behauptest ernsthaft, dass wir mit SO₂-Injektionen die Erde abkühlen können?
   ‘You seriously claim that we can cool down the atmosphere with SO₂ injections?
   o.k. after Wir können möglicherweise die Atmosphäre durch SO₂-Injektionen abkühlen...
b. Does not occur in propositional attitudes, different from other subjective epistemics:

(119) Difficult to be used as polarity question, o.k. with constituent question
   a. ?? Mag das in der Theorie stimmen?
   b. Wer mag da an die Tür geklopft haben?

(120) What is rather going on:
Speaker grants a proposition to the addressee without claiming it,

(121) Explains:
– mag clauses do not express a claim, not even a weak one
– mag clauses are not used as an addressee-oriented question

6.2 Implementation of discourse epistemics

(122) Idea: mag φ guarantees that φ in at least one continuation of input commitment space C,
cf. interpretation of modals in dynamic semantics as checks of input states, Veltman 1996.

(123) C + [mag φ] = {c ∈ C | ∃c′ ∈ C [φ ∈ c′]};
if φ is not part of any continuation: results in the empty set, which is to be avoided;
hence effectively it is presupposed that ∃c′ ∈ C[φ ∈ c′]

(124) C might be accommodated accordingly to satisfy the requirement of this update;
if C + [mag φ] undefined, change C conservatively to C′, update C′ + [mag φ]

(125) Syntactic implementation: mag as head of ActP

(126) Odd in polarity questions, cf. (119)(a),
if we assume that mag sets s variable to speaker, different from standard questions,
this would result in the same meaning:

(127) Occurrence in constituent questions, cf. (119)(b):

restricts C to immediate moves where a asserts ‘x arrived’, where x varies over persons
b. Constituent question with mag phrase, where mag sets judger to s.

\[
\begin{align*}
&[[\textup{ActP} \ \textup{wer} ? \ \textup{mag} \ {\textup{Commip}} \leftarrow \ [\textup{IP} \ \textup{TP} \ _\text{gekommen sein}]()]])^x.a \\
= & \ \textup{V}_{x \epsilon \textup{PERSON}} \lambda C \{ \forall C \cup \{c \in C | \exists c' \in C[si-‘x \ arrived’]\}\} \\
= & \lambda C \{ \bigcup_{x \epsilon \textup{PERSON}} \{\forall C \cup \{c \in C | \forall C + s\rightarrow ‘x \ arrived’\}\}\}
\end{align*}
\]

requires that C is such that speaker is open to assume for any x that x arrived; does not require addressee to answer that question, but addressee can pick up TP meaning and provide the indicated information.

(128) Other discourse epistemics? Future tense:

\textit{Dieses Tier dort – das wird ein Esel sein.}
‘that animal over there – this will (turn out to) be a donkey’
in all inertia developments of the common ground, \(\varphi\) will turn up in a commitment state \(c\), application of regular future meaning to the future development of the common ground.

(129) Combination with other modal operators:

a. Epistemic modal (objective, subjective?)

\textit{Es mag regnen können, aber wir machen auf jeden Fall einen Spaziergang.}
‘Granted that it might rain, but in any case, we go on a walk.’

b. Evidential, possibly with shift to addressee?

\textit{Es mag wohl regnen, aber wir machen auf jeden Fall einen Spaziergang.}
‘Granted that you have evidence that it is raining, but...’

(130) \textit{Es mag vielleicht möglich sein, dass dein Vorschlag semantisch plausibel ist,}

\textit{er hat aber leider viele syntaktische Fragen unbeantwortet gelassen.}

‘Granted that it is perhaps possible that your proposal is semantically plausible, but it unfortunately left many syntactic issues unanswered.’

7. References


Davis, Christopher, Christopher Potts & Margaret Speas. 2007. The pragmatic values of evidential sentences. SALT 17, 71-88


