Back to the Theory of Implicatures

1. The Significance of our arguments for the UDM (for the theory of implicatures)

(1) a. John has 3 children.
Implicature: John doesn't 4 children.
b. John has more than 3 children.
*Implicature: John doesn't have more than 4 children.
c. *John only has more than 3_F children.

Our account of these facts was based on the observation that if degrees are always dense *λd. John has more than d children* is an N-open property and Max_{inf} is never defined.

Consequently, since *only* and *Exh* make use of Max_{inf}, they cannot be appended to this property.

Could this account be stated within the Gricean framework?

1.1. Intuitively dense Domains

(2) a. John weighs 120 pounds.
b. John weighs more than 120 pounds.
*Implicature: John doesn't weigh more than any degree of pounds greater than 120.
b. *John only weighs more than 120_F pounds.

(2a) John weighs 120 pounds.

Assume that (2a) is uttered by Mary in a conversation with Fred.

Fred's reasoning (according to the neo Griceans):

1. Mary believes that (2a) is true.
2. There is no sentence S, s.t. Mary believes that S is better to utter than (2a).

A sentence, S, is better to utter than (2a) if:
a. $S \in Alt(2a)$
b. S is more informative (given the context) than (2a).
c. S is relevant for the conversation.
d. S is true.

Alt(2a) = {John weighs d pounds: d a degree}

The set of sentences that are More Informative Alternatives to (2a) is the following:

MIA(2a) = {John weighs d pounds: d > 120}

The set of sentences that are more informative are contextually more informative as well.

CMIA(2a) = MIA(2a) = {John weighs d pounds: d > 120}

All of these sentences are, by assumption, believed by Mary to be relevant:

RCMIA(2a) = CMIA(2a) = MIA(2a) = {John weighs d pounds: d > 120}

Hence Fred concludes that for every member of the set, S, it's not the case that Mary believes that S is true. (**Primary Implicature**)

Extra Assumption:

As a default, Fred assumes that Mary is an opinionated speaker:

Hence, Fred concludes that Mary believes that John weighs exactly 120 pounds. (**Secondary Implicature**)

(2b) John weighs more than 120 pounds.

Fred's reasoning (according to the neo Griceans):

1. Mary believes that (2b) is true.
2. There is no sentence S, s.t. Mary believes that S is better to utter than (2b).

A sentence, S, is better to utter than (2b) if:
a. $S \in RCMIA(2b)$
b. S is true.

MIA(2b) = {John weighs more than d pounds: d > 120}

The set of sentences that are More Informative Alternatives to (2b) is the same, and again all of the alternatives can be assumed to be relevant:

RCMIA(2b) = CMIA(2b) = MIA(2b) = {John weighs more than d pounds: d > 120}

Fred can therefore conclude that for every d>120, it's not the case that Mary believes that John weighs more than d. (Primary Implicature)

Extra Assumption:

As a default, Fred assumes that Mary is an opinionated speaker:

Hence, Fred ought to conclude that Mary believes that 120 pounds is the maximum degree d s.t. Mary weighs more than d pounds.

But this is an incoherent belief. Hence, in this case, Fred doesn't move from the Primary to the Secondary Implicature. Fred does not assume that Mary is an opinionated speaker, and only derives the weak (primary) implicature.

Note that the assumption of an opinionated speaker is made in a uniform fahion: either we assume that the speaker is opinionated about *every* member of the set of alternatives or we make no such assumptions. We don't go through the alternatives "one by one" and decide and decide whether to make A SO assumption.

This appears to conflict with Sauerland's assumptions.

Homework: Think of a way to resolve this conflict.

1.2. Intuitively Discrete Domains

(1a) John has 3 children.

Fred's reasoning (according to the neo Griceans):

1. Mary believes that (1a) is true.
2. There is no sentence S, s.t. Mary believes that S is better to utter than (1a).

A sentence, S, is better to utter than (1a) if:
a. S$\in$RCMIA(1a)
b. S is true.

MIA(1a) = {John has d children: d > 3}

The set of sentences that are more informative than (1a) *given the context* is the following:

CMIA(1a) = {John has d children: 4 ≤ d}

We might think that RCMIA is even smaller, but it's not going to affect our calculations since the set has a least informative member. So let's just assume that.

RCMIA(1a) = CMIA(1a) ={John has d children: 4 ≤ d}

Fred concludes that for every member of this set, it's not the case that Mary believe that S is true.

It's enough to focus on the least informative member of the set: *John has 4 children.*

Fred will conclude that it's not the case that Mary believes that this sentence is true.

Extra Assumption:

As a default Fred assumes that Mary is an opinionated speaker:

Hence, Fred concludes that Mary believes that John doesn't have 4 children. (**Secondary Implicature**)

(1b) John has more than 3 children.

Fred's reasoning (according to the neo Griceans):

1. Mary believes that (1b) is true.
2. There is no sentence S, s.t. Mary believes that S is better to utter than (1b).

A sentence, S, is better to utter than (1b) if:
a. S$\in$RCMIA(1b)
b. S is true.

MIA(1a) = {John has d children: d > 3}

The set of sentences that are more informative than (1b) *given the context* is the following:

CMIA(1a) = {John has more than d children: 4 $\leq$ d}

Again, we might as well assume that all of these sentence are relevant.

RCMIA(1a) = {John has more than d children: 4 $\leq$ d}

Again, it's enough to focus on the least informative member of the set: *John has more than 4 children.*

Fred will conclude that it's not the case Mary believes that this sentence is true.

Extra Assumption:

As a default Fred assumes that Mary is an opinionated speaker:

Hence, Fred concludes that Mary believes that this sentence is false.

1.3. The Exhaustivity Generalization

(3) The Exhaustivity Generalization: utterance of a sentence, S, as a default, licenses the inference that (the speaker believes that) all of the scalar alternatives of S that are *logically* stronger than S are false

(4) The Pragmatic Exhaustivity Generalization: utterance of a sentence, S, as a default, licenses the inference that (the speaker believes that) all of the scalar alternatives of S that are pragmatically/contextually stronger than S are false

If we are right about comparatives then The Exhaustivity Generalization is correct (rather than the Pragmatic Exhaustivity Generalization). This is the first argument (that I've promised in the first class) in favor of the syntactic account.

Similar cases of the same sort, though perhaps a little weaker:

(5) a. John has an even number of children. He has 3 children.
b. John is the kind of person that never does just SOME of the homework. Today he did some of the homework.
c. When John does some of the homework he does all of it. Today he did some of the homework.

2. Sauerland (2004): An argument in favor of the Gricean system

2.1. The Symmetry Problem

(6) John has 3 children.
John has 4 children.
John has exactly 3 children

(7) α
$\alpha \wedge \beta$
$\alpha \wedge \neg\beta$

We concluded that if an implicature is to be derived one of the two alternatives needs to be ignored, hence the postulation of Horn Sets.

But what would happen in a situation in which both alternatives were considered?

The default assumption of an opinionated speaker cannot be made, and only weak Primary Implicatures will be derived.

Sauerland's paper provides us with an argument that such a situation needs to be postulated when a disjunction it uttered:

(8) $p \vee q$ — $(p \vee q) \wedge p \quad (=p)$
$(p \vee q) \wedge \neg p \; (=q)$

This accounts for the fact that a disjunction yields the primary implicature that the speaker is not in a position to utter any of the disjuncts, and that this primary implicature is not converted into a secondary implicature.

Furthermore, a particular way of deriving the set of alternatives together with a particular implementation of the default assumption of an opinionated speaker resolves the disjunction puzzle, which we introduced in our first class.

2.2. Basic Disjunction:

(9) Mary: John read *The Idiot* or *The Brothers Karamazov*.
John: Interesting, let's reason:

John's reasoning:

1. Mary believes that (9) is true.

B_M(I or BK)

2. There is no sentence S, s.t. Mary believes that S is better to utter than (9).

   A sentence, S, is better to utter than (9) if:
   a. S∈RCMIA(1a)
   b. S is true.

ALT(9) = John read *I* or *BK*. — John read *I*. / John read *BK*. — John read *I* and *BK*.

RCMIA(9)=MIA(9) = John read *I*. / John read *BK*. — John read *I* and *BK*.

For each of these sentences, John will conclude that it's not the case Mary believes that the sentence is true:

Primary Implicatures: $\neg B_M$(I), $\neg B_M$(BK), $\neg B_M$(I & BK)

Extra Assumption:

As a default Fred assumes that Mary is an opinionated speaker:

Hence, For each of these sentences Mary believes that this sentence is false:

Secondary Implicatures: $B_M(\neg$I), $B_M(\neg$BK), $B_M(\neg$(I & BK))

But this together with the belief that (9) is true is a contradictory set of beliefs. Hence, the assumption that Mary is an opinionated speaker cannot be maintained. Hence there should be no Secondary Implicatures.

Sauerland-Opinionated-Speaker (SOS):

Hearer assumes that the speaker is as opinionated as possible.

For every S'$\in$Alt(S), the hearer assumes that the speaker is opinionated about S' if it is consistent with the assertion and the primary implicatures (i.e. if it is consistent with the assumption that the speaker is obeying the communicative principles).

John can assume that Mary is opinionated about I&BK, but not about any of the other alternatives.

The derived Algorithm:

When A is uttered by a speaker s:

1. Form the set of Primary (weak) Implicatures:
   PI = $\{\neg B_s(A'): A' \in$ RCMIA(A)$\}$

2. Form the set of Secondary (strong) Implicatures:
   SI = $\{B_s(\neg A'): A' \in$ RCMIA(A), and $B_s(A) \wedge PI \wedge B_s(\neg A')$ is not contradictory$\}$

Horn Set {and, or, L, R}

(10) a. [[p L q]] = 1 iff p = 1.
b. [[p R q]] = 1 iff q = 1.

(11) ALT(9) = John read *I* or *BK*. John read *I*. John read *BK*. John read *I* and *BK*.

Primary Implicatures: $\neg B_s$(John read I) $\neg B_s$(John read BK) $\neg B_s$(John read I and BK)
Secondary Implicature: $B_s(\neg$(John read I and BK))

2.3. The Puzzle of Disjunction

(12) John did the reading or some of the homework

This sentence appears to pose two challenges for our theory of implicatures:

1. How do we derive the implicature in (13):

(13) John didn't do all of homework

- By Sauerland's richer Horn Set for disjunction, from which it follows that the negation of (13) a member of ALT(12).

2. How do we avoid the implicature in (14)

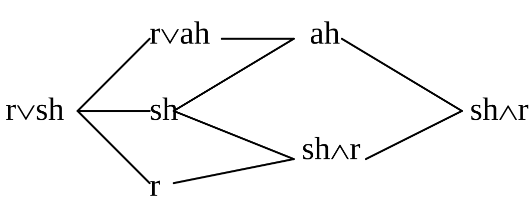
(14) It's not the case that John did the reading or all of the homework.

- By SOS, once we notice that (15) is a result of the assertion and the primary implicatures.

  (15) the speaker has no opinion as to whether or not John did the reading.

(16) John did the reading or some of the homework,

ALT(16) =



$B_s(r\vee sh)$
PI = $\neg B_s(r\vee ah)$, $\neg B_s(sh)$, $\neg B_s(r)$ (the rest follow)
SI = $B_s(\neg ah)$, $B_s(\neg(sh\wedge r))$ (the rest [$B_s(\neg(sh\wedge r))$] follows)