

Belief and assertion. Evidence from mood shift

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Plan

Is belief weak or strong?

Belief is strong

Belief is weak

Mood-choice: the homogeneity view and the strength of belief

BELIEVE in Italian: new data and proposal

First steps: Fictional predicates

Futurity

Predicates of personal taste

Analysis: First hypothesis: diasemy (Mari, 2016)

Beyond diasemy: mood as the mediator between credence and commitment

Consequences

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Belief and assertion

- ▶ Entitlement equality: "when you have sufficient evidence to entitle you to believe something, you have sufficient evidence to entitle you to assert something". (Hawthorne et al. 2016: 1394)

Belief and assertion

Belief entails and is entailed by assertion (Bach & Harnish 1979, Lauer 2013). - And behaves on a par with certainty.-

- (1) a. It rains, #but I do not believe/I am not certain that it rains
- b. I believe/I am certain that it rains, #but it does not rain.

Belief and assertion

Strong belief:

Conclusion 1: Belief is strong. It is as strong as certainty and assertion.

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Belief vs. assertion

- (2)
- a. It is raining, #but I am not sure it is raining.
 - b. I believe that it is raining, but I am not sure that it is raining.

(Howthorne et al. 2015)

Believe is also asymmetrically entailed by *be certain* and *know*.

- (3)
- a. I am sure that it rains, #but I do not believe it.
 - b. I believe that it rains, but I am not certain.

(Howthorne et al. 2015)

Belief is weak

Conclusion 2: Knowledge, certainty and assertion are stronger than belief.

Questions

- ▶ Is belief weak or strong ?
- ▶ What is the relation between assertion and belief-statements?

The view from Italian and mood shift.

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Mood choice

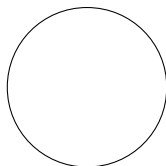
Common assumption (see discussion in Portner, forthcoming)

- ▶ Mood choice is the phenomenon whereby the verbal mood in an embedded clause is determined by a matrix predicate. Such predicates have a modal semantics.

Hintikka

Hintikka (1962) semantics

(4) ' α believe p ' is true in w iff $\forall w' \in \text{Dox}_\alpha(w)$, p is true in w' .



Dox_i only p worlds

Homogeneity and indicative

Semantic approaches (Giannakidou, 1999; Farkas, 2003; Villalta, 2008; Anand and Hacquard, 2013):

- ▶ Absence of alternatives in the modal base (i.e. **homogeneity**) triggers **indicative**.
- ▶ Presence of alternatives ($\{p, q\}, \{p, \neg p\}$) (i.e. **non-homogeneity**) triggers **subjunctive**.
- ▶ BELIEVE is an indicative selector
- ▶ BELIEVE = BE CERTAIN
- ▶ Parallel to DREAM, IMAGINE (with a fictional modal base)
- Ok for French, Greek, Romanian,

Problems

Homogeneity-based theories stumble on the Italian facts:
Mood shift with BELIEVE in Italian (*credere*):

- (5) Credo che Maria sia.SUBJ / é.IND incinta. –
I believe that Mary is pregnant.

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Mood shift with BELIEVE in Italian (*credere*):

- (5) Credo che Maria sia.SUBJ / é.IND incinta. –
I believe that Mary is pregnant.

And also: BE CERTAIN (*essere certo/sicuro*) and BE CONVINCED (*essere convinto*) license the **subjunctive** ! (Mari, 2016)

- (6) Sono sicura che Maria sia.SUBJ / é.IND incinta. –
I am certain that Mary is pregnant.
- (7) Sono convinta che Maria sia.SUBJ / é.IND incinta. –
I am convinced that Mary is pregnant.

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- (7) Sono convinta che Maria sia.SUBJ / é.IND incinta. –
I am convinced that Mary is pregnant.

And also (previously unseen): IMAGINE (*immaginare*) ! (Mari, 2016)

- (8) Immagino che Maria sia.SUBJ / é.IND incinta. –
I imagine that Mary is pregnant.

Is Italian belief weak ?

- ▶ What is the difference between the indicative and the subjunctive versions ?
- ▶ Weak or strong belief ? In what respect ?

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Key distinction

(meaning or use ? does not matter for now)

1. **Solipsistic-Fictional** Pure imagination, dream.
2. **Inquisitive-Fictional**: Conjecture about the truthiness of p . 'I do not know, but according to my imagination, p '

Indicative-fictional

Solipsistic mental space;
indicative.

- (9)
- a. Ha sognato che era **IND** andato in Italia.
He dreamt that he went to Italy.
 - b. Immaginava che andava **IND** in Italia.
He imagined that he was going to Italy.

Subjunctive-fictional

Previously unseen :

'Imagine' as conjecture

- (10) Immagino che tu fossi.SUBJ in ritardo, visto il traffico.
I imagine you were late, given the traffic jam.

Intuitively: 'I do not know' component; evidence.

Hence ...

1. IMAGINE uses a private space. Indicative.
2. IMAGINE is used to convey conjecture. Subjunctive.

BELIEF: same distinction

- ▶ Expressive-credere – Credence.
- ▶ Inquisitive-credere – Conjecture

Sharpening the proposal for BELIEF

- ▶ **Expressive-credere – Credence.**

The indicative-credere does not require knowability (it requires non-knowability?), it is a pure expression of credence.

- ▶ **Inquisitive-credere – Conjecture**

The subjunctive-credere requires that p be knowable, i.e. can be assigned a truth value otherwise than 'subjectively', i.e. relatively to an individual anchor.

Methodology: Consider contexts where, p cannot be known, i.e. unless a shareable parameter is accommodated, there is no fact of the matter about p : futurity and predicates of personal taste.

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Futurity and knowability

- ▶ Present and past are settled and *knowable*, and the future does not exist yet, hence it is *not knowable*. If the time of evaluation of p is future, p cannot be known at the utterance time (see for recent discussion Giannakidou and Mari, 2017).
- ▶ We can **accommodate** a plan or a decision, and p is settled and 'knowable' w.r.t this plan or decision.

Subjunctive / Indicative, future orientation and knowledge

Future orientation is possible with the subjunctive.

- (11) [We are organizing a party and John is invited. Usually John does not come to parties, however, he is very much in love with Mary and Mary is coming for sure.]
Credo che venga.**SUBJ** anche Gianni questa volta.
I believe that John is coming too this time.

see discussion in Mari, 2016

Subjunctive / Indicative, future orientation and knowledge

Future orientation with indicative:

(12) [My son has a tendency to forget stuff at school. My husband wants to buy an expensive scarf and asks me whether it is a good idea, or whether I believe that he will lose it.]

a. Credo che la perderà.**IND.FUT.**

b. #Credo che la perda.**SUBJ.**

I believe that he will lose it.

Subjunctive / Indicative, future orientation and knowledge

The subjunctive is possible only when there is a plan or information in the background of which p is settled.

p is 'knowable'.

- (13)
- a. Credo che le Olimpiadi si svolgano.SUBJ a Tokyo.
I believe that the Olympics will take place in Tokyo.
 - b. (#)Credo che la Francia perda.SUBJ, questa sera.
I believe that France will loose, tonight.

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I believe that the Olympics will take place in Tokyo.
- b. (#)Credo che la Francia perda.SUBJ, questa sera.
I believe that France will lose, tonight.

Conclusion: if p is not knowable, the subjunctive cannot be used.

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Predicates of personal taste (PPT)

No matter what your theory is, there is no 'fact of the matter' with PPT (Lasersohn, 2005; Stephenson, 2006) - unlike with epistemic modals.

With PPT, p is not metaphysically or circumstantially settled, p is not 'knowable'.

(14) The soup is tasty.

E.g. the tastiness of the soup is not intrinsic to the soup, it is not a 'fact of the matter' of the soup.

As with futurity is it possible to accommodate some form of 'objectivity': a standard of tastiness (as in the case of wines). There is some 'fact of the matter' about p .

Given the standard p is either true or false and p can be 'known'.

PPT - and insults

In the middle of an argument :

- (15) a. Credo che sei.**IND** un cretino.
 b. Credo che tu sia.**SUBJ** un cretino.
 'I believe that you are stupid.'

- ▶ (15-a) states a personal opinion about the stupidity of the addressee, based on a *subjective* evaluation (internal perception).
- ▶ (15-b) I am suggesting that *p* can be assigned a truth value by accommodating some shareable criterion of stupidity (it is felt as more insulting). I.e. I am raising the question of the stupidity of the addressee.

see discussion in Mari, 2016

Into the unknown

- (16) a. Gianni crede che esistono.**IND** i marziani.
b. Gianni crede che esistano.**SUBJ** i marziani.
'Gianni believes that martians exist.'
- ▶ (16-a) states a personal opinion about the martians.
 - ▶ (16-b) raises the question about the existence of the martians.

Anti-subjective predicates

(17) Che giorno è oggi ? (What day is today?)

a. Credo che è.**IND** martedì.

b. Credo che sia.**SUBJ** martedì.

'Gianni believes that martians exist.'

- ▶ (17-a) states a personal opinion (not very informative).
- ▶ (17-b) raises the question about whether it is Tuesday, conveys lack of knowledge.

Main point of assertion - Indicative

- (18) a. Sei.**IND** bella, credo.
You are good-looking, I believe.
Assertion weakener \neq
- b. Credo che sei.**IND** bella.
I believe that you are good looking.
Belief description.

And:

'No you do not believe it', is a possible reply only to (18-b).

Main point of assertion - Subjunctive

- (19) a. *Sia.SUBJ bella, credo.
You are good-looking, I believe.
- b. Credo che tu sia.SUBJ bella.
I believe that you are good looking.

And:

'No you do not believe it', is a possible reply to (19-b). The belief is at issue here as well.

(see Simons, 2007; AnderBois, 2015 for discussion).

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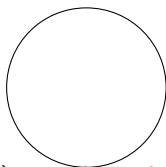
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Expressive credere

'Bare' Hintikka semantics (see Figure 1): **solipsistic mental state**.

Expressive: **credence**

1. **Expressive**: one layer of meaning; doxastic only **indicative**



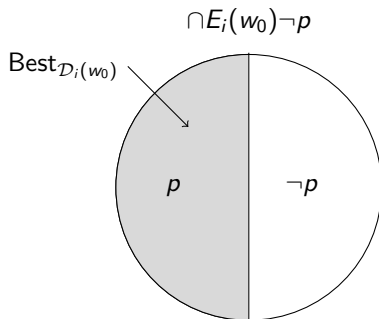
$\cap \mathcal{D}_i(w_0)$ ***p*-worlds only**

Inquisitive credere

'Knowability' triggers a knowledge layer.

Inquisitive: conjecture

- ▶ Two-layers (doxastic + epistemic layer): doxastic certainty and epistemic uncertainty.



Diasemy

- ▶ Diasemy, two BELIEVES: credence vs. conjecture.
- ▶ Common core: Credence is also part of the conjecture: doxastic certainty and epistemic uncertainty.
- ▶ Languages that have preferences set in such a way that subjunctive is preferred to the indicative allows us see the two meanings (see e.g. Gärtner and Eythórsson, 2017)
- ▶ Advantages: explain polysemy cross-classes (fictional, asking,)

From modal bases to common ground

A signal is detected (lack of knowledge) and it is hardwired in the semantics. Still not satisfactory, missing the point.

Why 'knowability' ?

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What is 'knowability'

Subjunctive conveys that

- ▶ Truth can be assessed.
- ▶ Not necessarily a metaphysical truth, but at least truth with respect to a restricted set of worlds (returned by plans, or standards - which we can *share*).
- ▶ We can *collectively* narrow down the set of worlds to what we consider to be the actual one.

The relation to the common ground

Looking at BELIEF from the standpoint of communication:

- ▶ Belief as Credence: does not aim at solving a question.
- ▶ Belief as Conjecture: aims at solving a question.

Revisiting the subjunctive-indicative distinction

- (20) Mood choice - a different criterion.
The subjunctive-indicative distinction with epistemic predicates signals different relations between private spaces and public spaces (common ground or others).

see Giorgi and Pianesi 1996.

Proposal

- ▶ Attitudes feature **update instructions** change the commitments of the participants in the conversation (see notion of speech acts in Szabolsci, 1982; Krifka, 2014,2015)
- ▶ Public spaces (sets of worlds): negotiation spaces \mathcal{N} and common ground \mathcal{C} (Farkas and Bruce (2010:88)); negotiation spaces are supersets of common grounds.
 - ▶ Assertions add p to \mathcal{N} and project a future \mathcal{C} that includes the asserted proposition
 - ▶ Questions add at least two alternatives to \mathcal{N} and projects a set of \mathcal{C} s, each containing only one of the possible answers to the question.
- ▶ Private space (sets of worlds): s .

Proposal

I will **not** subscribe to
 \mathcal{N} and \mathcal{C} are subsets of the doxastic space s of α .

On this view one cannot account for the fact that a belief is consistently held privately, without being held publicly. I will argue that this type of beliefs exist and they even come in different sorts.

Proposal

- ▶ This is the reflex of how believes are formed and on the basis of what evidence. We consider public commitment (the addition of p to \mathcal{N}) as requiring higher evidential standards (the case of lies set aside) than private commitment (the addition of p to s), which can be based on preferences and non rational evidence.

Implementation

BELIEF-statements and update instructions.

- ▶ Assertion 'A believes p ': the proposition BELIEVE- p is added to \mathcal{N}
- ▶ What about p ?
- ▶ p is introduced by the update instruction contributed by the attitude. (see also Portner, 2007 on modals)

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(21) Proposal for BELIEF:
Mary believes that p
ASSERT Mary believes-PRESENT that p

The meaning of BELIEF - and the speech acts

- (22) $\llbracket \text{credere} \rrbracket^s = \lambda p. \forall w' \in s(p(w'))$
Update instruction. $\mathcal{N} [p] = (\mathcal{N} \cap p) \ \& \ (\mathcal{N} - p \neq \emptyset)$
- (23) PRESENT : does not eliminate $\neg p$ worlds from \mathcal{N} .

Mood

Mood is not a polarity item (*pace* Giannakidou, 1999/2016; in some way also Farkas, 2003).

→ Verbal mood, just as sentential mood, instructs as how to update the (local) context.

- (24)
- a. Update instruction of subjunctive (update non-assertively):
 $W' [p_{subj}] = (W' \cap p_{subj}) \ \& \ (W' - p_{subj} \neq \emptyset)$
 - b. Update instruction of indicative (update assertively):
 $W' [p_{ind}] = (W' \cap p_{ind}) \ \& \ (W' - p_{ind} = \emptyset)$

The inquisitive belief.

- ▶ Subjunctive instructs to update \mathcal{N} non-assertively.

(25) Inquisitive-belief. $\llbracket \alpha \text{ credere } p_{sub} \rrbracket^s = 1$ iff $\forall w' \in s(p(w'))$
Update instruction. $(\mathcal{N} \cap p) \ \& \ (\mathcal{N} - p \neq \emptyset)$

Belief is strong in the private space and weak in the public space.

The inquisitive belief.

- ▶ The belief that p is privately consistently held, but the public attitude is inquisitive.

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Subsequent discourse can update \mathcal{N} assertively, given extra evidence.

- (26) Crede che esistano.SUBJ i Marziani; anzi, ne è sicuro.
'He believes that Martians exists, and in fact he is certain about it.'

'Certainty' can assertively add p to \mathcal{N} (but, unlike, 'knowledge' it does not presuppose that p is decided in \mathcal{C}).

The expressive belief.

When the update instructions of the attitudes and the embedded proposition clash, \mathcal{N} is not updated. This results in what we call **expressive-belief**.

(27) Expressive-belief. $\llbracket \alpha \text{ credere } p_{ind} \rrbracket^s = \forall w' \in s(p(w'))$

By using the indicative, the speaker intends to present p as a belief privately or *solipsistically* held by the attitude holder, that is to say a belief that it is not deemed to be added to the public sphere.

The expressive belief.

- ▶ The belief that p is privately consistently held, but there is no public commitment.
- ▶ The more 'endogenous' the evidence, the more exclusively private is the commitment.
- ▶ 'Expressive'-belief, typically used in religious texts.

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1. Belief vs. Assertion: No entitlement equality

Recall: Entitlement equality: If you are committed in the private space then you are ready to be committed in the public space.

Credence entails commitment in the public space.

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Recall: Entitlement equality: If you are committed in the private space then you are ready to be committed in the public space.

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Rejection of the entitlement equality.

- ▶ Credere+indicative: 'privately committed' (= credence) but neutral publicly (p can be true or false or none).
- ▶ Credere+subjunctive: 'privately' committed (= credence) and publicly partially committed.
- ▶ Lies: commitment in the public, but not in the private space.

2. Belief vs. Assertion: engagement and denials.

Different ways of (non-)engaging with the interlocutors as revealed by denial strategies.

Assertion: 'it is not true' !

- ▶ Expressive use: No public commitment. Typically religious talk.
Only possible denial strategy : 'faultless disagreement'.

(28) A. Credo che Dio esiste.**IND.** - I believe that God exists.
B. #No, hai torto/non é vero. - #You are wrong/#It is not true

No handle for any type of denial. Solipsistic space and solipsistic talk.

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- ▶ Inquisitive use: in the public context it is weaker than assertion. Denial strategy: you can be wrong, but not false.

(29) A. Credo che Gianni sia.**SUBJ** a casa.
B. #Non é vero / Ti sbagli.

3. BELIEF and BE CERTAIN: the evidential signal

Be certain (I believe it, but I am not certain)

- ▶ BE CERTAIN is an indirect evidential - inference.

(30) Looking at a car.
#I am certain that it is nice.

(31) The ball is either in A, B or C.
It is neither in A nor in B.
I am certain that it is in C.

- ▶ Update Instruction: CONDITIONAL (granted inferential evidence entailing p) ASSERTION: eliminate $\neg p$ worlds.
- ▶ NB we can have *be certain* with subjunctive as well ! Sometimes we cannot eliminate $\neg p$ worlds (not discussed here).

3. BELIEF and BE CERTAIN: the evidential signal

- ▶ Update instructions correlate with evidentiality restrictions.
 - ▶ BELIEVE : uses factual evidence *and* internal perception hence cannot eliminate $\neg p$ worlds from the negotiation space.
 - ▶ BE CERTAIN: indirect evidence that can entail p hence, it can eliminate $\neg p$ worlds from the negotiation space.

Conclusion

Why is the subjunctive overwhelmingly used with non-factives epistemics (and I find that)

- ▶ Subjunctive indicates that there is an operation on the public space and truthfulness of p is investigated.
- ▶ Indicative is relegated to a solipsistic space in a solipsistic talk.

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In common conversations:

Subjunctive overwhelmingly used because we rarely engage in solipsistic talks!

By looking at mood from the standpoint of communication, and given what the contribution of mood is, we can better understand why subjunctive is overwhelmingly used with non-factive epistemics (and find that but this will be for another talk).

Conclusion

Thank you !

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