Belief and assertion. Evidence from mood shift.

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Question and proposal According to the influential view stemming from Frege's work (Frege, 1918), the speech act of assertion is the result of the communicative intention of making visible some internal state or thought. Insofar as asserting is making a belief known, the assertion of the belief that p (1-a) and the assertion of p (1-b) would amount to one and the same act (see for recent work, Lauer, 2013).

(1)   a.   I believe that it is raining.
            b.   It is raining.

In support of this view, the following Moorean paradoxical sentences show that Bp ('believe p) and Ap ('assert p') are equivalent.

(2)   a.   I believe that it rains, #but it does not rain.
            b.   It rains, #but I do not believe that it rains.

While (2-b) can be reasonably endorsed at least for sincere assertions, (2-a) is problematic in view of a different set of facts. In particular, the minimal pair in (3) shows that belief is weaker than bare assertion, given the possibility of the 'I am not certain' continuation with the latter only (Hawthorne et al. 2016). The question thus arises of whether belief is strong (as strong as assertion) or weak.

(3)   a.   It is raining, #but I am not certain that it is raining.
            b.   I believe that it is raining, but I am not certain that it is raining.

We add new elements to the debate from the standpoint of mood choice in languages that allow both indicative and subjunctive under 'believe'-predicates. These languages are notoriously left out by current theories (a.o. Farkas, 2003; Villalta, 2008; Anand and Hacquard 2013; Giannakidou, 2016) which (i) postulate a Hintikkean semantics for belief (4) and (ii) work under the assumption that the subjunctive is triggered by the presence of alternatives in the modal base. Since the Hintikkean doxastic space is homogeneous, 'believe'-predicates are considered to be indicative selectors across languages.

(4)   Let $\mathrm{Dox}_\alpha(w)$ be the set of worlds compatible with what α believes in w.
         'α believe p' is true in w iff $\forall w' \in \mathrm{Dox}_\alpha(w), p$ is true in w'.

Italian licenses both subjunctive and indicative under *credere* ('believe'). We will consider mood shift as key entry into the semantics of belief, and we will ask whether belief is monosemous or polysemous, weak or strong.

The main novelty of our account is that epistemic attitudes feature an *update instruction* akin to speech acts (à la Krifka, 2015) that indicates how (and whether) the common ground (and more precisely the negotiation space, cf. *infra*) is to be updated. We revisit the initial distinction in Hamblin (1970) according to which speech acts and attitude predicates contribute two different types of commitments, namely public and private respectively and elaborate a proposal according to which representational attitudes (epistemic and fictional at least[1]) *lexically encode speech-act-like content* and are thus to be understood in complementary distribution with assertions, imperatives and questions.

Data We show that, in Italian, the subjunctive is chosen when p is **knowable**, that is to say, it can be assigned a truth value in the context of utterance. To prove this, we privilege contexts where p is not knowable such as futurity (Condoravdi, 2002) and predicates of personal taste (Lasersohn, 2005; Stephenson, 2007). We assume that, in both these contexts, truthiness of p cannot be assessed, unless plans/decisions (with futurity) and standard (shareable by the participants) (with predicates of personal taste) are accommodated. p is thus assigned a truth value and is knowable with respect to the worlds that comply with the plan/decisions/standards.

1. Predicates of personal taste. (5-a) and (4-b) have two different interpretations. By uttering (5-a), the speaker intends to make his/her own belief known. By uttering (5-b), and choosing the subjunctive, the speaker intends to convey that s/he is trying to prove the stupidity of the addressee, which s/he treats as a matter that can be settled. With (5-a), s/he is only expressing her/his own state of mind. (5-b) conveys

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[1]We will extend the analysis to fictional predicates in the long version.

instead that the attitude holder does not know whether the addressee is actually stupid. Scenario: two friends are arguing with each other.

(5)   a.   Credo davvero che sei.IND un cretino. / b. Credo davvero che tu sia.SUBJ un cretino.
            I really believe that you are stupid.

2. Futurity. We also newly note that the subjunctive in embedded clauses is compatible with futurity only if the matter is already settled at the time of utterance (6-a) and p is knowable. (Note that even for metaphysical determinists the future is not knowable). When this is not the case as in (6-b), only the indicative - plus future tense - is possible.

(6)   a.   Credo che le Olimpiadi del 2020 si svolgano.SUBJ a Tokyo.
            I believe that the Olympics of 2020 will take place in Tokyo.
       b.   #Credo che la Francia perda.SUBJ domani. – I believe that France will loose tomorrow.

3. Martians A third set of facts shows that the subjunctive is preferred when a question is posed.

(7)   a.   Gianni crede che esistono.SUBJ i Marziani.
       b.   Gianni crede che esistano.IND i Marziani.
            'Gianni believes that the Martians exist.'

By uttering (7-a), the speaker reports a mental attitude of Gianni (probably suggesting that Gianni is somehow on the wrong track in believing that martians exist). By choosing to use the subjunctive (7-b), the speaker not only reports a belief of Gianni, but also raises the question of whether martians exist.

This observation allows to conclude that, with the subjunctive, p becomes a question (a QUD, see Ginzburg, 1996; Roberts, 1996/2012) and the sentence does no longer only describe the mental state of the attitude holder. We must note, though, that the main predicate does not have a parenthetical use (Simons, 2007),[2] as the impossibility of being dislocated show ((8), the subjunctive is ungrammatical in main clauses in Italian) - For cross-linguistic comparison and variation AnderBois, 2016.-

(8)   *I   Marziani esistano.SUBJ, crede.
       The Martians exist,   believe.3SG.PRES

Analysis 1. Articulating public and private commitments. Overall, the subjunctive is used to convey uncertainty about the truthiness of p. One straightforward way to capture this observation would consists in hardwiring in the semantics the lack of knowledge component (Mari, 2016). However, this would not explain why 'knowability' of p is triggered by the subjunctive.

   Moving to consideration of how knowledge is interactively built in conversations (Stalnaker, 1978; Roberts, /19962012), we submit that the subjunctive is chosen to raise a question (it poses a QUD, Roberts, *ibid.*), with the goal of narrowing down $\mathcal{C}$ (defined as the set of propositions shared by the participants in the conversation) to the actual world (or to what the participants agree to consider the actual world). Unlike in Simons, 2009; AnderBois, 2016 p is not the main point of assertion, and it is not used assertively. To implement our main idea about non-assertiveness of p, we revisit the meaning of the attitudes - and 'believe' in particular -, considering their contribution in attempting to update $\mathcal{C}$. We argue that representational attitudes contribute to both the private and the public (modal) spaces.

   Old and much of recent work on speech acts has proposed fruitful revisitations of the notion of common ground, and, more broadly, of doxastic spaces (see e.g. Hamblin, 1970; Clark and Schaefer 1989; Frakas and Bruce, 2010; Ginzburg, 2011; Krifka, 2015). With Farkas and Bruce (*ibid.*) we assume that projected sets (which we relabel 'negotiation spaces' $\mathcal{N}$) and $\mathcal{C}$ must be distinguished. Negotiation spaces are supersets of common grounds (see also Portner, 2007). According to Farkas and Bruce (2010:88), assertions (by adding p to $\mathcal{N}$) project a future $\mathcal{C}$ that includes the asserted proposition, whereas a question (by adding at least two alternatives to $\mathcal{N}$) projects a set of $\mathcal{C}$s, each containing only one of the possible answers to the question. This is a feature that we will maintain in our account, where negotiation spaces rather than the common ground will play a role (in order to be added to he common ground either the ratification or an answer from the addressee is needed, a move which we do not consider here, for now).

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[2]Even if the ability of being dislocated is not considered as reliable test, with 'believe/think', it prototypically reveals their ability to be used parenthetically, see discussion in Simons, 2007.

To shed some light on the difference between (1-a) and (1-b) we will abandon two generally held assumptions.

The first assumption that we abandon is that $\mathcal{N}$ and $\mathcal{C}$ are subsets of the doxastic space $\mathcal{D}$ of α (or doxastic commitments, see Farkas and Bruce 2010:86). With no further specifications, on this assumption, one cannot account for the fact that a belief is consistently held privately, without being held publicly. Let us assume that (1-a) states that p is decided in $\mathcal{D}$ (i.e it follows from $\mathcal{D}$; e.g. Farkas, 1982,2003; Anand and Hacquard, 2015; Giannakidou 2016) and that (1-b) states that p is decided in $\mathcal{N}$ (i.e. p follows from $\mathcal{N}$). (1-a) is predicted to entail (1-b): If α holds the belief that p (p is decided in $\mathcal{D}$), then $\neg p$ is no longer an option in $\mathcal{N}$ (note that this predicts (2-a), which we will explain otherwise, once we have disentangled bare assertions from belief statements).

Moreover, for sincere assertions, it is also assumed, as per Grice, that, if p is decided in $\mathcal{N}$, then p is decided in $\mathcal{D}$ (see the 'perspective' section below). On this assumption (1-b) entails (1-a), see also (2-b). We return to this assumption later in the perspectives and we do not consider it here.

We claim that, in order to distinguish between the bare assertions and belief-statements not only private (ie. space s, with s being the set of worlds compatible with the beliefs of the assessor) and public spaces ($\mathcal{N}$) must be explicitly distinguished (see Hamblin, 1970; Gunlogson, 2001) but the possible articulations between these two must also be spelled out. Overall, different interpretations of belief statements reveal different articulations between s, $\mathcal{N}$ and $\mathcal{C}$. The Italian data lead us to propose that $\mathcal{N}$ can turn to be a superset of s, when the speaker is ready to be privately, but only partially publicly committed.

This is not a violation of any maxim, but 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.

The possibility of privately committing without publicly committing (or only partially publicly committing, i.e. the addition of both p and $\neg p$ to $\mathcal{N}$) gives a handle to disentangle assertion and belief and makes a new case, besides lies, to separate the public and the private spheres of belief as not mutually entailing.

2. Revisiting the meaning of the attitudes. On the assumption that the illocutionary makeup of a bare assertion is ASSERT, p, we propose that the illocutionary makeup of a belief sentence is as in (9).

(9)   ASSERT John believes-PRESENT p

While the higher ASSERT updates $\mathcal{N}$ with the proposition [α believe p], PRESENT is in charge of updating $\mathcal{N}$ with p, non-assertively. PRESENT is what we call an *update instruction*. Update instructions are *triggered lexically*, by the attitudes; their semantics is akin to the one of speech acts à la Krifka (2015) as they provide an instruction as to how to move $\mathcal{N}$ forward.

We propose that epistemic attitudes feature a static and a dynamic meaning. They describe the doxastic state of the speaker, (this is the *private* facet of belief), and they instruct as how to update the negotiation space (this is the *public* facet of belief). Given a model M = $\langle W, V, \mathcal{A} \rangle$, let $\mathcal{C} \subset W$ be commitment state and $s \subset W$ the doxastic state of the attitude holder α ($\alpha \in \mathcal{A}$) and $\mathcal{N} \subset W$ the negotiation space.

The lexical entry for *credere* ('believe') is in (10). Let $p \subset W$. s is a Hintikkean doxastic space containing p worlds. Note that, when updating $\mathcal{N}$ with p, $\neg p$ worlds are not eliminated from $\mathcal{N}$.

(10) $[\![credere]\!]^s = \lambda p.\forall w' \in s(p(w'))$
         Update instruction. $\mathcal{N}[p] = (\mathcal{N} \cap p)$ & $(\mathcal{N} - p \neq \emptyset)$

3. Revisiting the meaning of mood. We do not consider mood on the verb in the embedded clause as a polarity item (*pace* Giannakidou, 2016; see Mari, 2017). We rather assign to verbal mood an update instruction, thus narrowing the distance between verbal and sentential mood (see also Portner, 2017). Let W' be a subset of W. The non-at-issue update instructions triggered by mood are in (11) ($p_{subj/ind}$ are propositions whose main predicate is in the subjunctive/indicative).

(11)   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):
                $W'[p_{ind}] = (W' \cap p_{ind})$ & $(W' - p_{ind} = \emptyset)$

Subjunctive enhances a question-like update; indicative enhances a assertive like update (see Mari, 2015,2017).

4. Bringing together attitudes and mood: inquisitive and expressive belief. **Inquisitive belief.** As subjunctive instructs to update non-assertively, $\mathcal{N}$ is updated with p. This triggers what we call 'inquisitive' belief, that it is to say, $\mathcal{N}$ contains future common grounds in which p can be added and future common grounds in which $\neg p$ can be added.

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

Inquisitive belief shows the mismatch between the private and the public sphere that we mentioned above. The belief that p is privately consistently held by the attitude holder, but her public attitude is inquisitive rather than assertive, thus revealing a lack of public commitment, in spite of a private commitment. This mismatch is the reflection of the the evidential conditions under which inquisitive belief is held. The evidence can be such that it is sufficient for the attitude holder to privately form the belief that p, but is it not sufficient to lead the attitude holder to publicly commit to p. Note that subsequent discourse can update $\mathcal{N}$ assertively, given extra evidence, see (3-b) (see also Mari, 2016).

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

We will submit that 'certainty' assertively adds p to $\mathcal{N}$ (but, unlike, 'knowledge' it does not presuppose that p is decided in $\mathcal{C}$).

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**.

(14)   Expressive-belief. $[\![\alpha\ credere\ p_{ind}]\!]^s = \forall w' \in s(p(w'))$

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.

Predictions

1. This analysis predicts the distributions of moods in Italian. The use of the subjunctive generates what we have labeled the 'inquisitive'-use of *credere*: a question is posed (e.g. (4-b) where the Olympics will take place / (5-a) weather the addressee is stupid). When the indicative is chosen, the 'expressive' use of *credere* is generated (4-a. and 5-b), whereby the speaker goes solipsistic, and does not aim at posing a question, but only at expressing his/her own point of view (or the point of view of the attitude holder). Overall, expressive-belief reveals less confidence in the evidence held by the assessor than inquisitive belief, as no engagement in the public space is triggered. Inquisitive-belief poses instead the question $?p$.

2. We explain the multiple discrepancies between belief and assertion and are able to distinguish: public full commitment (sincere assertion); no public commitment (expressive-belief); partial public commitment (inquisitive-belief); no private commitment (lies). Belief, we argue, is privately strong but publicly weak. With sincere assertions, public commitment entails private commitment. This explains (2-a): $A \neg p$ entails $B \neg p$, which is in contraction with the first conjunct Bp.

3. We can safely spell out patterns of denials: assertions are denied with "it is not true" (and alike); expressive-belief gives rise to faultless disagreement; inquisitive belief supports a "you are wrong" type of denial, as it is weaker than assertion in the public space (we argue that the 'you are wrong' type of denial is conventionally associated to non-assertive expressions like epistemic modals, see Giannakidou and Mari, 2017).

4. We will tentatively propose that representational attitudes (epistemic and fictional) across all languages introduce update instructions. In languages that lack mood, the choice between the two interpretations (partial update with inquisitive belief or lack of update with expressive belief) is driven contextually.

Perspectives We submit that when p is decided in $\mathcal{N}$, or even in $\mathcal{C}$, but the speaker uses the subjunctive, an effect of 'distancing' is obtained (as this contradict the Gricean-like maxim according to which if p is decided in $\mathcal{N}$, it is also decided in s). This can happen with epistemic factives, such as Italian and French *capire/comprendre* (*understand*), or *admettre* (*admit*). We will call this type of distancing 'partial endorsement.' These observations leads us to question the evidential underpinnings of belief and acceptance, which we leave out here for future research.

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