

Two dogmas of attitude reports

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1 Readings and Meanings of Attitude Reports

- The traditional view of the meaning of attitude reports is based on an assumption that is so widespread, undisputed and unexplained that principle (A) can be called a dogma.
- (A) The meaning of an attitude report finds expression in the readings the report has.
- When prompted, one would probably come up with a definition of a reading as in (R).
- (R) A reading of an attitude report is a logical form from a certain logical form formalism that is assigned to an attitude report to capture the conditions under which the attitude report is true.
- The concept of a reading thus embodies the view that to know the meaning of a sentence is to know its truth-conditions.
 - Truth-conditions of a sentence are explicated with logical forms from a certain logical form formalism.
- (1) Adrian wants to buy a jacket like Malte's.
- It is widely accepted that (1) can be true in more than one way if the semantics of *want* is assumed to be a modal predicate indicating a preference-ranking of possible worlds.
 - That is, the NP *a jacket like Malte's* can be placed either inside or outside the scope of the modal predicate *want* in the logical form that is assigned to (1).
 - The textbook presentation of the two most prominent logical forms of (1) is given in (2a) and (2b) respectively.
 - (I ignore the problem of Quantifying-In, as it is orthogonal to the aims of this paper.)
- (2) a. De Re/Wide scope transparent: $(\exists x)(\text{jacket}(x) \ \& \ \text{like-Malte's-jacket}(x) \ \& \ \text{wants}(\text{Adrian}, \text{buy}(\text{Adrian}, x)))$
b. De Dicto/Narrow scope opaque: $\text{wants}(\text{Adrian}, (\exists x)(\text{jacket}(x) \ \& \ \text{like-Malte's-jacket}(x) \ \& \ \text{buy}(\text{Adrian}, x)))$
- Not any logical form assigned by a logical form formalism to a sentence is to be considered a reading.
 - The traditional notion of a reading involves the additional qualification that for a set of two or more readings, there is no 'overlap' in their truth-conditions.
 - An overlap of truth-conditions can be diagnosed with the evaluation of logical forms against a specific type of 'scenarios' (i.e. small scale models), the textbook presentation of the reading diagnosis is in (D).
- (D) "[C]onstruct scenarios that make one of the readings true and the other false. This establishes the existence of two readings." [von Stechow and Heim, 2011, p. 85]
- For attitude reports it is commonly assumed that the kind of scenarios that justify the existence of readings of an attitude report are descriptions of attitudinal states.

- The underlying assumption, rephrased with principle (B) is similarly widespread, undisputed and dogmatic as principle (A).
- (B) The different readings of an attitude report correspond to attitudinal states that the report can be plausibly used to describe.
- (B) embodies the view that to know the truth-conditions of a sentence is to know what the world plausibly would have to be like for it to be true (so, here what the attributee's attitudinal state would have to be like)
 - For example, a plausible description of an attitude (a way the world could be like) of which only the *de dicto* reading (2b) of (1) is true but not the *de re* reading (2a) is given in (3a).
- (3) a. Adrian has seen Malte's jacket and wants to buy a similar jacket.
 b. Adrian has seen a jacket and wants to buy it. He does not know that the jacket he wants to buy is like Malte's jacket.
- Vice versa, the *de re* reading is true given the plausible description (3b) whereas the *de dicto* reading is false.
 - According to (D), (2a) and (2b) are two readings.

2 Readings with no Meanings, Meanings with no Readings

- Two important questions arise with respect to the correspondence theory of readings and attitudinal states:
 - Given a certain logical form formalism, are there descriptions *D* of attitudinal states (scenarios) which a sentence *S* can plausibly report although the logical form framework employed for the analysis of *S* doesn't provide a reading that expresses the truth of *S* given *D*?
 - Are there readings of an attitude report *S* provided by a logical form formalism for which there is no corresponding plausible description of an attitudinal state *D*?
 - Fodor [1970] came up with examples of both types:
 - (4a) is a description of a plausible attitude of Adrian for which the logical form formalism that provides the scope-based *de re/de dicto* distinction provides no well-formed reading (see (4b)) although (1) is a plausible report of the attitude described.
 - (4d) is a well-formed reading provided by the logical form formalism that generates the scope-based *de re/de dicto* distinction but for which the corresponding description of an attitudinal state (4c) is commonly not judged as plausible (it is a pathological artifact produced by the logical form formalism).
- (4) a. Adrian has decided what kind of jacket to buy but has no idea that the kind of jacket he wants is just like Malte's jacket
 b. Narrow scope transparent: #like Malte's-jacket(*x*) & Adrian wants($(\exists x)$ buy(Adrian, *x*))
 c. There is something which Adrian wants to buy as a jacket like Malte's.
 d. Wide scope opaque: $(\exists x)$ Adrian wants(like-Malte's-jacket(*x*) & buy(Adrian,*x*))
- When considered against the background of these examples, the (A)/(B) approach to attitude reports runs into problems.
 - According to (A), in a logical form framework that generates the *de re* and *de dicto* reading based on the analysis of *want* as a modal predicate, (4d) is a reading of (1).
 - According to (B), it is widely agreed that contexts for (4d) characterize a preposterous attitude of Adrian and thus (4d) should be ruled out as a reading of (1) (although there are also arguments in favor of keeping this reading, see Gendler-Szabo [2010] and the discussion in Keshet and Schwarz [2014]).

- According to (B), (4a) is an intuitively plausible description $R3$ of Adrian's attitude
- According to (A) there is no reading of (1) such that (1) is a plausible report of the attitude description in (4a) because (4b) is not a logical form generated by the logical form formalism that provides the initial *de re/de dicto* distinction based on the analysis of *want* as a modal predicate.
- But if there were a logical form for $R3$, this logical form would be a reading of (1) according to (D), as neither the *de re* nor the *de dicto* reading is true given $R3$.
- Problem: (A) and (B) contradict each other in the identification of the readings of an attitude report and thus in the identification of the meaning of an attitude report.

3 The Problem of the Missing Reading

- The common strategy to maintain the (A)/(B) approach is to consider the problem formulated by Fodor a technical challenge to the design of a logical form framework that derives the 'missing' reading for $R3$.
 - That is, to replace the logical form framework L_1 that generates the textbook *de re/de dicto* distinction with a (more expressive) logical form framework L_2 such that the attitude description $R3$ for which L_1 generates no reading can be correlated with a reading \mathcal{R} generated by L_2 .
 - But then, if the meaning of an attitude report finds expression in the readings an attitude report has, the same attitude report (1) has a reading \mathcal{R} that it has in L_2 but not in L_1 and consequently, the meaning of (1) depends on the logical form framework in which its readings are explicated.
 - In fact, a reading \mathcal{R} may exist only in a certain L_2 but not in others.
 - To generate the *de re/de dicto* ambiguity we assumed that *want* is a modal predicate and thus the scope of *want* distinguishes two positions for the NP that is in the scope of *want*.
 - No similarly obvious cue like the scope-taking capacity of *want* is available for the relevant semantic distinction required for the logical form of $R3$.
 - All that we - as designers of the logical form framework - are left with is the description of an attitude with $R3$ of which (1) is a plausible report and of which its potential logical form will be a reading of (1).
 - Now recall that the existence of a reading is granted by (D) via the truth resp. falsity of readings in certain scenarios
 - That is, (D) is not sensitive to the exact description of the scenario as long as the intuitive truth of (1) is preserved.
 - The common approach to Fodor's $R3$ exploits this liberality of the criteria for the existence of readings.
 - Under the preservation of intuitive truth of (1), we can rephrase $R3$ to indicate a particular cue (the truth-maker for the reading established by $R3$) to the semantic distinction of $R3$ in a logical form framework.
 - E.g. you could rephrase $R3$ as an attitude that is directed towards an existing set of jackets like Malte's as in (5).
- (5) Suppose a store sells some jackets that all look like Malte's and that Adrian does not know anything about Malte. Assume further that Adrian wants one of those jackets and any of them is an option. [Romoli and Sudo, 2009, p. 427]
- But you could also rephrase $R3$ as an attitude that is directed towards a certain property of jackets that is also a property of jackets like Malte's as in (6).
- (6) Malte and Adrian do not know each other. Adrian has seen a green Bench jacket in a catalogue and wants to buy one. Malte happens to own precisely such a green Bench jacket. [Schwager, 2009, p. 395f.]

- The two rephrasings of $R3$ (5) and (6) provide different truth-maker cues to how a reading can be true of $R3$; either via actual jackets like Malte's or via actual properties of jackets like Malte's.
- But then, the $R3$ description we started with will get different logical forms depending on the logical form framework that is indicated by the cues in the rephrasing of $R3$.
- Furthermore, it may be the case that the readings for $R3$ provided in different logical form frameworks show no complete coincidence in their truth-conditions.
- In fact (Pross [2014] for a detailed argument):
 - A reading which requires actual jackets in its establishing scenario (a $R3$ -redescription) to be true is false for a scenario (a $R3$ -redescription) in which there are no actual jackets like Malte's that can be bought (e.g. if green Burberry jackets are sold-out in (6)).
 - The other way round, a reading which requires properties of jackets like Malte's in its scenario (a $R3$ -redescription) to be true is false for a scenario (a $R3$ -redescription) in which no specific property of jackets is identified to be relevant to the desire from the perspective of Adrian (e.g. if Adrian enters a department store to buy one of those jackets the store sells, as in (5)).
- According to the (D) principle for reading existence we would then have established that the two logical forms for $R3$ are different readings of (1) given $R3$.
- That is, the different $R3$ -readings are visible only to a specific logical form framework given specific assumptions about the truth-maker cues (and even in an again more expressive logical form framework L_3 in which all $R3$ -readings can be captured, the $R3$ -readings would still live only in L_3)
- Fodor's missing reading is not the only case for which the theory-dependence of readings has been observed.
- E.g. Pearson [2014] argues that the *de se* reading of an attitude report such as (7) similarly depends on the logical form framework; (*de se*-as-binding logical form framework Chierchia [1990] vs. *de se*-as-*de re* logical form framework Maier [2009]).
- Pearson [2014] shows that the readings depend on the way in which the truth-maker cues are provided in *de se* scenarios (either the attitude holder is identified as the individual the attitude holder imagines to be or as the individual the attitude holder believes to be).

(7) John_{*i*} believed that he_{*i*} was a loathsome idiot.

- If meanings according to the (A) principle exist only in a certain logical form framework, the readings of an attitude report are *artifacts* that appear only when you are looking at the meaning of the attitude report through the glasses of a certain logical form framework (independent of whether the logical form framework is a L_3 'super'-logical form framework or not).
- The observation generalizes to the common wisdom readings of *de re* and *de dicto*.
- If *de re* and *de dicto* readings are motivated on the same grounds as the missing readings, how do we know that they exist independent of a specific logical form framework?
- A natural reply to this question and also to the claim that readings are artifacts seems to be that the *de re* and *de dicto* readings receive evidence independent of the assumption of a certain logical form framework from the (D) principle, which establishes the existence of readings from scenarios.
- But then, can scenarios that serve the purpose of establishing readings really be independent of the assumption of a logical form framework?
- If we start from the assumption that there are two readings and then construct scenarios that make one of the readings false and the other true (and vice versa), the scenarios implicitly mirror the truth-conditions of the readings to be established.

- This is because any scenario that makes a reading true or false must mirror the structure of the logical form which it ought to make true or false in order to provide the relevant truth-maker cues that foster the impression of ‘intuitive truth’ or ‘plausible interpretation’.
- In other words, the relevant scenarios are designed according to a certain ‘templatic’ structure of presentation that replays the presumed logical form of the reading to be approved (and all of the scenarios I mentioned up to now are templatic in this sense).
- Thus, a scenario that establishes a reading cannot be independent (in the sense of independent evidence) of the logical form framework the generates the reading if it is to fulfill its purpose.
- The (D) principle is circular in that it establishes the existence of readings on the assumption of readings and scenarios add no additional evidence to the existence of readings.
- Figuratively: in (D)-scenarios, we see the meaning that we wanted to see because we constructed the scenario to show the meaning that we wanted to see.
- Attitude reports seem to be special in this respect because contextual information increases the ambiguity of an attitude report instead of reducing it. Thus, the purported ambiguity is not reduced to ‘a way the world could be like’ but scenarios contain the same linguistic construction as that which is to be explained (an attitude reports). The underlying reason may be that attitudes are often not regarded as part of the empirical world, and this may set the ambiguity of attitude reports apart from ‘ordinary’ quantifier or PP-attachment ambiguities that can be reduced to empirical observations about ways the world could be like.
- I conclude that the traditional notion of a reading is problematic in that it implies a conception of the meaning of an attitude report that depends on the choice of a certain logical form formalism and justifications for a certain logical form formalism a circular.
- Unless the meaning of an attitude report encodes the choice of a certain logical form framework, the meaning of an attitude report cannot be justified as finding expression in the readings it has.

4 Breaking open the circularity of readings

- My argument in the last section pertained to a particular conception of the meaning of attitude reports, namely a conception of meaning based on (A) and (B) in which the meaning of an attitude report is identified with the readings the attitude report has according to a certain LF-formalism.
- I did not argue against the assumption that the interpretation of an attitude report can be true or false.
- In this section, I will come up with an attempt to escape the theory-dependence of the traditional view by breaking open the circular argumentation of justifying (A)/(B) with (D) and vice versa.
- To this end, the meaning of an attitude report must be motivated on grounds different than (disambiguated) attitude reports themselves, i.e. scenarios.
- The insight that a semantic theory of attitude reports should be based on a theory of attitudes is an idea that has been central to the development of Discourse Representation Theory (DRT), a representationalist framework of formal semantics in which the interpretation of a certain natural language utterance is identified with a mental representation the interpreter builds from the linguistic input she receives Kamp [1984].
- But this is not the only way that mental representations can be understood in DRT.
- It is natural to consider those mental representations that speakers form in response to linguistic input as the same mental representations that can be ascribed with (sequences) of attitude descriptions to attitude holders or which are those mental representations which an attitude holder herself maintains (possibly without explicit verbalization). (Kamp [1985], Kamp et al. [2011]).
- In the next section, I sketch an analysis of the meaning of (1) starting from the assumption that the meaning of a desire report finds expression in the semantic representation of the mental state ascribed to Adrian by the reporter from a third-person perspective.

- That is, I propose to replace the (A) principle with (A')

(A') The meaning of a third-person attitude report finds expression in the semantic representation of the mental state that is ascribed to the attitude holder by a speaker.

- I substantiate the semantic representation of the mental state identified by (1) in two steps.
- First, I propose an analysis of desires based on dispositions to act in a certain way.
- Second, I adopt Maier [2015b]'s theory of parasitic attitudes to argue that (1) is an ascription of a parasitic desire in which the doxastic host of the desire is underspecified.

5 Desires as Pro-Attitudes

- What kind of mental state is a desire?
 - In the philosophy of action, desires are often analyzed as pro-attitudes, i.e. mental states that are capable of playing a causal role in their induction of a tendency to act in a certain way
 - (Note: I thus adopt a reductionist conception of desires à la Lewis [1994], but still consider future-directed intentions non-reducible, see Bratman [1987]. To me, *Adrian intends to buy a jacket like Malte's* seems to require that Adrian is aware that his intention is one of which the realization will get him a jacket like Malte's and thus, unlike desire ascriptions, intention ascription is a kind of behaviour explanation which commits the reporter to certain assumptions about (explanatory/rationalizing) beliefs on the side of the reportee).
 - Furthermore, in the philosophy of mind, the most important distinction is that between the first- and third-person perspective on mental states, and this distinction also has repercussions on the analysis of attitude reports.
 - If Adrian reports his desire in the first-person-perspective with *I want to buy a jacket like Malte's*, there is no room for the traditional ambiguities since *I want to buy a jacket like Malte's* cannot be true utterance by Adrian if he isn't aware that what he wants to buy is a jacket like Malte's.
 - The third person perspective, however, takes a different point of view in that Adrian's verbal and non-verbal behaviour can be assessed under consideration of information that Adrian may not be aware of.
 - The kind of attitude report we were considering with (1) can involve such additional information in the assessment of Adrian's attitude; e.g. the scenario in R3 involves reporter-only knowledge about what kind of jacket Malte has.
 - In combination with the action feature of desires, the third person perspective of attitude reports like (1) motivates a third-person concept of desire reports in which the third-person report of a desire does not make any commitments about the first-person mental state underlying the behaviour.
 - That is, the analysis of desires I would like to propose for desire reports is the one in (8).
- (8) x wants ϕ if and only if x is disposed to take whatever actions it believes are likely to bring about a state of affairs of which it is true to say (for the reporter) that ϕ obtains.

6 Desire Ascriptions and Folk Psychology

- Why do I endorse a behaviour-based conception of desires instead of the preference-ranking of possible worlds à la Stalnaker [1984] that has been popularized with Heim [1992]?
- Stalnaker's idea is that "*wanting* something is preferring it to certain relevant alternatives, the relevant alternatives being those possibilities that the agent believes will be realized if he does not get what he want" [Stalnaker, 1984, p. 89]
- First of all, Stalnaker motivates his proposal on the grounds of first-person reports, for which the purported ambiguities of (1) do not arise.

- While Stalnaker doesn't elaborate whether the first-person preference account of desires transfers to third-person reports, Heim [1992] assumes that this is the case without further mention.
- But Stalnaker's proposal contains an important commitment in the analysis of desires that Heim [1992] glosses over.
- The ascription of Stalnakerian desire requires also the ascription of a belief about the kind of possible worlds that are the relevant alternatives to the attitude holder.
- The attitude holder's preference of one world over another must be specified by a description that singles out the relevant proposition (i.e. the set of possible worlds that are desirable).
- This is not problematic for the first-person perspective (in particular for the cases which Stalnaker discusses) but the assumption that the ascription of a desire is also an ascription of a belief becomes problematic in third-person desire reports such as (1);
- The beliefs underlying Adrian's preferences are not reported nor can they be inferred from the report, in fact no doxastic state is reported with (1).
- What can be inferred from (1), however, is Adrian's disposition to act towards a certain goal described by the reporter.

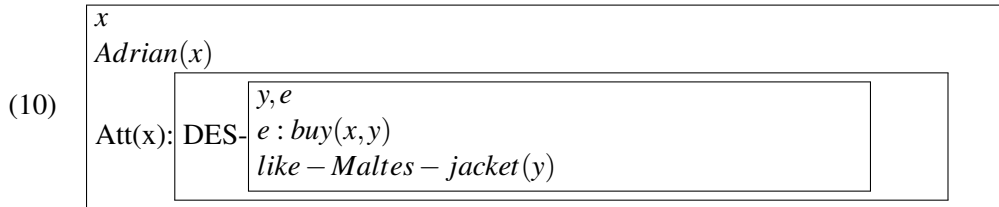
- (9)
- a. Adrian wants to buy a jacket like Malte's.
 - b. \Rightarrow Adrian knows/does not know Malte.
 - c. \Rightarrow Adrian believes/does not believe there are jackets like Malte's
 - d. \Rightarrow Adrian has/has not seen a jacket like Malte's.
 - e. \Rightarrow Adrian knows/does not know Adrian's jacket.
 - f. \Rightarrow Adrian has a specific/kind of jacket in mind.
 - g. \Rightarrow When there is an opportunity to do so, Adrian is very likely to buy a jacket like Malte's.

- Stalnakerian desires induce the need for a specification of *how* it is that Adrian believes he wants to buy a jacket, i.e. a specification of how it is that Adrian believes single out the relevant proposition he desires to be true.
- But in (1), Adrian's beliefs are not specified, instead Adrian's beliefs are specified in the reading-establishing scenarios.
- Thus, in order to separate readings from the meaning of (1), we need to conceptually separate beliefs and desires in third-person desire reports (without precluding that those beliefs and desires may be connected).
- According to the disposition analysis, third-person ascriptions of a *want* are third-person explanations of a certain behaviour without commitment that this explanation is also the first-person explanation (if there is any) based on preferences.

7 Parasitic Attitudes and their Hosts

- A central assumption to Kamp's theory of attitudinal states put forward with DRT is that attitudinal states are not monolithic but have a complex internal structure and that attitudes are not isolated but are closely interconnected with each other and exhibit a hierarchical dependency structure.
- E.g. if I see an object on the floor, I may form the belief that this object is a dollar note. On the basis of this belief, I may then form the desire to pick up the dollar note and on the basis of this desire form the intention to pick up the note, which in turn will guide my planning and execution of actions towards the satisfaction of my desire (cp. [Kamp et al., 2011, ch. 5]).
- Maier [2015b] argues that doxastic attitudes like belief are fundamental to non-doxastic attitudes: non-doxastic attitudes are 'parasitic' on their 'host' doxastic attitudes.

- From this perspective, I propose that the report (1) is underspecified with respect to the host belief state of the ascribed desire.
- The underspecification of the host belief state is indicated by the fact that we cannot infer the host belief state (the proposition underlying the Stalnakerian preference) from (1) but the action-feature of the parasitic desire, recall (9).
- Adopting Maier [2015b]’s proposal that the host belief state is represented by a main DRS in which parasitic attitudes are embedded, we could represent (1) as in (10).



8 Putting things together

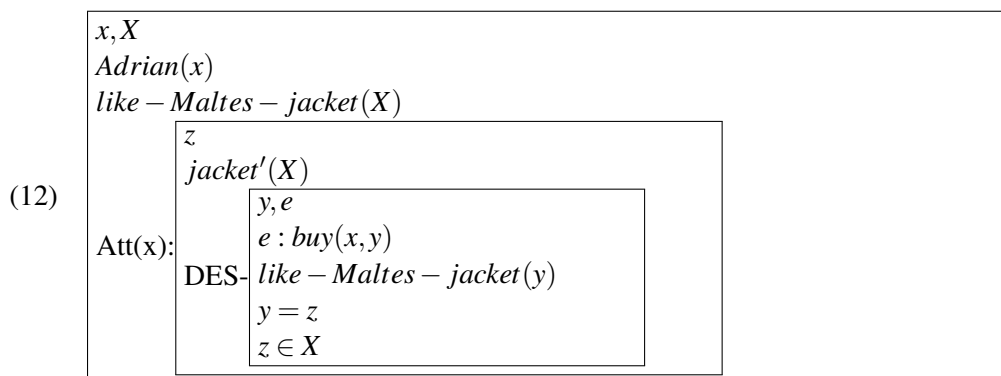
- The semantic representation in (10) is underspecified with respect to the doxastic host of the desire.
- As such, (10) may suffice for the execution of a certain kind of inferences for which only the third-person explanation of Adrian’s behaviour has to be taken into account.
- But we might also want to specify the desire in (10) for its doxastic host to make Adrian’s first person perspective explicit.
- E.g. if Adrian does not want to buy a jacket like Malte’s, telling him that what he wants to buy is a jacket like Malte’s may be valuable information to him.
- In such cases, it is required to know on the basis of which additional information the reporter ascribed the desire, i.e. what the reporter’s specification of the doxastic host for the reported desire looks like that turns the underspecified parasitic representation into a representation with a host specification.
- For beliefs to play the role of a doxastic host of an underspecified parasitic attitude, the parasitic attitude must be referentially connected with its doxastic host (this is the reverse direction of Maier [2015a]’s argument).
- For a given parasitic attitude such as (10), there are several ways to referentially connect the desire ascription in (10) with a doxastic host ascription.
- That is, depending on the referential connection between desire and beliefs, different doxastic host ascriptions are possible.
- E.g. for *R3*, it may be that the reporter’s description of the goal of the desire is referentially connected to the doxastic host via Adrian’s acquaintance with a set of jackets like Malte’s or with Adrian’s acquaintance with a property of jackets like Malte’s.
- Technically, the specification of the doxastic host is a ‘Quantifying-Out’ procedure that connects the discourse referents introduced with the parasitic attitude ascription to the ‘outer’ doxastic host ascription.
- Which discourse referents can (and should) be resolved to the doxastic host can be diagnosed with the kind of scenarios that are traditionally used to justify readings, which, from the point of view advanced here, are specifications of the doxastic host of the parasitic desire.
- In fact, given the discussion of *R3*, rephrasing scenarios do not only specify the doxastic host but they do so by identifying the locus of the Quantifying-Out that establishes the referential connection of desire and belief.

- Reconsider the scenario (11). The first part of the scenario specifies the doxastic host. The second part indicates the Quantifying-Out, i.e. it establishes a referential connection of the anaphoric discourse update with the previous description of the doxastic host, in this case that the jacket Adrian wants to buy is a jacket which is one of *those* like Malte’s jacket in the doxastic host.
- The specification of the doxastic host and the referential connection with (11) gives rise to the semantic representation in (12) (which represents one traditional R3 reading)

(11) Doxastic Host: Suppose a store sells some jackets that all look like Malte’s and that Adrian does not know anything about Malte.

Quantifying-Out: Assume further that Adrian wants one of those jackets and any of them is an option.

Report: Adrian wants to buy a jacket like Malte’s.



9 Outlook

- In a series of papers, Maier [2009, 2015b] has developed an account of the connection between reports and their scenarios based on the anaphor-like resolution of presuppositions projected by the report.
- Presuppositions-as-anaphora seem like natural candidates for the formalization of the procedure underlying the referential connection between parasite and host, although some additional machinery may be needed to deal with the Quantifying-Out of properties as in Schwager [2009] or intentional identity Pross [2014]).
- But it may also be that the presupposition-based approach can be derived from a more general principle concerning the role of anaphora in attitude reports.
- Reading-establishing scenarios necessarily require the use of anaphors to distinguish the stance of the reporter from that of the reportee (cp. also Brandom [1994])
- Cp. “wants to buy one of *those* and any of *them*”, “wants to buy *one such jacket*”, “wants to buy *it*”
- The anaphoric nature of desires explains the two appearances of the condition *like – Maltes – jacket* in (12).
- From an attitudinal point of view, the purpose of the anaphoric description of Adrian’s desire in reading-establishing scenarios is to link the non-doxastic role of *like – Maltes – jacket* to its doxastic role.
- The two roles of the descriptive part of (1) enables us to distinguish the communicative function of the under-specified (1) from the communicative function of its doxastically specified counterpart.
- One function focuses the information *that* it is the case that Adrian wants to buy a jacket like Malte’s, then highlighting the relation of Adrian’s desire with the interpreter’s own attitudes.
- The other function focuses *how* it is that Adrian wants to buy a jacket like Malte’s, then highlighting the anaphoric relation of the desire to other attitudes of Adrian.
- This dual nature of desire reports explains the confusing behaviour of traditional readings in that traditional readings rest on an unwarranted conflation of scenarios and the meaning of (1).

- To disentangle readings, context and meaning of (1) I proposed:
 - Conceptual separation of non-doxastic (non-contextual) and doxastic (contextual) aspects of the meaning of (1)
 - Reconstruction of the relation of non-doxastic (non-contextual) and doxastic (contextual) aspects of the meaning of (1) in terms of the anaphoric relationship between non-doxastic and doxastic attitudes.

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