



BELIEF CONTENT AND BELIEF STATE¹

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The paper is dedicated to the analysis of a contribution of the distinction between states and contents of beliefs to the explanation of changes of beliefs in some specific situations such as changed stakes or evidence. The plausible idea about beliefs is that an agent may have two different beliefs in the same proposition representing different relations to that proposition – belief states. Different accounts of states of beliefs were proposed. The claim critically observed in the paper is that a change of belief may be explained as a change of either proposition believed or state of belief. It is argued that explanations of changes of beliefs in terms of changes in their states are reducible to explanations in terms of changes in their propositional contents. In particular it is argued that cases where changing beliefs are expressed by sentences with so called essential indexicals, which are considered to be cases of changing belief states, but not propositions, may be described as rather instances of changing belief's propositional contents. There is also the account of belief as triadic relation between believer, believed propositions and mode of its presentation by believers. According to it belief change may be represented as a change of the mode of presentation which preserves propositional content of the belief. Against this account it is argued that modes of presentation of propositions either does not in fact contribute to semantic contents of corresponding beliefs or may be assimilated by their propositional contents. It seems plausible that to be relevant to the belief change the information is to be at least available to a competent reflexive agent of the belief, and this information then may be added to a propositional content of that belief after some reflection.

Key words: belief, proposition, state, semantic content, degree of belief, evidence, mode of presentation, direct reference, essential indexical.



1. The twofold conception of belief

Below I would like to consider one popular account of beliefs as relations between subjects and propositions – abstractions of independent on particular languages logical contents of sentences saying the same which are genuine bearers of truth and falsity. Due to this understanding beliefs and many other psychological attitudes (such as hopes, desires, promises etc.) are ordinarily called *propositional attitudes*.² Belief then is treated within this account as a twofold construction consisting from proposition it expresses and some state of belief in that proposition by the subject. Hence the belief change is seen as either the change of a proposition believed or the change of a state of belief.

Thus John Perry describes a situation in which he sees in the market the trail of sugar on the floor and comes to believe that some shopper has the sack of sugar torn;

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² Of course this is not the only, though most popular, account of beliefs: alternatively they are sometimes treated as relations between subjects and sentences or properties.



he begins to follow the trail to warn the shopper, but cannot catch her and in the end understands that the shopper is he himself. Then he changes his way of action [Perry, 1979: 1]. We might say that J. Perry changed his belief; but his initial belief (*that some shopper has a torn sugar sack*), and his final belief (*that I have a torn sugar sack* (1)) are both about J. Perry. They may be said to express the same proposition.³ So, what exactly had changed?

The indexical term «I» does not specify the subject of the belief expressed as (1). Uttered by another person it would refer to him, not to J. Perry. So, the belief content correlating with the proposition expressed by (1) looks to be equal to that: *the speaker of this sentence has a torn sugar sack*. But we understand that the belief refers to J. Perry and no one else: so, it will imply the proposition that J. Perry has a torn sugar sack. If J. Perry believes (1) he may be assigned the belief:

(2) I believe that I have a torn sugar sack.

Now if «I» within the scope of the verb «believe» is substituted for «J. Perry» we will get the sentence which does not express the belief in question without an additional supposition, like: «I am J. Perry».

There is a well-known and widely criticized solution of the problem suggested by G. Frege which claims that in contexts of propositional attitudes denoting expressions change their denotations, denoting what were in normal contexts their senses.⁴ Thus there must be some concept, individuating J. Perry, associated with the use of «I» in (2) such that second appearance of «I» in (2) denotes this concept, hence making that-clause of (2) to be about J. Perry, though not directly.

Many philosophers see this solution highly problematic by the variety of reasons. They include doubts that denoting terms are actually changing their references in contexts of propositional attitudes (why should they, after all?), and suspecting the very notion of sense, in particular of there being senses associated with indexicals (and if they are they are not guaranteed to be the same even for each use of the indexical by the same subject).

Another proposal rejects denotation shifts in contexts of propositional attitudes and claims that singular propositions, like that expressed by (1), consist of the very objects of correlating thoughts and ordinary propositional elements, i.e. predicate functions or open propositions (expressed as «that x is p ».)⁵ These are usually called *de re* beliefs (i.e. about the thing itself) [Perry, 1979: 10]. But this does not yet solve the problem. Perry gives an example: he is making shopping and the mess described in the previous example, and sees his own reflection in the mirror but thinks that this is the

³ Under certain notion of proposition, where proposition is composed by denotations rather than senses of the terms composing the sentence which expresses it.

⁴ The key source of the account is: [Frege, 1948].

⁵ This idea can be traced back to Russell's idea of proposition: [Russell, 1910], [Russell, 1912: ch. 5].



refection of the messy shopper. Then he can believe that: «He is making a mess». We can then ascribe J. Perry the belief that he believes of J. Perry that he is making a mess. That will be a *de re* belief but not the one held by the subject in the scenario [Perry, 1979: 11].

Yet another solution is that according to which propositions are entities which truth-values are relative to certain parameters, like times and agents. They are now treated as functions from times (and some other parameters) to truth-values.⁶ More precisely the proposition expressed in that-clause of (2) assigns the truth-value relative to the agent and the time of the utterance of (2). But the proposition *that I have a torn sugar sack* may be believed by an agent at certain time and be true of another (or the same) person at another time. Perry distinguishes between two types of contexts in this respect: the one of belief and another of evaluation, which need not be the same [Perry, 1979: 11].⁷ If I believe now that I have a torn sugar sack, and *now* is not the time when the sack is torn this believe would be false of the context of *now*, though may be true of the context of *then* (when the sack was torn). That J. Perry believed at some moment that he was making a mess at some other time does not explain his actions (that he began to seek the torn sack in his own cart).

According to Perry there may be different shoppers in the supermarket who believe each about herself «I am making a mess» (3), and begin looking for the torn sack in their carts. Perry says that the common element explaining the behavior of all these people is not what they believe, since there is no person (or time) which all these people would believe (3) to be true of. They are all in one belief *state* – the one which leads them to examine their carts (given other belief states they are expected to be in) [Perry, 1979: 18].

Perry suggests that belief states have something in common with personal dispositions to act in a certain way, i.e. to utter the sentence expressing the proposition believed. Thus the state of believe in proposition *that I am making a mess* is that of saying (3) sincerely and consciously. Anyone can believe that, and anyone can believe of J. Perry that he is making a mess; but only J. Perry may have that belief by being in that state [Perry, 1979: 19].

Perry calls such attitudes *beliefs with essential indexical*; for a behavior explained by ascribing such belief cannot be explained by the belief with the same propositional content where the indexical term is substituted by a term with more context-independent meaning [Perry, 1979: 5].⁸ Many beliefs with no explicit indexical may be considered as essentially indexical because they implicitly relate the main propositional content with some time or place, or alike introduced by the context. Thus believing that Moscow is the capital

⁶ See: [Perry, 1979: 13], [Kaplan, 1989].

⁷ The same distinction was made by D. Kaplan: [Kaplan, 1989].

⁸ Perry uses the notion of singular proposition which is supposed to be constituted by denotations of the terms used to express it, where some of the terms refer directly to objects in the world which thus are their denotations and constituents of a proposition.



of Russia I may be well understood as believing that Moscow is the capital of Russia now, where what time is now is determined by the context.⁹

In the following literature on propositional attitudes and belief attribution this epistemic constituent has got different names, such as *doxastic state*, *credence* or *degree of belief*.¹⁰ Some philosophers equate it with the probability ascribed to the proposition believed by an agent. Then a change in beliefs explaining some change in actions is described as certain update of the belief state in the light of new evidence: evidence-dependant changes of beliefs are considered rational, otherwise irrational [Ramsey, 1931; Jeffrey, 1983; Lewis, 1980].

There are common objections to this account of states of beliefs. Deciding how to act according to the reasons based on current beliefs an agent does not ordinarily apply exact probabilistic or analogous values to propositions. Our ordinary rational beliefs should not, further, satisfy the rule of the null-sum. Besides the evidence may be not the only motive for the belief update. Nevertheless, these arguments do not affect the very idea according to which there are cases where only a state of belief changes, leaving its propositional context untouched.

Of course there are good reasons to see beliefs as consisting of at least two elements – an epistemic attitude or state and a propositional content. In fact we can distinguish yet more such elements, since, say, the credence, and the degree of acceptance must not be the same state, and they both may differ from that of the amount of disposition to act according to the belief. And perhaps there are such changes in beliefs which may be characterized as changes in states. But I think that they all may be construed as changes in believed propositions. So, if I am right, the proposed explanation of cases like that of J. Perry above as changes of some belief states is reducible to the more familiar explanation in terms of changes in propositional contents of these beliefs.

2. Exploring some changes

Suppose the following case when the degree of probability assigned to the proposition is supposed to change. Let's take the proposition be that all swans are white; and an ornithologist S gets a new evidence (sees a black swan) which undermines his belief in proposition *that all swans are white*

⁹ Of course we may alternatively consider such propositions as more context independent by treating corresponding beliefs as being not about definite time, place or etc. Thus I may be thought believing that Moscow is the capital of Russia whatever the time.

¹⁰ Cr. for example: [Foley, 2009: 37–47]. He attaches to the belief state an additional feature: justification which consists of certain amount of evidence supporting the proposition believed. His definition of belief is: (i) S believes that p just in case S has a sufficiently high credence that p; (ii) It is rational for S's credence that p to be proportionate to the strength of S's evidence supporting that p; therefore, it is rational for S to believe that p just in case it is rational for S to have a credence that p above the threshold for belief.



(4). If S accepts the evidence the relevant modification he makes in his beliefs on its ground may be described in different ways. S may be said to quit believing (4), but there are also reasons to suppose that not any relevant counterevidence if accepted is sufficient for a subject to abandon the belief. It may just weaken the evidential support the belief has, and therefore may be considered as changing the personal degree, hence state of the belief, though not making the later vanish altogether. Meanwhile S may be said to still believe the same proposition (4), just in some weakened way.

But we may note that ordinarily new evidence affects the belief state when the change of degree of belief which it causes exceeds some threshold. Compare the case when S simply imagines the possibility of there being black swans. This may affect his belief in (4) by making its degree a bit lesser or, in other words, by making its state a bit less that of the belief; but S will be justified as before to say of himself that he believes that all swans are white. On the other hand if S gets and accepts some real evidence E he will most likely have to change his way of self-ascription of the proposition (4). S could say of himself, as before, that he believes that all swans are white, but as a rational reflexive agent he would understand that, say, «I am not so sure now that all swans are white» was better way of expressing his current attitude. The difference is very informal, but supposedly there is some amount of evidence which acceptance by the subject changes rather his attitude from that of believing to that of not believing the proposition than the state of the belief.¹¹ Nevertheless an acceptance of E by S can still preserve the state of his original belief, though by way of changing the propositional content: he would then better self-ascribe to himself the belief that, e.g., all but some swans are white.

What about essentially indexical beliefs? When J. Perry in Perry's scenario comes from the belief that some shopper has a torn sugar sack to the belief that he himself has a torn sugar sack he may be said to change the state of self-ascription from that of

(5) I believe that some shopper has a torn sugar sack

to that of (2). (5) may be understood in one of the two following modes called *de dicto* and *de re*. De dicto reading of (5) may be represented in a formalized form as

(6) I believe that $\exists x$ (shopper (x) and has_a_torn_sugar_sack (x)),
and its de re reading as

(7) $\exists x$ (shopper (x) and I believe that has_a_torn_sugar_sack (x)).

In the context where, as in the scenario, the speaker is the only shopper who has a torn sugar sack (5) may be about the same individual as (2). The later may also express at least de re thought if «I» before and after «belie-

¹¹ Of course any change in degree of evidence supporting the truth of the proposition from the point of view of the subject may be alternatively seen as changing the state of certain belief if we reject that there are thresholds of degrees below which states are not those of beliefs. But intuitively there are such thresholds.



ve» may refer to different things: e.g. when I (the speaker) believe that I (the bearer of some set of properties identifying myself as a person) have a torn sugar sack. But the reading corresponding to the most ordinary use of «I» is called *de se*: in it I say of myself and no one else that I have a torn sugar sack. This meaning cannot be expressed by

(8) $\exists x$ (x is the speaker and x believes that x has a torn sugar sack),

since «is the speaker» may not refer to the speaker of (8) only, and even if it does, (8) corresponds to «The speaker believes that he has a torn sugar sack» where the reference of «he» may be not borrowed from «the speaker».¹²

However formalized *de se* reading of (2) will differ from both (6) and (7). Unlike (6) the reference of the second appearance of «I» must not be bound within the scope of «believe»; and unlike (7) both appearances of «I» must refer to the same individual. The transition of self-ascription from (5) to (2) was provided by accepting the evidence that the shopper referred to in (5) is the speaker himself, hence the referent of «I» as used in (5). The speaker of (2) may then make the following inference: since I am the shopper I believe that I have a torn sugar sack. Now *that I am the shopper* seems to play the role of the presupposition of (2) as self-ascribed by the subject on the basis of (5) and certain evidence.

Does it change the content of J. Perry's belief (which happened to be about himself) that some shopper has a torn sugar sack? I think, yes. «Some shopper» in (5) refers to J. Perry in the described scenario; and so does «I» in (1) and (2). But even if we agree that it is directly referential, i.e. refer to the individual independently of its descriptive content, this does not mean that this is the only contribution it makes to the denotation of (5). It also contribute with some predicative content – «shopper (x)» – represented both in (6) and (7), but absent in (1) and (2); neither it is needed in the *de se* reading of the later. The transition from (5) to (2) changes the believed proposition at least by that it eliminates this bit of its predicative content by making it at best part of what is presupposed by believing in (1) instead of believing in what is self-ascribed in (5).

Now let's consider the guy who fell asleep in lethargy and woke up in 10 years (let's call him V). Unbeknownst of the years passed he woke up with the belief that he is 20 years old (the age when he fell asleep); so he may be and is disposed to say of himself «I am 20». According to Perry, since the state of the belief did not change, i.e. he continues to believe the same proposition (that V is 20) in the same way, the belief just becomes false [Perry, 1997]. But it is arguably so only if we are in position to assert that the proposition thus believed did not differ from the same proposition believed in by the same subject at the

¹² There are different ways of interpreting *de se* beliefs like (2): e.g., «I believe PRO has a torn sugar sack». But the later corresponds more neatly to «I believe to have a torn sugar sack», hence it is dubitable whether to say this is the same as to say in *de se* mode what (2) says.



moment of falling asleep 10 years ago. But there are good reasons to suppose that the very proposition has changed.

Suppose that V is explained the situation and asked: what exactly his age-ascribing belief was when he woke up? This would be the motive (for a normal reflexive person) to think about the unity of his own personality among other things: given that his belief after wakeup was that he was 20, he would have to specify the content of his belief either as referring to the person V was 10 years ago or the one he was at the moment of wakeup. Why? Because though the way of V's thinking about himself and even perhaps his corresponding feelings did not change since what they were 10 years ago, his body has changed, and so did the world around him. A lot of his beliefs about particular things may become false because these things have changed or disappeared. In fact we can treat each of these beliefs as ambiguous after the wake up as well, for it may refer either to the thing as it has been or to that thing (if only existing, otherwise to its modal counterpart) as it is. This whole situation may be called *the shift of the world relative to an agent*.

Is the presence of such shift is enough to make the belief in question ambiguous? I think, yes. Compare the V's story with the following one. Due to some scientific experiment the person X was destroyed and reassembled 10 years after from the same elements with the same personality, behavioral dispositions, attitudes, memory etc. The one appeared in 10 years is exactly the same as his destroyed precursor; even the body is qualitatively the same, let alone the links with the external world. But we would not hesitate in qualifying such person as rather an incarnation or replica than an extension of the one destroyed 10 years ago. An absence in the world for a considerable period of time looks sufficient reason to count the situation as consisting of two individuals rather than one. Lethargy does not look exactly like absence, but it reminds it in certain respects: first of all it presupposes the absence of a subjective will, consciousness, reflexivity, rational activity etc. And there is also a similarity between these situations in that they both produce shifts of worlds relative to agents – massive turning of beliefs into false ones (given the propositions believed are the same as before the destruction or lethargy).

I suppose that V's belief of himself that he is 20 is ambiguous after wakeup, i.e. it may be treated as the same state related to two different propositions one of which is constituted by V before and another by V after the lethargy, or a unity of both.¹³ Therefore V's case looks like that of the change of the belief's propositional content from some certain to an ambiguous one (at least unless it is specified according to some new evidence).

Now consider the following example: Hannah has a check that needs to be deposited at their bank, though there is no particular urgency in doing

¹³ The same will be true for the implicit indexical of time: the *now* of the belief would be ambiguous in the same way after the lethargy referring either to the time just before V's falling asleep or to the time right after the wakeup (or of the utterance).



this. It is late on a Friday afternoon, and the bank is likely to be crowded. Hannah thinks the bank is open on Saturdays, having made a recent stop at the bank when she remembers having read the bank's hours. So she decides to go Saturday. But eventually she recollects that if she does not deposit a check before Monday she will be late paying her mortgage. So Hannah decides to go Friday, just in case the bank isn't open Saturday [Reed: 12].¹⁴

What was changed in Hannah's belief? One explanation presupposes that it is the state, the degree of belief, given the believed proposition is the same. But the degree of a rational belief seems sensitive to the justification a subject has for it. Hannah's justification for thinking the bank is open on Saturday did not change; what did change are her practical stakes, which are not part of a justification. She looks having changed her mind in the case considered due to the higher practical stakes alone. Such situations are supposed to show that beliefs are interest-relative.¹⁵ If so, then the case might be treated as well as such that Hannah in fact ceased to hold the belief that the bank is open on Saturday when she considered how high stakes were. But it is just unlikely that rational beliefs of normal subjects may be just ceased to be held by a subject without any change in the totality of his evidence.¹⁶

Here is another example: Maria is taking part in a psychological study that measures how people assess risk. She is asked a question and then will have the opportunity to play two games simultaneously. In the first game, she is given a jellybean for a correct answer and a severe electrical shock for an incorrect answer. In the second game, she is given \$1000 for a correct answer and a gentle slap on the wrist for an incorrect answer. In both games, there is neither penalty nor reward for abstaining from answering. Maria is asked, "What was the name of Hannibal's brother?" She takes herself to remember, from a course she took several years earlier, that his name is *Hasdrubal*. She gives this answer in the second game, but she abstains from answering in the first game [Reed, 2010]. In this example it is yet harder to describe changes in the subject's behavior as caused by instantly increased and decreased degrees of the belief that «Hasdrubal» is the name of Hannibal's brother.

Alternatively we may suppose that both Hannah and Maria quit using their certain beliefs as reasons to act under the pressure of higher stakes. Then their beliefs did not change at all. Under this interpretation they behave as if they don't believe what they believe; but they didn't have enough time to forget their relevant beliefs, so they cannot be described as just not taking

¹⁴ I slightly modified an example.

¹⁵ See: [Fantl, McGrath, 2009; Stanley, 2005; Weatherson, 2011]. The preferred interpretation of the case is that the first decision, unlike the second one, is backed by Hannah's knowledge that the bank is open at Saturday. But it may be construed as well as presenting just some change in her belief.

¹⁶ Of course a person can change her relation to the same part of evidence so that it ceases to justify for her certain belief; but even if justification is treated subjectively, the very fact of such change of justifying force of some old evidence may count a new evidence contributing to an attitude.



these beliefs into account in making decisions how to act. These beliefs must be somehow consciously deactivated in such cases. Therefore the most likely interpretation of them is that the subjects still use their certain beliefs but with no motivational force. But in important sense to believe is to be disposed to act in a certain way in certain circumstances. If so, then a change in the way of action should presuppose some change in a relevant belief.

If there are in fact changes in beliefs in the cases described above, they do not look like true changes in degrees of these beliefs. Although justification in the cases remains the same the personal use of it changes. Hannah and Maria are not very attentive to the evidential support their beliefs have in the less risky cases, while they are more attentive to it in more risky ones. This seems to influence the ways of action but not the ways of belief ascription. We presume ascribing a belief that a subject is acting relative to that belief *under the same representation* of it linking it with a unique propositional content. But this may be just a stipulation. Thus Hannah is ascribed a belief in the same proposition through the course of her changing decisions: *that the bank is open on Saturday* (p). Meanwhile p is related by Hannah to the same evidence in different ways. At first Hannah behaves as if she has no doubts in p, but then she behaves as if p is very doubtful, though her reasons to doubt did not change.

What Hannah is actually considering when she decides to make a deposit right now is the combination of the proposition p with the evidence to accept it: *I remember having read the bank's hours* (e). Now the content Hannah uses in making a decision when stakes are high looks rather the result of the fusion of p with e: something close to *I remember having read that the bank is open on Saturday*. Recognizing that her personal recollection is not enough to avoid a costly mistake Hannah then rejects act according to that belief.¹⁷ But the belief thus rejected to be used as a current motive differs from the original one rather in content than in state.

But Perry's example is the one where new evidence contributes the belief change. The content (3) which changes the subject's behavior may be described as a result of a fusion of the original proposition – *the shopper is making a mess* – with the new evidence – *I am the shopper*. Since «the shopper» and «I» in ascriptions of these contents refer to the same individual, this may be thought to indicate that they provide the same propositional element to certain beliefs. But «the shopper» also expresses a predicate function "shopper" which is absent from the resulting proposition expressed in (3). So this is one reason to consider this proposition as different from that of the original belief, and the change as that in the beliefs' content. Another one is that the second belief has a presupposition different

¹⁷ This recognition may be thought as giving new evidence, hence changing the justification the belief has; but if so then all such cases should be rather considered inappropriately construed as not involving the change in justification. Anyway, this conceptual move will not affect the interpretation of certain cases as those of changing belief contents.



from that of the original belief. It presupposes that the subject is the shopper; the new presupposed content thus links two beliefs on the basis of new information, explicating the nature of the new belief as a result of the fusion of the old one with new evidence.

3. Propositions and characters

Perhaps a state of belief may contribute to its content in a way different from that of a believed proposition. The idea is known as two-dimensional account of semantic meaning. The most famous one is Kaplan's distinction between contents and characters. Kaplan defined contents as functions from possible worlds to extensions of expressions, and characters corresponding to linguistic rules as functions from contexts of expressions' use to their contents [Kaplan, 1989: 506].¹⁸ There are arguments based on the Kaplanian notion of meaning, aimed to show that beliefs' semantics depend beside their objects (commonly, though not unanimously, considered as propositions) on some non propositional information.

M. Richard [Richard, 1983] gives the example: There is an intelligent, rational, and competent English speaker A who both sees a woman B, across the street, in a phone booth, and is speaking to that very woman through a phone. He does not realize that the woman he is speaking to is the woman he sees. He perceives her to be in some danger. A waves at the woman through the window but says nothing into the phone. If A quizzed himself concerning what he believes, he might well say

(9) I believe that I can inform you of her danger via the telephone.

An indexical «you» would refer here to the woman being spoken to by phone, while «her» to the woman seen through the window. At the same time A would deny the truth of

(10) I believe that I can inform her of her danger via the telephone,

as uttered by himself. The embedded sentences in (9) and (10) differ only with respect to indexicals which are co-referential in the context. Therefore if indexicals are directly referential, as it is often supposed, the embedded sentences should express, relative to the context, the same proposition: *that A can inform B of her danger via telephone*. But (9) and (10) definitely diverge in truth value in that context [Richard, 1983: 439–440].

From Richard's point of view though A understands both sentences embedded in (9) and (10) and knows of each which proposition it expresses, since A doesn't know that his uses of «she» and «you» are co-referential, he can hardly be expected to know that the embedded sentences in (9) and (10) express the same proposition. So for him the distinction between two beliefs consists in the ways the propositions are believed: «A believes the proposition that B can be informed of her danger via the phone under the

¹⁸ Kaplan's notion of content is different from the one used above.



meaning of the embedded sentence of (9), but not under the meaning of the embedded sentence of (10) [Richard, 1983: 442]. Thus Richard construes belief as a triadic relation between a person, a sentential meaning (understood as a function from context to proposition), and a proposition; “to believe a proposition is to do so under a sentential meaning” [Richard, 1983: 429].

There may be objected that if indexicals are directly referential then if anyone is ascribed (9) as true she should be ascribed (10) as true too, whatever her own evaluation of both. But Richard claims that (9) is true in A’s context because A knows what proposition is expressed by the embedded sentence when he utters it, for «he knows the meaning of the sentence, he is perceiving the referents of the demonstratives therein, and may be said to know of each demonstrative that it denotes the thing perceived»; and since A would, sincerely and reflexively attest to the truth of (9), it seems that (9) is true. But (10) would be true only if A believed that there was someone in danger with whom he could converse via the phone, and «as the case is set up, there’s every reason to think that A does not have this belief. Hence, there’s every reason to think that (10) isn’t true» [Richard, 1983: 440].

Nevertheless if A actually knows what proposition is ascribed in (9) then he, as a rational reflexive agent, should know the same about the embedded sentence of (10) in the same context; and since the two propositions thus expressed are the same, he may be said to be in the relation of knowledge to that fact, though not knowing that he knows that. Then A’s denial of (10) in the situation considered would follow rather from his ignorance of the limits of his own knowledge, than from his ignorance of the fact that (9) and (10) express the same proposition. Being quite reflexive the person may be unable to apply enough reflection, e.g., to what he knows in the context because of the circumstances of the context. A does not have enough time to see what his organism perhaps already observes – that the woman he is talking is the one on the street.

We may accept that an expression used as an ascription of a belief bears information not only about the proposition believed but also about the manner it is believed, in particular that it is believed by way of accepting certain sentence and understanding its meaning. But whether this information is relevant to the ascription of the belief as such is not so clear. Suppose that someone articulates the belief that Barack Obama is the president of USA by saying that he (supported with the pointing to the picture of George Bush) is the president of USA. From the character of the sentence it is clear that the proposition believed must include as the referent for «he» the one whom the speaker is referring to. But what is this element in the situation considered? In one sense it is Barack Obama, for him the speaker meant uttering the sentence. But in another sense it is George Bush, for him the speaker actually pointed at through pointing at his picture.¹⁹ The speaker’s meaning is most likely *that Barack Obama is the president of USA* (11); if asked «Whom are you talking about?» the speaker

¹⁹ We skip here reflections upon the hypothesis that true referent of the indexical in such case is the representation itself, for the sake of brevity.



would most likely articulate Obama's name, not that of Bush. But this does not yet mean that the original utterance ascribes to a subject the belief in (11). Its' ascription rather looks ambiguous: either the belief about Obama or the similar belief about Bush²⁰. What is the personal disposition to articulate the belief may be irrelevant to what is thus believed.

Therefore, we may accept that truth values of (9) and (10) are in fact different, but reject that propositions expressed in their embedded sentences are the same; for if they were, we could not be stopped from ascribing to A the kind of knowledge that two propositions are the same, which would leave the difference in truth-values unexplained.

I suppose that the core of the problem is the supposed knowledge of indexicals' referents ascribed to the subject. A may be truly said to know of each of the indexicals he uses in (9) and (10) that it denotes the thing perceived by him. But that thing may not be the same relative to two different modes of perception – an individual B. What A can perceive, and know from perception, are not full-fledged individuals, but rather certain location-sensitive entities or sense-data-sensitive slices of individual objects – something close to Russellian objects of knowledge by acquaintance. It may be proposed, then, that at least in the scope of attitude operators (belief operator, in particular) objects of direct references of indexicals are not individuals as such, but sort of situated individuals, i.e. objects got from the coupling of an individual with certain spatio-temporal location related to a believer.

Thus «you» in (9) would refer to the result of a coupling of B with the location of being on the other side of the phone cable relative to A (which is on the context-centered side of it), and «her» would refer in both sentences to the result of a coupling of B with the location of being in the phone booth on the street seen from the window (located in the center of the context).²¹ Now, we have an explicit difference between propositions expressed in (9) and (10) correspondingly. But this may mean, *inter alia*, that at least some aspects of the way of holding the proposition by a believer, those which are relevant to the belief ascription, are rather to be reflected in the propositional content of the belief, than taken from some external source of information.

A would know what propositions he was ascribed in (9) and (10) correspondingly, but could not know that these were the same proposition if the propositions in question included only those parts of the individual B which A could certainly know from acquaintance in the situation described. In this situation the same proposition should not be truly ascribed to A, and (9) and

²⁰ Or even perhaps a belief with an ambiguous content.

²¹ These locations are not reducible to the conventional coordinates which could eliminate the difference in locations, because localization by conventional coordinates is part of information about the situation which an agent may not have; so he cannot use it. This proposal should not lead to the denial of the direct references of indexicals as such, though it may look like this; for the reference of the term may be still supposed to be provided without any aid from descriptive means.



(10) should not be seen as providing only the difference concerning manners in which the same proposition is held in each case.

Richard compares the position of A with that of a person X, who is in the same situation as A, but knows that the woman he sees is the woman to whom he is speaking. He supposes that we cannot explain the difference between positions of A and X in terms of propositions believed, since both of them believe the proposition that B can be informed of her danger via the phone. But X believes that proposition under the meaning of «I can inform her of her danger via the phone», and will attribute to B the property of *being a thing that can be informed of its danger via the phone* (P); meanwhile A, who doesn't believe the proposition under that meaning will not attribute this property to B [Richard, 1983: 442–443].

But again, A's self-ascription of (9) is true and his self-ascription of (10) is false in the same context *c* only if we infer a truth-value of the sentence from subjective evaluation or acceptance of it. (10) may be said to be true in *c* just because it expresses true proposition in *c*, and A in fact is attributing to B the property P in that context, though he does not know it, and even would deny it (in that very context). What makes X's self-ascription of (10) different from that of A according to this interpretation of the case is not its truth-value, but its justification, i.e. the presence of good reasons for X to assert and accept (10).

4. Beliefs and modes of presentation

Another way to distinguish the propositional content of a belief from its state is through the description of beliefs as triadic relations between believers, believed contents (propositions) and modes of presentation of propositions by believers.²² Therefore to ascribe a belief one need to explicate not only an agent and a propositional content but also a mode of presentation; and in talking about belief change one may then talk about some change of the mode of presentation which preserves propositional content of the belief.

It is said within the account that, e.g., two beliefs:

(12) Cicero is an excellent writer

and

(13) Tully is an excellent writer,

while both about Cicero, involve different modes of presentation or 'notions' of him. It is suggested then that beliefs can be classified in two ways: either by their truth-conditional content (Cicero, when he thinks that he is an excellent writer, thinks the same thing which we believe when we believe that Cicero is an excellent writer or that Tully is an excellent writer), or by the modes of presentation or notions involved: Cicero and John

²² See, in particular: [Schiffer, 1977], and [Crimmins, Perry, 1989].



both think the same thing when they think «I am an excellent writer» (14) [Récanati, Crimmins, 1995: 179].

Indeed, we may say that Cicero and John both are presenting some object in the same way by using an indexical «I» in their utterances of (14); their corresponding beliefs present different objects though, hence express different singular propositions: one is about Cicero, another about John. But to say that (12) and (13) express the same proposition we need to accept that «Cicero» and «Tully» denote the same individual. And this may be said only if we suppose that the propositional component contributed by a directly referential proper name is an individual object, i.e. some thing which may remain the same in different spatial and temporal locations, and through some other changes. But this does not prevent individuals to be complex things constituted by different parts (of different sorts). Are the one given to some believer S as Cicero and the one given to S as Tully things composed from the same parts? Not necessarily. And to be different they need not necessarily be sort of intensional things like individual concepts or senses.

If S does not know that Tully is Cicero he may identify Tully with young Cicero only and Cicero with a matured Cicero. Thus only the complex of those parts of Cicero which constitute matured Cicero would be referred to by S's normal use of «Cicero», while analogous use of «Tully» by S would contribute to propositions like (13) the complex of parts which constitute young Cicero. Since some of the properties of this two are different (e.g., young Cicero was not yet a famous orator) there will be parts of the one who is Cicero for S which are not parts of the one who is Tully for S, and vice a versa. Tully, for instance, is smaller, thinner, and lower than Cicero at any moment of his existence; so he may be truly be said to have some different body parameters in comparison with Cicero. And of course they are very different in what concerns their minds and social roles.

Therefore (12) uttered by S is true about Cicero only if *the one who is the bearer of a set of properties identifying Cicero for S*, is an excellent writer. And this one may be a unity of parts, though intersecting with, but not identical to *the bearer of a set of properties identifying Tully for S*. Now the replacement of «Cicero» for «Tully» in (12) will turn it into a false belief-ascription relative to S just because of the difference between propositional contents of (12) and (13) relative to S.

So if someone believes (13) about Cicero (i.e. using «Tully» with its common meaning) but does not know that Tully is Cicero, the contribution of his personal notion of Cicero may be represented as part of what is thus believed. The propositional content of such belief may be described as *that Cicero-Tully is an excellent writer*, where «Cicero-Tully» is the name of a unity of parts constituting the thing which is seen as Tully by the subject of the belief, and as a stage or phase of Cicero by the evaluator (the one who assigns the meaning). That's what believer's notions of objects seem to do ordinarily: restrict sets of parts from which the object may consist.



According to F. Recanati, who gives different interpretation of the contribution of personal notions to contents of beliefs, embedded clauses in beliefs' ascriptions express quasi-singular propositions which «are like singular propositions, except that to the normal constituents of a singular proposition are associated modes of presentation». Thus the constituents of such propositions are ordered pairs consisting of the normal constituent of the corresponding singular proposition and a mode of presentation of that constituent [Récanati, Crimmins, 1995: 179].

Therefore an embedded sentence in a belief report may be construed as expressing a quasi-singular proposition, to which the 'that'-clause refers. Substituting «Tully» for «Cicero», for example, would preserve the truth-conditions of the embedded sentence of «John believes that Cicero is an excellent writer» (15) which content can be represented as a singular proposition (*that Cicero is an excellent writer*), but affect the quasi-singular proposition by changing the mode of presentation which, together with Cicero, constitutes its first constituent. The content of (15) may be represented as: «B (John, <Cicero, 'Cicero'>, the property of being an excellent writer>» (16), – and that of «John believes that Tully is an excellent writer» as: "B (John, <Cicero, 'Tully'>, the property of being an excellent writer>) (17)" [Récanati, Crimmins, 1995: 180].

To preserve both: direct reference and semantic innocence, the thesis according to which if the sentence expresses certain proposition in one context (e.g. as an embedded clause of the belief report) it should express the same proposition in the other (e.g. when occurs as unembedded) – Recanati insists that sentences involving directly referential expressions in a predicative frame, express quasi-singular propositions also when uttered in isolation [Récanati, Crimmins, 1995: 179]. He introduces a distinction between the proposition expressed by an utterance and the utterance's complete semantic content – what it expresses in some broader sense, and claims that modes of presentation should be added to broad semantic contents of the utterances expressing beliefs. Since modes of presentation do not influence truth-conditions of beliefs corresponding components of quasi-singular propositions are truth-conditionally irrelevant. Their truth-conditions are genuinely singular [Récanati, Crimmins, 1995: 182].

This idea works with the same concept of singular propositions. Unlike what it declares – that modes of presentation are not parts of genuine propositional contents of beliefs, – it seems to me showing quite opposite. If 'Cicero' in (16) and 'Tully' in (17) refer to some notions of Cicero, hence sets of properties, both (16) and (17) may be read as saying that John believes that Cicero as Tully in one case and Cicero as Cicero in another is an excellent writer. But this looks the same as to say that John believes in one case that the thing which is the part of Cicero determined by Tully-features is an excellent writer, and in another case that the thing which is the part of Cicero determined by Cicero-features, is an excellent writer.



Modes of presentation look quite irrelevant to propositional contents when schematically depicted as in Crimmins' exposition [Récanati, Crimmins, 1995: 195, 199]. In it they don't appear as elements of any string of symbols describing the believed content. He follows Perry and Crimmins [Crimmins, Perry, 1989: 86] in counting the ascribed modes of presentation no part of the content of that-clause of a belief ascription; instead he considers the content of a that-clause to be a singular rather than quasi-singular proposition. But modes of presentation are thought in this account as unarticulated constituents of truth-conditional contents of belief ascriptions. Nevertheless thus depicted they look rather not contributing at all to semantic contents of corresponding beliefs; they may be thought as mere causes of occurrences of certain terms in utterances instead.²³

5. De re beliefs

There exist simple de re beliefs and ascriptions which seem to involve no modes of presentation at all. Answering this objection Recanati points that a belief ascription somehow changes the context of the sentence. For that argument he uses Quine's account of de re belief reports as ascriptions of triadic relations between the believer, the referent, and the property believed of the referent [Quine, 1956]. The content of (14) may be then represented as «B (John, Cicero, <x, the property of being an excellent writer>))». And the later may be then converted in «B (John, Cicero, <x, m>, the property of being an excellent writer>))», where m is the believer's mode of presentation, and then to «B (John, <Cicero, m_i>, <x, m_k>, the property of being an excellent writer>))», where m_i is the speaker's and m_k the believer's modes of presentation of Cicero. In de re cases then m_k may be vacuous [Récanati, Crimmins, 1995: 191].²⁴ To save semantic innocence he accepts that prefixing the sentence with «John believes that» changes the context: it becomes that of a belief ascription, and this affects the reference of 'that'-clause.²⁵

But we should not consider cases of belief ascription as necessarily changing contexts. Let's consider the situation when the sentence occurs in an utterance both as unembedded and as embedded in the belief report. If I say about Cicero that he is an excellent writer and then say that John believes that, there is good reason to think that both an occurrence of the sentence and the reference to its content by «that» are parts of the same context.²⁶ We may substitute «that» with (12), since the meaning of this term is anaphorically dependent on it. This way the sentence may occur twice in one utterance, one occurrence being an unembedded while another embedded. John may have no specific notion of Cicero except that he is an excellent writer, but (15) (as

²³ Otherwise we will be free to add them to a relevant propositional content which would contradict to the semantic innocence, since this requires that the proposition should be the same both in embedded and in unembedded occurrences of the same sentence.



part of the imagined complex utterance) will not therefore ascribe him the belief that the excellent writer is an excellent writer; rather his belief will be that an individual commonly known as Cicero is an excellent writer. But if his use of «Cicero» is directly referential it may make this occurrence of (15) still about Cicero as such. Simple *de re* belief then may be described as the one where a set of parts constituting the referent of a subjective term is unrestricted by any notion. Meanwhile my own use of the name may be associated with some notion. Now, it looks like we cannot explain the difference in the contents of these two occurrences of (12) by a difference in their contexts. It may be explained, though, if we permit a shift of the reference of «Cicero» in 'that'-clause from a restricted by my notion to an unrestricted one.²⁷

Crimmins thinks that in cases like «Hesperus was more highly regarded than Phosphorus» (18) we might portray speakers and hearers of attitude ascriptions as «conspiratorially pretending that there are two individuals where really there is just one».²⁸ But again we can treat (18) as rather expressing the thought about two distinct individual objects, though it may be saying what is thus expressed about the same thing. Perhaps the speaker of (18) knows that Hesperus is Phosphorus but describes the thought of some other people who does not know this fact that the thing which is Hesperus is

²⁴ Recanati introduces the distinction between two types of modes of presentation: the ascribed to the believer and the exercised by the speaker. The latter also is ordinarily supposed to be the mode which a hearer of the utterance must employ to understand it [Recanati, Crimmins, 1995: 199]. But I suppose that things are subtler in this respect: the speaker may mean some mode of presentation of an object which is neither her own nor the believer's, but rather something like a common sense idea of that object. This latter one is usually what is supposed to be employed by a hearer to understand the utterance. If we then identify the exercised mode of presentation with the speaker's in cases when this one does not coincide with the common one the speaker may be expected to provide in the utterance one of the two types of a mode of presentation different from the one ascribed to the believer. But we may identify as an exercised mode of presentation the common one if this is what the speaker is disposed to mean in relevant utterances. Sometimes, of course, the hearer is supposed to employ the speaker's mode of presentation strictly, and sometimes – the believer's one. So, we shouldn't harry reducing the hearer's mode of presentation to the speaker's, the believer's or the common's: there may be cases where the speaker knowing whom she is addressing means the hearer's mode of presentation, however distinct from her own, the believer's or the common, to be employed in understanding of the utterance. *m_i* in Recanati's representation may also stand for common sense rather than speaker's mode of presentation.

²⁵ He supposes that there is a general and a special theses of semantic innocence where the first one says that words behave in the normal way when they occur in contexts of attitude ascription, and the latter one – 'Sentential Innocence' – says that the content of the sentence once embedded is necessarily the same as that of the sentence unembedded. He rejects the latter for it does not make room for context-sensitivity [Recanati, Crimmins, 1995: 189].

²⁶ If the time of the process of the utterance made so much difference then we might not even say that the context remains the same for any real utterance, since it took some time to be pronounced.

²⁷ Of course the conjunction of (12) and (15) is not equivalent to (12) plus «an John believes that», since in the second case ordinarily what the speaker associates with (12) is ascribed to John as his belief; meanwhile in the first case the speaker may not pretend to ascribe John his own belief if he suspects that their ideas of Cicero are different.

²⁸ [Recanati, Crimmins, 1995: 207].



in such and such relation to the thing which is Phosphorus. In this case we may rephrase (18) as: «There is a thing of which some people think that it is two things, one is Hesperus, and another Phosphorus, and for these people Hesperus was more highly regarded than Phosphorus». But we can notice that in this presentation (18) is explicitly about three things two of which are composed from some parts of the third (the one referred to by the speaker from his own point of view or under his own notion unlike those of «Hesperus» or «Phosphorus»). Hesperus is after all that part of Venus which is seen from some Earthly location at evening, and Phosphorus is another part of that thing which is seen from the same location at morning.

6. Conclusion

So, even if we take Kaplanian two-dimensional semantics as basic for an analysis of beliefs, and distinguish strictly, as it prescribes, believed propositions from characters of beliefs, this will not prove that there are changes of beliefs which cannot be explained as changes in their propositional contents. It seems plausible that to be relevant to the belief change the information is to be at least available to a competent reflexive subject of the belief, and this information then may be added to a propositional content of a normal belief after the reflection.

Consider the following case: Basil says that

(19) Peter believes that Cicero is better writer than Tully.

Treating (19) as having a two-dimensional semantic content, part of which is the proposition expressed, when another part informs about subjective modes of presentation of the objects referred to directly by certain terms, we should agree that it expresses the proposition that Peter believes that Cicero is better writer than himself. As an ascription of rational belief (19) should be thought as somehow informing the hearer about Peter's point of view treating Cicero and Tully as different persons.

Now suppose that Peter himself articulates his belief and says:

(20) I believe that Cicero is better writer than Tully.

(20) will express the same proposition as (19) given the presumption of direct references of proper names and indexicals and a two-dimensionality. But suppose further that Basil and Peter both share the same notion of singular proposition and can apply it to the case illustrated by (19) and (20). Then we might rephrase (19) as

(19') Peter believes the proposition that Cicero is better writer than himself.

And if (20) expresses the proposition that Peter believes that Cicero is better writer than himself (19') should also be an adequate paraphrase for (20). But this is of course wrong description of what Peter could truly ascribe to himself; for to do this he had to be informed of and accept that Cicero and Tully are the same person, which is currently not the case for him. Sin-



ce (19') may be inferred from what is supposed to be Peter's current belief articulated in (20) and (19) it is tempting to prescribe the content of (19') as the propositional content of (20). But it seems to me that the failure of ascription of this content from the first person shows that we better not confuse the inferred content of the belief with its propositional content.

Of course we should not add «that Cicero and Tully are different persons» to the propositional content of (20), for this is rather what (20) presupposes about Peter's beliefs as rational. But we can rephrase (20) as «I believe that Cicero-not-Tully is better writer than Tully-not-Cicero», where two names refer to those parts of Cicero which exclude, correspondingly, features associated by Peter with his normal use of «Tully» and those associated with his normal use of «Cicero». Without this, I think, we cannot explain why, saying truly what (20) says, Peter cannot say truly what (19') says.

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