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INTENTIONAL IDENTITY AND PROPOSITIONAL ATTITUDES *DE DICTO*

We have the phenomenon of intentional identity when two or more propositional attitudes have a shared objectual ‘focus’ – when the same (real or imaginary) object is involved in two or more attitudes.

Intersubjective Intentional Identity

Hob thinks a witch has blighted Bob's mare, and Nob wonders whether she (the same witch) killed Cob's sow.

Geach, 1967. Intentional Identity

Intrasubjective Intentional Identity

Grandma thinks there’s a snake in the barn, and she wants to shoot it.

Edelberg 2006. Intrasubjective Intentional Identity

The last sentence can be shortened to:

Grandma wants to shoot the snake in the barn.

If ϕ presupposes ψ then A wants that ϕ presupposes A believes that ψ. (Karttunen, Heim at al.)

So, all instances of A wants the F (to be) G involve a combination of belief and desire with a shared objectual focus, hence the intrasubjective intentional identity (Ramachandran, Schoubye at al.)

(*) Grandma wants to shoot the snake in the barn.

Sentences involving intentional identity are problematic in that they cannot be captured by standard means. For instance,

(∃x)(x is a snake in the barn and G. wants x shot)
G. wants (∃x)(x is a s. i. t. b. and x is shot)
G. believes (∃x)(x is a s. i. t. b.), and wants x shot

are all inappropriate analyses of (*).

In a series of papers*, Edelberg elaborates a semantics supposed to be able to solve the problem.

*

A New Puzzle About Intentional Identity, 1986,
A Perspectivalist Semantics for the Attitudes, 1995,
Intrasubjective Intentional Identity, 2006.

The aim of the presentation is to show that Edelberg's solution, being quite plausible with respect to a certain type of cases, fails to work with respect to other types.

I am going 1) to expose the most relevant features of Edelberg's semantics, 2) to provide a counter-example for Edelberg.

Edelberg uses a formal language L_1. A model for L_1 is a structure <I, θ, D, β, O, ≈, v>, where I is a set of indices, θ is a set of theories, D is a family of domains over I, O is a set of objects, v is an interpretation of individual constants, individual variables, and predicate letters. (β and ≈ are characterized below.)

Here is an example of a model for a language containing individual constants p and d.

<table>
<tr><th rowspan="2">I</th><th rowspan="2">θ</th><th rowspan="2">D</th><th colspan="2">O</th><th rowspan="4">$v(p) = o_p$
$v(d) = o_d$
$v(B)(i) = \{d_1, d_2\}$
$v(B)(j) = \{d_3\}$</th></tr>
<tr><th>o_p</th><th>o_d</th></tr>
<tr><td>i</td><td rowspan="2">T</td><td>d_1, d_2</td><td>d_1</td><td>d_2</td></tr>
<tr><td>j</td><td>d_3, d_4</td><td>d_3</td><td>d_4</td></tr>
</table>

Let p stand for Pushkin, d for Dostoevsky, B for the property of being bald. Then:

- Pushkin was bald both at i and j, because v(p)(i) is in v(B)(i), and v(p)(j) is in v(B)(j),
- Dostoevsky was bald at j but not at i, because v(d)(j) is in v(B)(j) but v(d)(i) is not in v(B)(i),
- in T, Pushkin was definitely bald, and Dostoevsky might have been bald.

I	θ	D	O		$v(p) = o_p$ $v(d) = o_d$ $v(B)(i) = \{d_1, d_2\}$ $v(B)(j) = \{d_3\}$
			o_p	o_d	
i	T	d_1, d_2	d_1	d_2	
j		d_3, d_4	d_3	d_4	

The notion of truth in a theory

1) Φ is true in T iff Φ is true at each index in T.
2) Φ is false in T iff Φ is false at each index in T.
3) Otherwise Φ is undefined in T.

With respect to the model in question,
- (p/x)Bx is true in T,
- (d/x)Bx is undefined in T.

I	**θ**	**D**	**O**		**$v(p) = o_p$** **$v(d) = o_d$** **$v(B)(i) = \{d_1, d_2\}$** **$v(B)(j) = \{d_3\}$**
			o_p	**o_d**	
i	**T**	**d_1, d_2**	**d_1**	**d_2**	
j		**d_3, d_4**	**d_3**	**d_4**	

A case of intersubjective intentional identity

"Smith died of drowning. Detectives Arsky and Barsky jointly conclude that Smith was murdered by drowning, and that this explains his current condition. Neither detective has anyone in mind as a suspect, but Barsky thinks that Smith's murderer is still in Chicago, where the body was found. But Smith was not murdered, he drowned by accident." *Edelberg 1995, 316-7.*

With respect to this case, (1) has a true reading:

(1) Arsky thinks someone murdered Smith, and Barsky thinks he is still is in Chicago.

(1) Arsky thinks someone murdered Smith, and Barsky thinks he is still is in Chicago.

Edelberg formalizes (1) in L_1 and evaluates it in the 'home' theory of an appropriate model. To see how he does that, we will need some technicalities.

Quantifiers of L_1

The feature of L_1 relevant for us is that it contains quantifiers of two types:

- up quantifiers of the form $(\exists{\uparrow}x)$,
- down quantifiers of the form $(\exists{\downarrow}x)$.

An up quantifier ranges over O (the set of objects of the model at hand). A down quantifier ranges over the set of objects defined at the index of evaluation.

<u>Semantic closes for atomic sentences and quantifiers</u>

1) M, i ╞ Px iff v(x) is defined at i,
and v(x)(i) is in v(P)(i).

2) M, i ╞ (∃↑x)Φ iff for some o in O,
M[o/x], i ╞ Φ.

3) M, i ╞ (∃↓x)Φ iff for some o in O such that o is defined at i, M[o/x], i ╞ Φ.

M[o/x] differs from M at most in that M[o/x] assigns o to x.

The semantic close for belief sentences (adapted to the case at hand)

$M, i \models BEL_y Px$
iff for some doxastic variant M' of M for v(y)(i) and Px,
$M', \beta(v(y)(i)) \models Px$
(Px is true in the theory v(y) entertains at i).

M' is a doxastic variant of M for v(y)(i) and Px if
M' = M[o/x] where o is such that:

- $o \approx v(x)$,
- o is defined at every index in $\beta(v(y)(i))$.

Let L1 contain constants a and b for Arsky and Barsky respectively, and unary predicates S (is Smith's murderer) and C (is in Chicago).
In the model M represented below, $\mathbf{T_h}$ is the 'home theory', at which we will evaluate (1), $\mathbf{T_a}$ is Arsky's theory, $\mathbf{T_b}$ is Barsky's theory.
Subscripts by 'o' indicate relevant features of objects.

<table>
<tr><th rowspan="2">I</th><th rowspan="2">θ</th><th rowspan="2">D_i</th><th colspan="4">O</th><th rowspan="5">$v(a) = o_{ha}$
$v(b) = o_{hb}$
$\beta(d_1) = T_a$
$\beta(d_2) = T_b$
$v(S)(i_a) = \{d_3\}$
$v(C)(i_b) = \{d_4\}$
$o_{aS} \approx o_{bC}$</th></tr>
<tr><th>o_{ha}</th><th>o_{hb}</th><th>o_{aS}</th><th>o_{bC}</th></tr>
<tr><td>i_h</td><td>T_h</td><td>d_1, d_2</td><td>d_1</td><td>d_2</td><td>-</td><td>-</td></tr>
<tr><td>i_a</td><td>T_a</td><td>d_3</td><td>-</td><td>-</td><td>d_3</td><td>-</td></tr>
<tr><td>i_b</td><td>T_b</td><td>d_4</td><td>-</td><td>-</td><td>-</td><td>d_4</td></tr>
</table>

Edelberg formalizes (1) as (2):

(2) **$(\exists\uparrow x)(BEL_a Sx \;\&\; BEL_b Cx)$**

Let us show that (2) is true in T_h (at i_h) of M.

Note. I am using a slightly simplified notation. Strictly speaking, (2) should look like this: $(\exists\uparrow x)[(a/y)BEL_y Sx \;\&\; (b/z)BEL_z Cx]$

I	θ	D_i	O				
			o_{ha}	o_{hb}	o_{aS}	o_{bC}	
i_h	T_h	d_1, d_2	d_1	d_2	-	-	
i_a	T_a	d_3	-	-	d_3	-	
i_b	T_b	d_4	-	-	-	d_4	

$v(a) = o_{ha}$
$v(b) = o_{hb}$
$\beta(d_1) = T_a$
$\beta(d_2) = T_b$
$v(S)(i_a) = \{d_3\}$
$v(C)(i_b) = \{d_4\}$
$o_{aS} \approx o_{bC}$

$M, i_h \models (\exists{\uparrow}x)(BEL_a Sx \ \&\ BEL_b Cx)$ if
$M[o_{aS}/x], i_h \models BEL_a Sx \ \&\ BEL_b Cx$ iff
$M[o_{aS}/x], i_h \models BEL_a Sx$ and $M[o_{aS}/x], i_h \models BEL_b Cx$ if
$M[o_{aS}/x], i_a \models Sx$ and $M[o_{bC}/x], i_b \models Cx$…

A comment on the last move will be in order.

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<tr><td>i_b</td><td>T_b</td><td>d_4</td><td>-</td><td>-</td><td>-</td><td>d_4</td></tr>
</table>

The move from $M[o_{aS}/x], i_h \models BEL_a Sx$ to $M[o_{aS}/x], i_a \models Sx$

is enabled by the fact that $M[o_{aS}/x]$ is a doxastic variant of itself for d_1 and Sx, for $o_{aS} \approx o_{aS}$, and o_{aS} is defined at the only index in T_a.

I	θ	D_i	O				
			o_{ha}	o_{hb}	o_{aS}	o_{bC}	$v(a) = o_{ha}$ $v(b) = o_{hb}$ $\beta(d_1) = T_a$ $\beta(d_2) = T_b$ $v(S)(i_a) = \{d_3\}$ $v(C)(i_b) = \{d_4\}$ $o_{aS} \approx o_{bC}$
i_h	T_h	d_1, d_2	d_1	d_2	-	-	
i_a	T_a	d_3	-	-	d_3	-	
i_b	T_b	d_4	-	-	-	d_4	

The move from $M[o_{aS}/x], i_h \models BEL_b Cx$ to $M[o_{bC}/x], i_b \models Cx$

is enabled by the fact that $M[o_{bC}/x]$ is a doxastic variant of $M[o_{aS}/x]$ for d_2 and Cx, for $o_{aS} \approx o_{bC}$, and o_{bC} is defined at the only index in T_b.

I	**θ**	**D_i**	**O**				$v(a) = o_{ha}$
			o_{ha}	**o_{hb}**	**o_{aS}**	**o_{bC}**	$v(b) = o_{hb}$ $\beta(d_1) = T_a$
i_h	**T_h**	**d_1, d_2**	**d_1**	**d_2**	**-**	**-**	$\beta(d_2) = T_b$
i_a	**T_a**	**d_3**	**-**	**-**	**d_3**	**-**	$v(S)(i_a) = \{d_3\}$ $v(C)(i_b) = \{d_4\}$
i_b	**T_b**	**d_4**	**-**	**-**	**-**	**d_4**	$o_{aS} \approx o_{bC}$

$M, i_h \models (\exists{\uparrow}x)(BEL_a Sx \ \& \ BEL_b Cx)$ if
$M[o_{aS}/x], i_h \models BEL_a Sx \ \& \ BEL_b Cx$ iff
$M[o_{aS}/x], i_h \models BEL_a Sx$ and $M[o_{aS}/x], i_h \models BEL_b Cx$ if
$M[o_{aS}/x], i_a \models Sx$ and $M[o_{bC}/x], i_b \models Cx$ iff
d_3 is in $v(S)(i_a)$ and d_4 is in $v(C)(i_b)$. Q.E.D.

I	**θ**	**D_i**	**O**				
			o_{ha}	**o_{hb}**	**o_{aS}**	**o_{bC}**	
i_h	**T_h**	**d_1, d_2**	**d_1**	**d_2**	**-**	**-**	
i_a	**T_a**	**d_3**	**-**	**-**	**d_3**	**-**	
i_b	**T_b**	**d_4**	**-**	**-**	**-**	**d_4**	

$v(a) = o_{ha}$
$v(b) = o_{hb}$
$\beta(d_1) = T_a$
$\beta(d_2) = T_b$
$v(S)(i_a) = \{d_3\}$
$v(C)(i_b) = \{d_4\}$
$o_{aS} \approx o_{bC}$

<u>A note.</u> It is easy to see that (3) is not true in T_h:

(3) $(\exists{\downarrow}x)(BEL_a Sx \ \& \ BEL_b Cx)$.

This reflects the fact that, in the case under consideration, ‘neither detective has anyone in mind as a suspect’.

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</table>

So far so good…

Edelberg's semantics gives the welcome results with respect to the case under consideration.

More sophisticated versions of this semantics provide solutions further puzzles about intentional identity.

A slight modification of this semantics allows us to accommodate analogous cases of intrasubjective intentional identity.

1) Add to L_1 an operator W corresponding to ‘want(s)’ in natural language.
2) Add to models for L_1 a partial function γ that assigns to individuals-at-indices theories representing the desired states of the world.
3) Define the truth conditions for $W_x\Phi$ in a way analogous to $BEL_x\Phi$ using γ instead of β.
Now we can formalize (4) and get welcome truth conditions for (4) in appropriate models.

(4) Grandma thinks there’s a snake in the barn, and she wants to shoot it.

A counterexample for Elelberg. Suppose, Arsky

1) believes that someone murdered Smith,
2) distinguishes two individuals o_{a1} and o_{a2},
3) thinks that either o_{a1} alone or o_{a2} alone murdered Smith.

The model M below represents this scenario.

I	θ	D_i	O			
			o_{ha}	o_{a1}	o_{a2}	
i_h	T_h	d_1	d_1	-	-	
i	T_a	d_2, d_3	-	d_2	d_3	
j		d_4, d_5	-	d_4	d_5	

$v(a) = o_{ha}$
$\beta(d_1) = T_a$
$v(S)(i) = \{d_2\}$
$v(S)(j) = \{d_5\}$

In this case, (4) comes out to be false in the home theory of M:

(4) $(\exists\uparrow x)BEL_aSx$

<table>
<tr><th rowspan="2">I</th><th rowspan="2">θ</th><th rowspan="2">D_i</th><th colspan="3">O</th><td rowspan="5">$v(a) = o_{ha}$
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<tr><td>i</td><td rowspan="2">T_a</td><td>d_2, d_3</td><td>-</td><td>d_2</td><td>d_3</td></tr>
<tr><td>j</td><td>d_4, d_5</td><td>-</td><td>d_4</td><td>d_5</td></tr>
</table>

$M, i_h \models (\exists\uparrow x)BEL_a Sx$ iff
$M[o/x], i_h \models BEL_a Sx$ for some o in O iff
$M[o'/x], T_a \models Sx$ for some o' such that <u>o' is defined both at i and j</u> and $o' \approx o$.
Because of the underlined condition, o' might be either o_{a1} or o_{a2}.

<table>
<tr><td rowspan="2">I</td><td rowspan="2">θ</td><td rowspan="2">D_i</td><td colspan="3">O</td><td rowspan="5">$v(a) = o_{ha}$
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</table>

$M[o'/x], T_a \models Sx$ for some o' such that o' is defined both at i and j and $o' \approx o$.

1) Suppose $o' = o_{a1}$.
$M[o_{a1}/x], T_a \not\models Sx$, because $M[o_{a1}/x], j \not\models Sx$.
2) Suppose $o' = o_{a2}$.
$M[o_{a2}/x], T_a \not\models Sx$, because $M[o_{a2}/x], i \not\models Sx$

I	**θ**	$\mathbf{D_i}$	**O**		
			$\mathbf{o_{ha}}$	$\mathbf{o_{a1}}$	$\mathbf{o_{a2}}$
$\mathbf{i_h}$	$\mathbf{T_h}$	$\mathbf{d_1}$	$\mathbf{d_1}$	-	-
i	$\mathbf{T_a}$	$\mathbf{d_2, d_3}$	-	$\mathbf{d_2}$	$\mathbf{d_3}$
j		$\mathbf{d_4, d_5}$	-	$\mathbf{d_4}$	$\mathbf{d_5}$

$\mathbf{v(a) = o_{ha}}$
$\mathbf{\beta(d_1) = T_a}$
$\mathbf{v(S)(i) = \{d_2\}}$
$\mathbf{v(S)(j) = \{d_5\}}$

In both cases, $(\exists\uparrow x)BEL_aSx$ is false in T_h.

But note that $(\exists\downarrow x)Sx$ is true in T_a, which reflects the fact that Arsky thinks someone murdered Smith.

I	θ	D_i	O		
			o_{ha}	o_{a1}	o_{a2}
i_h	T_h	d_1	d_1	-	-
i	T_a	d_2, d_3	-	d_2	d_3
j		d_4, d_5	-	d_4	d_5

$v(a) = o_{ha}$

$\beta(d_1) = T_a$

$v(S)(i) = \{d_2\}$

$v(S)(j) = \{d_5\}$

(1) Arsky thinks someone murdered Smith, and Barsky thinks he is still is in Chicago.

(2) $(\exists{\uparrow}x)(BEL_a Sx \ \& \ BEL_b Cx)$

Adding to the model Barsky's theory (and the relevant counterpart relations), we can get a model falsifying (2) with respect to the home theory, whereas (1) remains intuitively true.

The moral: Edelberg's approach fails to work in cases where the relevant theory allows distinct possibilities with regard to the identity of the relevant object.

A qualification. I do not not say that truth conditions of (1) cannot be represented in a semantic system like the one proposed by Edelberg.

Let $COMP_a\Phi$ stand for 'it is doxastically compatible with a's belief system that Φ'. Then $COMP_a\Phi$ is true at i of M iff Φ is true at some index of a relevant variant of M in the theory a entertains at i.

Using COMP, we can formalize (1) as (5):

$$(5)\ [BEL_a(\exists{\downarrow}x)Sx]\ \&\ [BEL_b(\exists{\downarrow}x)(Sx\&Cx)]\ \&$$
$$\&\ (\forall{\uparrow}x)(COMP_aSx \leftrightarrow COMP_bCx)$$

(1) Arsky thinks someone murdered Smith, and Barsky thinks he is still is in Chicago.

(5) $[BEL_a(\exists{\downarrow}x)Sx]$ & $[BEL_b(\exists{\downarrow}x)(Sx\&Cx)]$ &
& $(\forall{\uparrow}x)(COMP_aSx \leftrightarrow COMP_bCx)$

An obvious problem with (5) is that its composition grossly differs from that of (1).

<u>The moral qualified</u>. Edelberg's semantics does not provide a compositionally adequate analysis of (1) for cases where the relevant theory allows distinct possibilities with regard to the identity of the relevant object.

Thank you very much for your attention!

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