

# The Logic of Belief

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## Applying my definition of belief to Logic

Review my definition at

<http://dennisdarland.com/philosophy/naming.pdf>

(I hate 2 versions!)

## Application of Logic - Consistency

We've seen that people may have inconsistent beliefs in

Tom **believes** denounced(Cicero,Cateline) at t and Tom **believes** not denounced(Cicero,Cateline) at t

Because

**Belief\_r**(Tom,t,'denounced','Cicero','Cateline') and **Belief\_r**(Tom,t,~denounced,'Tully','Cateline')

And **Cicero = Tully**

But not

**Belief\_r**(Tom,t,'=', 'Cicero', 'Tully')

Another person who knows **Cicero = Tully** can see Tom has inconsistent beliefs but Tom cannot.

We may define **Assert** – R(a,b,c) as **Belief\_r**(I,now,R,a,b,c)

Then for Tom

**Assert** – ‘denounced’(‘Cicero’,’Cateline’)

But not

**Assert** – ‘denounced’(‘Tully’,’Cateline’)

## Application of Logic - Inference

For Tom, from

**Assert** – R(a,b,c) or **Assert** – T(a,b,c)

It doesn’t follow

**Assert** (R(a,b,c) or T(a,b,c))

But if it is pointed out to him or he notices it – he **can make the conclusion**.

Also

He may

**Assert** – (R(a,b,c) or T(a,b,c)) without either

**Assert** – R(a,b,c)

Or

**Assert** – T(a,b,c)

## How we reason

We **reason** with **symbols** not the actual objects, so we may have **inconsistent** beliefs about the world without being able to realize it. But we can be **consistent** in our **reasoning** in **symbols**, though it may always be incomplete and wrong in some cases. Tom would necessarily make **false** assertions:

**Assert** – ‘not denounces’(‘Tully’,’Cateline’)

But not **inconsistent** ones.

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