

Anselm's Logic of Agency

Sara L. Uckelman

Institute for Logic, Language, and Computation
University of Amsterdam
suckelma@illc.uva.nl

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Course of the talk

- ▶ The theory.

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- ▶ Philosophical and theological motivations.

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- ▶ Types of agency.
- ▶ The agentive Square of Opposition.
- ▶ Modes of agency.
- ▶ A formalization of the theory in modal logic.

Introductory remarks

- ▶ Fragmentary notes compiled after Anselm's death.
- ▶ Notes on doing and willing believed to have been composed while Anselm was Archbishop of Canterbury.
- ▶ Theory in a nutshell:

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- ▶ Theory in a nutshell:

Teacher: We commonly use the verb 'to do' in place of all other verbs, regardless of the signification of these other verbs and regardless of whether they are finite or infinite. In fact, 'to do' may even stand for 'not to do'. If you think about it carefully, you will see that when we ask about someone 'What (how) is he doing?' here 'doing' stands for any verb that can be given in answer.

Philosophical motivations

- ▶ Questions of logic vs. questions of grammar.
- ▶ Proper usage vs. *usus loquendi*.
- ▶ We want our logical account to provide an explanation for the grammatical account.

Theological motivations (1)

Indeed, the Lord Himself in the Gospel uses facere and agere. . . in place of every other verb when He says, “Whoever does evil hates the light” and “Whoever does the truth comes to the light” (John 3:20-21). . . Whoever sits or stands where or when he ought not, does evil; and whoever is not present, does not sit, or does not stand where or when he should also does evil. . . Likewise, he does the truth who is present, is sitting, or is standing where and when he ought, and is not present, is not sitting, or is not standing where and when he ought not. In this way the Lord reduces every verb, whether positive or negative, to a form of ‘to do’.

Theological motivations (2)

The Lord wishes to convey that 'to do' may be used not only in respect of that which is properly asserted to constitute 'doing' but also in respect of all verbs. . . The ordinary use of language also has this feature, namely, it treats as 'doing' both undergoing and many other things which are not really cases of doing.

Theological motivations (2)

The Lord wishes to convey that 'to do' may be used not only in respect of that which is properly asserted to constitute 'doing' but also in respect of all verbs. . . The ordinary use of language also has this feature, namely, it treats as 'doing' both undergoing and many other things which are not really cases of doing.

Theological usage and *usus loquendi* coincide.

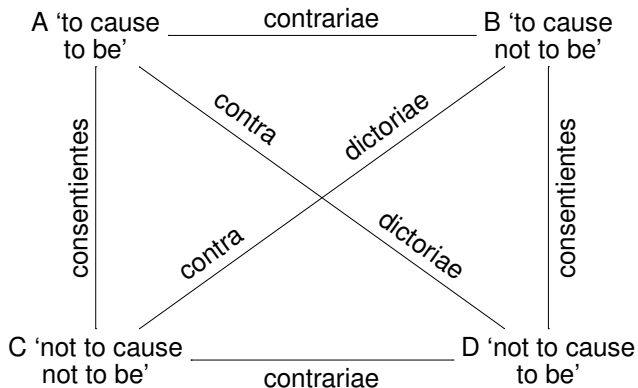
The four types

Doing always results in something being or not being the case. Something can either be or not be the case because it is either caused or not caused. This gives us four types of agency:

- A to cause to be
- B to cause not to be
- C not to cause not to be
- D not to cause to be

Types (A) and (B) are called *affirmative*. Types (C) and (D) are called *negative*.

The Square of Opposition



The six modes

We say that x causes y when x causes y itself to be; or when x does not cause y itself not to be; or when x causes y to be by causing z to be, by not causing z to be, by causing z not to be, or by not causing z not to be.

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Taking 'to cause to be dead' as our example, we can illustrate the six modes this way:

1. Killing directly (positive *per se*)
2. Not making not dead (negative *per se*)
3. Making the killer have arms (positive, proximal *per aliud*)
4. Not arming the victim (negative, proximal *per aliud*)
5. Making the victim not armed (positive, distal *per aliud*)
6. Not making the killer not armed (negative, distal *per aliud*)

Some notation

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$$A1 \quad \delta p$$

$$A2 \quad \neg\delta\neg p$$

$$A3 \quad \delta q \wedge (q \leftrightarrow p)$$

$$A4 \quad \neg\delta q \wedge (q \leftrightarrow \neg p)$$

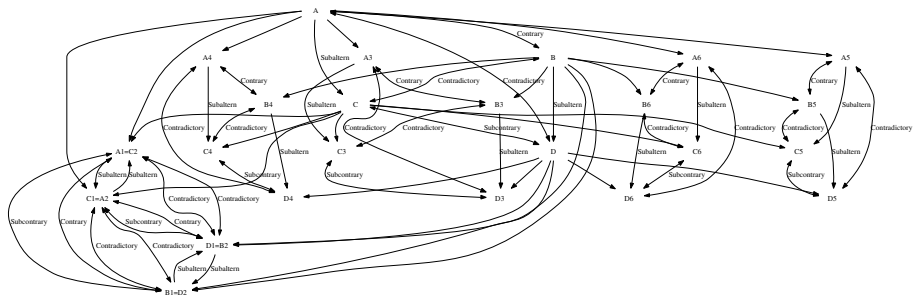
$$A5 \quad \delta\neg q \wedge (q \leftrightarrow \neg p)$$

$$A6 \quad \neg\delta\neg q \wedge (q \leftrightarrow p)$$

The types and the modes

- ▶ Each of the four types can be expressed in each of the six modes.
- ▶ Within each type, the six modes are all independent.
- ▶ $A1 \equiv C2$, $A2 \equiv C1$, $B1 \equiv D2$, $B2 \equiv D1$
- ▶ The other 16 combinations of modes and types are independent.
- ▶ But between the same mode in each type the relationships in the Square hold, giving one big

The Squid of Opposition



Anselm's thesis

Anselm's thesis: Any ascription of doing will be one of these twenty forms.

In ordinary usage, the twenty different types are not all distinct. We often use affirmative claims as a short hand when what we really mean is the negation of the contrary, for example:

x does so that there are evils

can be used in cases where the more proper expression would be

x does not so that evils are not

Proper (logical) usage

So much for ordinary usage. What about proper usage? According to Anselm, only the first mode of each type represents proper usage:

'x does so that p' has the proper sense, 'x does so that p, which was not the case, becomes the case'... [and] is only properly used in the case described by [the positive per se mode]'

Formalization in modal logic (1)

Because Anselm's conception of agency is modal, his theory can be formalized in modal logic.

A **normal** modal logic contains these axioms:

$$(K) \quad \delta(p \rightarrow q) \rightarrow (\delta p \rightarrow \delta q)$$

$$(M) \quad \delta(p \wedge q) \rightarrow (\delta p \wedge \delta q)$$

$$(C) \quad (\delta p \wedge \delta q) \rightarrow \delta(p \wedge q)$$

$$(N) \quad \delta \top$$

A modal logic which omits one of these axioms is **non-normal**.

Formalization in modal logic (2)

T Contains (K), (M), (C), (N) and (T) $\delta p \rightarrow p$.

Corresponds to *usus loquendi*

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T Contains (K), (M), (C), (N) and (T) $\delta p \rightarrow p$.

Corresponds to *usus loquendi*

EMCT Contains (M), (C), (T).

Corresponds to *usus proprie*

Thank You

Draft version of associated paper available at
<http://staff.science.uva.nl/~suckelma/latex/anselmagency.pdf>