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Anselm's logic of agency

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Abstract

The origins of treating agency as a modal concept go back at least to the 11th century when Anselm, Archbishop of Canterbury, provided a modal explication of the Latin *facere* ‘to do’, which can be formalized within the context of modern modal logic and neighborhood semantics. The agentive logic induced by his conception satisfies the traditional square of opposition, but also has some unique properties which reflect the fact that Anselm’s modal view of agency is grounded strongly in non-logical philosophical and theological considerations. We show that the logic modeling Anselm’s theory of agency provides an interesting alternative to standard logics of agency based on stit-theory.

1 Agency as a modal notion

Most discussions of modality in the Middle Ages seem to leap directly from Boëthius to Peter Abelard, without any discussion of modal theories in the intervening period.¹ This is because ‘modality’ is usually taken in a very narrow sense of the term, referring only to the modalities of possibility, contingency, necessity, and impossibility. But there is no reason that we need to be bound to such a narrow view of modality. If we expand ‘modality’ to cover things such as agency, knowledge, belief, obligation, time, modes of being, and so forth, then suddenly the period between Boëthius and Abelard becomes a rich and fruitful period of study because of the works of Saint Anselm, Archbishop of Canterbury.

Anselm was born in Aosta, in the kingdom of Burgundy, in 1033. At the age of 27, he joined the Abbey of Bec, where he served as abbot from 1078 to 1093. In 1093, he was made Archbishop of Canterbury. Anselm spent much of his monastic life teaching and writing. Part of the attraction of the Abbey of Bec was the school opened there by Lanfranc, where logic, rhetoric, and

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¹See, e.g., [Knuuttila 1980], though this is partially redressed in [Knuuttila 1993].

theology were taught to all comers, not just those who intended to join the church. Anselm taught in this school for many years, before beginning to put his teachings into writing, with his first work, the *Monologion*, written in 1076. Anselm continued to write until the end of his life.²

From a logical point of view, the most interesting material can be found in fragmentary notes which were compiled and organized by Eadmer, Anselm's friend and later biographer, shortly after Anselm's death in 1109. These notes along with letters of Anselm's, collectively called the Lambeth fragments as the primary manuscript is preserved in the Lambeth palace, were first edited in [Schmitt 1936] and then partially again in [Southern et al. 1969]. The first edition rearranges the fragments into a more conceptually coherent organization; the second retains the original arrangement made by Eadmer. The text is partially translated with detailed commentary in [Henry 1967] and completely translated, with little commentary, in [Hopkins 1972]. Among other topics, the Lambeth fragments contain modal analyses of certain Latin verbs, including *facere* 'to do', *velle* 'to will', and *posse* 'to be able'. It is believed that Anselm composed the parts of the Lambeth fragments that deal with *facere*, *posse*, and *velle* while he was archbishop of Canterbury [King –, p. 1]. In these fragments, Anselm's primary focus is on *facere*, with his analyses of *velle* and *posse* being modeled on the analysis of *facere* for the most part.

In his discussion of the meaning and function of the Latin verb *facere* 'to do', Anselm identifies four types of doing and further subdivides each type into six different modes. The relationships between the four types can be placed neatly into a square of opposition. According to [Belnap et al. 2001], it is this square of opposition which "clearly indicates that he [Anselm] had in mind a modal logic of agency" [p. 19]; they note that Anselm appears to be the first person to consider the modal interpretation of agency in a rigorous fashion. This modal interpretation of agency found in Anselm shows that the idea of treating agency as a modal concept is far older than many action theorists might have thought.³ This gives us at least two reasons why a modern logician would be interested in this historical theory. The first reason is the purely formal question of what the modal logic of Anselm's theory of agency actually is, whether it is identical with any of the standard modern agentive logics or whether Anselm's constraints result in something new. The second reason is the philosophical question of whether this historical theory has any insights to offer to modern problems and questions of agency.

Our focus in this paper is primarily the formal question. However, in order to answer the formal questions we must consider the philosophical and theological motivations of Anselm which underpin various aspects of this theory. We hence start in §2.1 by giving a brief introduction to the theory and a survey of Anselm's non-logical motivations. After that, we turn to the details of the theory, the four types and six modes of agency, and the square of opposition in which they can be placed, in §2.2. §3 and §4 are devoted to considering how the theory can be formalized using modern techniques. In particular, we look at two modern syntaxes, one proposed specifically for Anselm's theory by Walton in [Walton 1976a] and [Walton 1976b], and another, more general, agentive

²For more information on Anselm's life and works, see [Davies et al. 2004a], specifically [Davies et al. 2004b] and [Evans 2004].

³The first modern author to recognize Anselm's theory as developing a modal interpretation of agency is Henry, in [Henry 1953] and [Henry 1967].

system, stit-theory. With respect to the first, we show that because Walton did not have an adequate semantics, his syntax introduced features which are not found in Anselm’s original theory, and that given an adequate semantics, namely that of neighborhood models, we can give formalizations for different interpretations of Anselm’s theory. With respect to the second, we show that stit-theory, even though people working with stit-theory often cite Anselm’s views as their inspiration, cannot correctly characterize Anselm’s theory.

2 Anselm on *facere*

Anselm’s discussion of *facere* is in the setting of a dialogue between a teacher and his student. The opening statement of the teacher contains all the details of the theory in a nutshell:

Mag. Verbum hoc, quod est, “facere”, solet poni pro omni verbo cuiuslibet significationis, finito vel infinito⁴, etiam pro “non facere”. cum enim quaeritur de aliquo: “quid facit?”: si diligenter consideretur, ponitur ibi “facere” pro omni verbo, quod responderi potest, et quodcumque verbum respondetur, ponitur pro “facere”. Non enim recte redditur ullum verbum interroganti: “quid facit?”, in quo non intelligitur facere, de quo interrogatur. Nam cum respondetur: “legit aut scribit”, valet idem ac si dicatur: hoc facit, scilicet legit aut scribit” [Schmitt 1936, p. 25].⁵

⁴The terminology of ‘infinite’ vs. ‘finite’ verbs Anselm has taken from Boëthius, and should not be confused with modern linguistic use of these terms. For Anselm, an infinite verb is one which is the complement of a finite verb, i.e., one which indicates a finite action. For example, ‘run’ is a finite verb, and ‘not run’ is an infinite verb.

⁵*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. And so too, these other verbs stand for the verb “to do”. For in a correct reply to one who asks “What (how) is he doing?” any verb at all will indicate a doing on the part of the person asked about. If someone were to respond, “He is reading” or “He is writing”, it is the same as if he were saying, “He is doing this, namely, reading”, or “He is doing that, namely, writing” [Hopkins 1972, p. 218]. Anselm goes on to write: *Potest autem omne verbum reddi sic interroganti. Et in pluribus quidem palam est, ut: cantat, dictat; in aliquibus vero fositan dubitatur, ut sunt ista, scilicet: est, vivit, potest, debet, nominatur, vocatur. Sed nemo reprehendit, si interroganti: ‘quid facit?’, respondetur, quia est in ecclesia, aut: vivit sicut bonus vir, aut: potest super totam civitatem, in qua habitat, aut: magnam debet pecuniam, aut nominatur super omnes vicinos suos, aut: vocatur ante omnes alios, ubicumque sit* [Schmitt 1936, p. 25] (“So then, any verb can be used in the answer. In many cases this is obvious, as for example when we reply, ‘He is singing’ or ‘He is composing’. In other cases, however, the substitution may seem somewhat problematical, as for example when we reply, ‘He is’, or ‘He lives’, ‘He is powerful’, ‘He owes’, ‘He is named’, ‘He is summoned’. But no one would reproach us if we were to answer someone who asked ‘What (how) is so-and-so doing?’ by saying, ‘He is in church’ or ‘He is living as a good man should live’, ‘He is powerful (ruler) over the whole domain in which he lives’, ‘He owes much money’, ‘He is named above his neighbors’, ‘Wherever he is, he is summoned before all others’” [Hopkins 1972, p. 218]). It is worth noting here that both transitive and intransitive verbs are used; this casts some doubt on Dazeley’s claim that “the sorts of verbs which can most readily be dealt with in Anselm’s system are transitive” and intransitive verbs are “the sorts of verbs that seem to be causing the trouble” [Dazeley et al. 1979, p. 77]. It is also interesting to contrast this with [Anderson 1970, p. 232], where Anderson indicates that a patient of some sort is a necessary condition for agency.

Perhaps the most striking feature of Anselm’s theory is its breadth, namely that for Anselm, an analysis of *facere* will encompass an analysis of *all* verbs.⁶ Some may object that it is *too* broad, and that either it cannot be used in particular situations or that too many things end up counting as examples of agency. The objection is essentially this: How can we expect to find a reasonable explication of what *facere* means and how it functions, if we will not be distinguishing it from any other verb? In the succeeding sections, where we present the philosophical and theological foundations which motivate Anselm’s theory, we will show how Anselm is able to handle this issue, and show that any more restricted conception of agency would be untenable, for him. While his scope of agency is wider than many modern theories, this very breadth of his account gives it more flexibility and allows it to be applied to cases of agency beyond the rather narrow setting of human agency.

2.1 Philosophical and theological motivations

We can isolate two non-logical motivations underlying Anselm’s development of his theory. The first motivation can be classified as methodological. Much of Anselm’s discussions of logical matters involves separating questions of logic and logical usage from questions of grammar and everyday usage, separating the *usus proprie* from the *usus non proprie* (also called *usus loquendi* and *usus communis locutionis*). This distinction is the main topic of his *De grammatico*, many themes of which are echoed in the Lambeth fragments.⁷ In *De grammatico*, Anselm points out that everyday usage (*usus loquendi*) of words is often sloppy, and what we say doesn’t always accurately represent what we mean. The aim of the grammarian is to explain the *usus loquendi* of terms; his goal is *descriptive*. The logician, on the other hand, has two options. He can either ignore the *usus loquendi* altogether, and make his aim strictly *prescriptive*, by focusing on the proper, logical uses of the terms involved, even when this explication seems at odds with our everyday uses of the terms. Alternatively, he can allow his logical explication to be broad enough to cover and hence to *explain* to some extent, the *usus loquendi*.

Parts of Anselm’s logical works take the former route, but in his discussions on agency he always allows for taking into account the latter route. In discussing *facere* he notes that *est et alia consideratio de verbo eodem, scilicet, quot modis usus loquendi dicat “facere”* [Schmitt 1936, pp. 28–29]⁸; as Henry says, these “are to be codified so that the deviations of these uses from the proper sense become evident” [Henry 1967, p. 123]. We cannot fully understand the proper usage of a term until we understand how ordinary usage differs from proper usage. Henry says that Anselm’s discussion of *facere* “is intended as a means of analyzing the senses of verbs as they occur in customary utterance (*usus*

⁶This broad interpretation of ‘to do’ has also been noticed by modern philosophers, for “J.L. Austin told us that “The beginning of sense, not to say wisdom, is to realize that ‘doing an action’, as used in philosophy, is a highly abstract expression—it is a stand-in used in place of any (or almost any) verb with a personal subject...” [Belnap et al. 1988, p. 175]. The quote is from [Austin 1956–57, p. 178].

⁷*De grammatico* is edited in [Anselm 1938–61, vol. 1]; a comprehensive discussion of the text and its relation to Anselm’s other works appears in [Boschung 2006]. See also [Henry 1960b].

⁸“We must consider another thing about the verb ‘to do’, namely, the different modes in which it has a use in our language” [Hopkins 1972, p. 221].

loquendi), in non-strict oblique uses as measured against the standard of their precise or strict signification, the latter being shown by exemplifying the simplest overt meaning of the verb in question” [Henry 1960a, p. 377]. The goal, then, is to produce a logical explanation for the result of the grammarian’s study of the word.

This explanatory motivation is connected to the other motivation guiding Anselm’s account of agency. As Lagerlund notes, “Anselm’s thinking and writing is always motivated by his interest in religion and theological problems” [Lagerlund 2008, p. 318]. To ignore the *usus non proprie* is a mistake on the part of the logician: scriptural usage of terms is often improper. Since it is everyone’s responsibility to seek further understanding of the scriptures, it follows that logicians should be interested in providing logical explanations for improper usage of terms. Thus, a medieval logician should be interested in providing a grounding for the improper or non-logical usage of terms, and any theory of agency which Anselm proposes needs to be able to explain why *facere* is used the way that it is in scripture. An explication of agency which does not make sense of scriptural usages of *facere* will not be adequate for Anselm, because just as *usus loquendi* is very broad, so too is scriptural use. Anselm specifies this in the Lambeth Fragments:

Siquidem et dominus in evangelio ponit “facere” vel “agere”—quod idem est—pro omni verbo, cum dicit: “Omnis qui male agit, odit lucem”, et “qui facit veritatem, venit ad lucem”. . . Similiter qui est aut sedat aut stat, ubi vel quando debet, et qui non est vel non sedet vel non stat, ubi aut quando non debet, veritatem facit. Hoc modo redigit dominus omne verbum positivum vel negativum in “facere” [Schmitt 1936, p. 28].⁹

And again in *De veritate*:

Facere autem non solum pro eo quod proprie dicitur facere, sed pro omni verbo dominus voluit intelligere. . . Usus quoque communis locutionis hoc habet, ut et pati et multa alia dicat facere, quae non sunt facere [Anselm 1938–61, vol. 1, V, p. 182].¹⁰

If our logical theory of agency can provide an explanation of the *usus loquendi*, then we will also have an explanation of the theological usage of the word, because the two combine.

⁹“Indeed, the Lord Himself in the Gospel uses *facere* and *agere*—which are the same—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’” [Hopkins 1972, p. 220]. In these verses, and in the verses from Matthew cited below, the original Greek has a form of $\pi\alpha\iota\epsilon\omega$; this word has the same generality that *facere* has in Latin and ‘to do’ in English, in that it can be used to stand in for any type of doing or making action.

¹⁰“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*” [Henry 1967, pp. 182–183].

The desire to give an adequate account of the scriptural usage of *facere* is not merely an idle exercise in logic and grammar. Because the concept of agency is closely connected to issues in responsibility for actions and hence culpability and sin, an explanation of the proper conditions under which agency can be ascribed will have implications for ethics as well as logic. These issues can be seen in Matthew 25:31–46, where on the day of judgment God will separate the sheep from the goats on the basis of what they did and didn’t do¹¹, and a similar sentiment is found in *De casu diaboli*:

Cum enim iste dicitur quia fecit esse nudum aut non esse indutum, non aliud intelligitur nisi qui cum posset non fecit, ut non esset nudus aut ut maneret indutus [Anselm 1938–61, vol. 1, I, p. 234].¹²

Knowledge of correct ascriptions of agency, both in proper usage and in common usage, is hence important because it gives knowledge concerning eternal culpability.

It is important to point out that in these cases, we are dealing with active, *human* agency. This point hardly seems worth noting; modern agency theorists focus on explications of ‘*x* does’ where *x* is an efficient agent, and indeed many of Anselm’s examples are of this type as well. But he says that *omnis tamen causa, sicut dixi, facere dicitur et omne, quod facere perhibetur, causa nominatur* [Schmitt 1936, p. 29].¹³ This means that his concept of agency covers more than just human agency. For example, on this view, if I trip over a tree which has fallen across the path, then it is perfectly plausible to ask “What did the tree do?” and respond “It tripped me.” Even he generally uses cases of human agency as examples of the logical properties of the theory, this is done only for pragmatic reasons:

Nota 2. Haec quidem exempla, quae posui de “facere esse” et de “facere non esse”, de causis efficientibus assumpsi, quoniam in his clarius apparet, quod volui ostendere. Sicut autem in efficientibus causis praedicti sex modi cognoscuntur, ita etiam in non efficientibus, si quis eos diligenter investigare voluerit, inveniuntur [Schmitt 1936, p. 32].¹⁴

This point needs to be stressed. We must be careful to separate the logical aspects of the theory from those aspects that can be called, broadly speaking, the applied aspects. For the present purposes, we are interested solely in the logical aspects of the theory, without regard to their application to discussions of human agency; as a result, any logic which is developed to address Anselm’s

¹¹Matthew 25:40 “The King will reply, ‘I tell you the truth, whatever you did for one of the least of these brothers of mine, you did for me,’” and 25:45 “He will reply, ‘I tell you the truth, whatever you did not do for one of the least of these, you did not do for me’”.

¹²“For when in the latter instance, someone is said to bring it about that the victim is naked, or that the victim is not clothed, the exact import is that although the person was capable of doing so, he did not bring it about that the victim was not naked, or that the victim remained clothed” [Henry 1967, p. 184].

¹³“Nonetheless, every cause (as I mentioned) is said to do something, and everything which is said to do something is called a cause” [Hopkins 1972, p. 221].

¹⁴“Note 2. These examples which I’ve given about “causing to be” and “causing not to be” all concerned efficient causation. I adopted these examples of efficient causation since what I wished to point out can be seen more clearly in them. but the same six modes are also found in the case of nonefficient causation, as one may discover if he cares to pursue the matter intently” [Hopkins 1972, p. 225].

discussion of *facere* must not turn on any specifically human (or even sentient) property. These facts only have a use when we are trying to give a full account of *human* agency, in which case an evaluation of *velle* ('to will') will also be necessary, as Serene makes clear:

Because the analysis of *facere* is meant to apply to all instances of agency, whether or not the subject is human, rational, conscious or even an efficient cause of the outcome, it does not constitute a complete or a specific account of human action. His full theory of human agency also includes some explanation of the nature of willing [Serene 1983, p. 144].

This is not to say that a more focused view of agency, pertaining specifically to human agency, might not also be a useful and fruitful exercise. Serene in [Serene 1983] provides an in-depth study of Anselm's work in the Lambeth fragments which focuses on the connections between doing and willing. This is not a logical article; there is no discussion of axioms, syntax, or semantics. However, the point she makes has consequences for the logic: any logic which is developed only to address Anselm's discussion of *facere* must not turn on any specifically human (or even sentient) property. Such facts only have a use when we are trying to give a full account of *human* agency, in which case an investigation of *velle* 'to will' would also be necessary.

2.2 The types and modes of doing

Now that we have seen some of the motivations underlying the informal statement of the theory, we can turn to the details of the account. Anselm says:

Quidquid autem facere dicitur, aut facit ut sit aliquid, aut facit ut non sit aliquid. Omne igitur facere dici potest aut 'facere esse' aut 'facere non esse'; quae duo sunt affirmationes contrariae. Quarum negationes sunt: 'non facere esse' et 'non facere non esse' [Schmitt 1936, p. 29].

Henry paraphrases this as: "For all x , if ' x does' is true, then x does so that something either is so or is not so. Hence the analysis of 'doing' will in fact be an analysis of x 's doing so that p , and of x 's doing so that not- p , [where ' p ' is a clause describing a state of affairs, and 'not- p ' is short for 'it is not the case that p ']" [Henry 1967, p. 124]. Hence, *doing* will always result 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 *facere esse* 'to cause to be'

B *facere non esse* 'to cause not to be'

C *non facere non esse* 'not to cause not to be'

D *non facere esse* 'not to cause to be'

In these glosses, 'to cause [p] to be' should be understood was a short-hand for 'to do such that p is the case'; if an agent x does such that p is the case, then he causes p to be, and vice versa, so this short-hand is licit. Types (A)

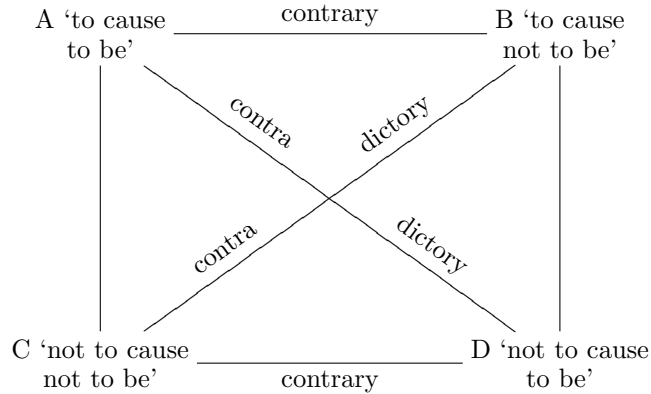


Figure 1: Agentive Square of Opposition

and (B) are called *affirmative*, and they are contraries. Types (C) and (D) are called *negative*; though he does not say so explicitly, they are also contraries. The implication relationships between these four types of agency form a square of opposition (see Figure 1). The graphical square itself is not present in Anselm’s work, but the verbal descriptions of the relations fix the graphical square uniquely. Each of the four types of action can be further divided into six modes, each of which picks out a different way that the main type of action can be brought about. For example, of type *A facere esse*:

Sex ergo modis ‘facere’ pronuntiamus: duobus videlicet, cum facit idipsum esse aut non facit idipsum non esse causa, quod facere dicitur; quattuor vero, cum aut facit aut non facit aliud esse vel non esse. Dicimus namque rem quamlibet facere aliquid esse, aut quia facit idipsum esse, quod facere dicitur, aut quia non facit idipsum non esse; aut quia facit aliud esse, aut quia non facit aliud esse, aut quia facit aliud non esse, aut quia non facit aliud non esse [Schmitt 1936, p. 29].¹⁵

that is,

Quidquid enim dicitur facere non esse aliquid, aut ideo dicitur, quia facit hoc ipsum non esse, aut quia non facit hoc ipsum esse aut quia facit aliud esse aut quia non facit aliud esse aut quia facit aliud non esse aut quia non facit aliud non esse [Schmitt 1936, p. 30].¹⁶

Let us illustrate these six different modes with an example, ‘to cause to be dead’ (this is the example that Anselm uses):

¹⁵“We speak in six modes of ‘causing to be’: 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” [Hopkins 1972, pp. 221–222].

¹⁶“We say that a thing causes something else not to be either because (1) it directly causes this other thing not to be, or (2) it does not directly cause it to be, or (3) it causes an intervening thing to be, or (4) it does not cause an intervening thing to be, or (5) it causes an intervening thing not to be or (6) it does not cause an intervening thing not to be” [Hopkins 1972, p. 223].

- A1 Killing directly (*facere idipsum esse*)
- A2 Not making not dead (*non facere idipsum non esse*)
- A3 Making the killer have arms (*facere aliud esse*)
- A4 Not arming the victim (*non facere aliud esse*)
- A5 Making the victim not armed (*facere aliud non esse*)
- A6 Not making the killer not armed (*non facere aliud non esse*)

This list distinguishes between positive agency (where the agent does something) and negative agency (where the agent does not do something), as well as direct *per se* agency (where the agent brings about the effect himself) and indirect *per aliud* agency (where he causes some other being to bring the effect about). There is a further distinction that can be made in cases of *per aliud* agency. They divide into cases where the agent indirectly performs an action and where the agent indirectly does not perform an action (we can call this ‘proximal’ and ‘distal’, respectively). Thus, the six types listed above can be classified as follows:

- 1 Positive *per se*
- 2 Negative *per se*
- 3 Positive, proximal, *per aliud*
- 4 Negative, proximal, *per aliud*
- 5 Positive, distal, *per aliud*
- 6 Negative, distal, *per aliud*

Each of the four types of agency can be expressed in each of the six modes, which means that we have potentially twenty-four types of agency. Within each type, the six modes are all independent; they can neither be defined by each other nor do they imply each other. The relationships between the four types do, in a sense, ‘trickle down’ to the modes within each type. For example, *A1* is the contrary of *B1*, *D3* is a contradictory of *A3*, and so on. As a result, it turns out that types *A1* and *C2* are identical, and likewise *C1* and *A2*, and the same for *B1* and *D1*, and *B2* and *D2*. The other sixteen combinations of modes and types are all logically independent, hence the result is twenty distinct ways that agentive statements can be expressed.

Anselm’s thesis is that any ascription of doing will be one of these twenty-four forms, but that in ordinary usage, the twenty logically distinct forms are often used interchangeably, as if they were not distinct but equivalent. He notes that in *usus loquendi*, we often use affirmative claims as a short hand when what we really mean is the negation of the contrary:

Sed affirmatio “facere esse” ponitur aliquando pro negatione, quae est “non facere non esse”; et conversim “non facere non esse” pro invicem ponuntur. Dicitur enim facere male esse aliquando aliquis idcirco, quia non facit ea non esse; et mala non facere non esse, quia facit ea esse; et facere bona non esse, quia non facit ea esse; et non

facere bona esse, quia facit ea non esse [Schmitt 1936, p. 29].¹⁷

In a more detailed explanation, Anselm says:

Et notandum, quia in modis negandi primus simpliciter negat nihil aliud insinuans; quinque vero sequentes habent negationem pro contrario suae affirmationis. Qui enim resuscitat aliquem, dicitur in secundo modo “non facere illum esse mortuum” pro “facere non esse mortuum”, et “non facere non esse viventem” pro “facere esse viventem” [Schmitt 1936, p. 33].¹⁸

That is, forms *C2-C6* and *D2-D6* are often used equivalently with forms *B2-B6* and *A2-A6*, respectively, even though, strictly speaking, forms *C3-C6*, *D3-D6*, *B3-B6* and *A3-A6* are all nonequivalent. (As noted earlier, *C2* is equivalent to *A1*, and so on for the first and second modes of each type.) This is an example of Anselm demonstrating how ordinary usage can be explained in part by their logical definitions and relations. The same phenomenon shows up later in the same philosophical fragments, when Anselm uses his explication of *facere* as a model for his discussion of *esse* ‘to be’, *habere* ‘to have’, and *debere* ‘to be obliged, ought’. He says:

dicimus etiam nos “non debere peccare” pro “debere non peccare”. Non enim omnis, qui facit, quod non debet, peccat, si proprie consideretur. . . Sed si memores eorum, quae supra dicta sunt, sicut dicimus “non facere esse” pro “facere non esse”: ita dicimus “non debere facere” pro “debere non facere”; et ideo, ubi est “debere non peccare”, dicitur pro eo “non debere peccare”. Quod in tantum obtinuit usus, ut non aliud intelligatur, quam “debere non peccare” [Schmitt 1936, p. 36].¹⁹

Nevertheless, we need to remember that though we may use the locutions interchangeably, *tamen differunt* [Schmitt 1936, p. 32], and only the first mode

¹⁷“But the affirmation (A) ‘causing something to be’ is sometimes used in place of the negation (D) ‘not causing something not to be’, and vice versa. Likewise (B) ‘causing something not to be’ and (C) ‘not causing something to be’ are sometimes used in place of each other. Thus, someone may on occasion be said to cause evil to be because he does not cause it not to be; or he may be said not to cause evil not to be, because he causes it to be. In the same way, he may be said to cause good not to be, because he does not cause it to be; and he may be said not to cause good to be, because he causes it not to be” [Hopkins 1972, p. 221].

¹⁸“It must be noted that while the first mode of the negative tables [modes *C* and *D*] simply negates, without implying anything else, each of the five subsequent modes in the negative tables contains statements which can be substituted for those statements which appear in that table which is the contrary of their corresponding affirmative table. For example, whoever revives someone may be said ‘not to cause him to be dead’ in the place of ‘to cause him not to be dead’; and we may also substitute ‘not to cause him not to be living’ for ‘to cause him to be living’ . . .” [Hopkins 1972, p. 227].

¹⁹“We also say that we are not ‘obliged to sin’ (*non debere peccare*) as a substitute for saying that we are ‘obliged not to sin’ (*debere non peccare*). But properly speaking not everyone who does what he is not obliged to do sins. . . Now as you remember, we said earlier that ‘not to cause to be’ may be used in place of ‘to cause not to be’. In the same way, we say ‘is not obliged to’ for ‘is obliged not to’, and ‘is not obliged to sin’ for ‘is obliged not to sin’. But our [Latin] usage is such that ‘is not obliged to sin’ we really mean ‘is obliged not to sin’” [Hopkins 1972, pp. 231–232]. In modern linguistics, this phenomenon is called “negation raising” or “neg raising”. For general information on negation raising, see [Horn 1989]. My thanks to Laurence Horn for drawing to my attention this parallel occurrence concerning *debere*.

of each type represents *usus proprie*.²⁰

Note that this is partially contrary to Serene’s assertion that “only ascriptions made in mode one are ‘proper’, since this is the only mode in which the agent’s action directly causes the outcome ascribed to him. Ascriptions in mode two are ‘improper’ because the directly relevant factor is the agent’s failure to act rather than his directly doing what is ascribed to him.” [Serene 1980, p. 123]. Ascriptions in the second mode of the negative types (*C2* and *D2*) must count as proper if the first mode of the two positive types are to count as proper, since they are identical. And likewise, if the first mode of the negative types are to be considered proper ascriptions of agency, then the second mode of the positive types must also be considered proper, for the same reason.

3 Semantics for non-normal modal logics

In this section and the next we look at how Anselm’s theory can be connected to modern formal logical systems. Concerning the semantics of agency, we show in this section that the type of modal logic which best expresses the features of Anselm’s account of agency is a non-normal modal logic. Traditional semantics for normal modal logics are not adequate for modeling non-normal modal logics, so we will use instead neighborhood semantics.²¹ With neighborhood semantics, we will then be able to consider, in the next section, the syntax proposed by Walton in [Walton 1976a] and [Walton 1976b] specifically for modeling Anselm’s theory.

Before we introduce neighborhood semantics, though, we first discuss briefly a system of agentive logic which is more prevalent in contemporary literature on agency, namely stit-theory. stit-theory was introduced in [Belnap et al. 1988] in an attempt to “augment the language with a class of sentences whose fundamental syntactic and semantic structures are so well designed and easily understood that they illuminate not only their own operations but the nature and structure of the linguistic settings in which they function” so that we can “progress toward a deeper understanding of an agent doing an action” [Belnap et al. 1988, p. 175]. However, despite the fact that Anselm’s modal conception of agency is regularly referred to in literature on stit-theory (e.g., [Horty et al. 95], [Xu 1995], [Müller 2005], and [Troquard et al. 2006]), often in the context of offering a justification for certain aspects of the theory, stit-theory is actually a remarkably poor choice for modeling Anselm’s logic. As we discuss in the next section, in formalizing Anselm’s theory, we want to have that $\delta_a(p \vee q) \leftrightarrow (\delta_a p) \vee (\delta_a q)$, but this equivalence does not hold in standard stit-theory.²² Therefore, we will concentrate our focus on neighborhood semantics to model Anselm’s theory of agency as a non-normal modal logic.²³ First, we must say what a normal modal

²⁰ “[T]hey are different from each other” [Hopkins 1972, p. 225]; *siquidem ille proprie facit esse, qui facit, ut sit, quod non erat* [Schmitt 1936, p. 32], “Thus, properly speaking, he causes to be who causes there to be what previously was not” [Hopkins 1972, p. 225].

²¹ Neighborhood semantics, called ‘minimal models’ in [Chellas 1980] were developed by Montague and Scott in [Montague 1968] and [Scott 1980], respectively.

²² [Belnap et al. 2001, pp. 84–85] notes that $[\alpha \text{ stit } p] \vee [\alpha \text{ stit } q]$ follows from $[\alpha \text{ stit } p]$ but that $[\alpha \text{ stit}(p \vee q)]$ does not, so $[\alpha \text{ stit } p] \vee [\alpha \text{ stit } q]$ and $[\alpha \text{ stit}(p \vee q)]$ cannot be equivalent.

²³ We also omit from discussion the syntax introduced by Danto in [Danto 1973], which is both cursory and unfortunate. Danto says very little about Anselm; there is a brief mention and then a footnote. He uses Anselm as a justification for introducing the expression *mDa*, to be read “*m* makes happen the event *a* by doing *a*”. He says that

$$\begin{aligned}
\mathbf{C} : & \quad (\Box\varphi \wedge \Box\psi) \rightarrow \Box(\varphi \wedge \psi) \\
\mathbf{E} : & \quad \Box\varphi \leftrightarrow \neg\Diamond\neg\varphi \\
\mathbf{K} : & \quad \Box(\varphi \rightarrow \psi) \rightarrow (\Box\varphi \rightarrow \Box\psi) \\
\mathbf{M} : & \quad \Box(\varphi \wedge \psi) \rightarrow (\Box\varphi \wedge \Box\psi) \\
\mathbf{N} : & \quad \Box\top \\
\mathbf{T} : & \quad \Box\varphi \rightarrow \varphi
\end{aligned}$$

Figure 2: Some common modal axioms and their standard names

logic is:

Definition 3.1. A *normal* modal logic is any extension of propositional logic containing at least one modal operator \Box which contains axioms \mathbf{K} , \mathbf{M} , \mathbf{C} , and \mathbf{N} of Table 2 (the names of these axioms are those found in [Chellas 1980, ch. 1]), and is closed under *modus ponens*, uniform substitution, and the rule of necessitation RN (from $\vdash \varphi$ infer $\vdash \Box\varphi$).

The minimal modal logic which contains all of these axioms and satisfies these rules of inferences is called \mathbf{K} . The standard semantics for a normal modal logic are Kripke relational semantics: a structure is a *frame* $\mathfrak{F} = \langle W, R \rangle$ where W is a non-empty set and R is a binary relation on W , and a model is a frame plus a valuation function, e.g., $\mathfrak{M} = \langle \mathfrak{F}, V \rangle$, where V is a map from atomic sentence letters to $\mathcal{P}(W)$.

As we will see in more detail in §4, some of the rules of inferences and axioms of normal modal logics are problematic when we try to apply them to agency. We therefore look at axiom systems which are weaker than \mathbf{K} , namely ones that do not have the necessitation rule and which omit one or more of the axioms listed above. Since \mathbf{K} is characterized by the class of all Kripke frames, these sub- \mathbf{K} , non-normal logics cannot have Kripke frames as their semantics. Instead, non-normal modal logics are usually modeled with neighborhood semantics.

Definition 3.2. A *neighborhood model* is a structure $\mathfrak{M} = \langle W, N, V \rangle$ where

- W is a set of points, called worlds.
- N is a function from W to $\mathcal{P}(\mathcal{P}(W))$, such that $N(w)$ is called *the neighborhood of w* .
- V is a function from atomic sentence letters to $\mathcal{P}(W)$. If $w \in V(p)$, we say that p is true at w , or $V(p, w) = 1$.

the locution *mDa* covers the stiltedness of the expression ‘... makes ... happen by ...-ing’ and permits us to treat actions in a generalized manner by treating ‘does’ for the moment as an auxiliary of action verbs, much as ‘knows’ may be an auxiliary of cognitive verbs. In doing so, I follow the illustrious precedent of Anselm of Canterbury who in discussing the Latin verb *facere* treats it in similar auxiliary fashion [Danto 1973, p. 7].

Danto then quotes Anselm, and footnotes this with a reference to the Lambeth fragment, and notes that a translation of the fragment by Ernst Van Haagen was “scheduled for publication in the *American Philosophical Quarterly*” [Danto 1973, p. 199], but I have unfortunately not been able to find any further record of this publication.

This is an unfortunate case where symbolic notation is introduced as a method of clarifying the underlying structure of the sentences being discussed but where in fact the notation ends up merely hiding the relevant issues without explaining them.

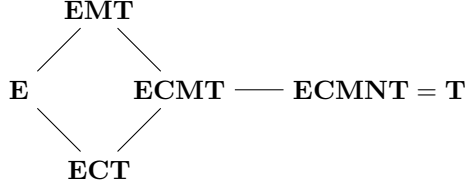


Figure 3: Lattice of logics between **E** and **K** containing **T**

In these models, each formula is associated with a *truth set*.

Definition 3.3. Let \mathfrak{M} be a neighborhood model and φ a formula. The *truth set for φ in \mathfrak{M}* is $\|\varphi\|^{\mathfrak{M}} = \{w \in W : w \in V(\varphi)\}$

The clauses in the truth definition for the propositional connectives are as expected. We add the following for the modal connective:

Definition 3.4. Let \mathfrak{M} be a neighborhood model, w a world in \mathfrak{M} and φ a formula. Then

$$\mathfrak{M}, w \models \Box\varphi \text{ iff } \|\varphi\|^{\mathfrak{M}} \in N(w)$$

The modal logic characterized by the class of all neighborhood models the logic **E** (so called in [Chellas 1980]). **E** has one axiom, **E**, and one rule of inference **RE** (from $\vdash \varphi \leftrightarrow \psi$ infer $\vdash \Box\varphi \leftrightarrow \Box\psi$).

We define **EM** to be the smallest logic containing both **E** and **M** (cf. Table 2) and closed under *modus ponens* and uniform substitution, and similarly for **EN**, **EC**, **ET**, **EMC**, **EMCT**, etc. The logics between **E** and **K** extended by **M**, **N**, and **C** form a boolean lattice where each combination is distinct and **ECMN** = **K**. Each of these with **T** as a further axiom are also all distinct logics (see Figure 3). We prove a few of the cases. The other proofs are either straightforward or found in [Chellas 1980, pp. 214–217].

Theorem 3.5. **EMT** \neq **C**

Proof. Let $\mathfrak{M} = \langle W, N, V \rangle$ where

$$\begin{aligned}
 W &= \{0, 1, 2\} \\
 N(0) &= \{\{0, 1\}, \{0, 2\}, \{0, 1, 2\}\} \\
 N(1) &= \emptyset \\
 N(2) &= \{0, 1, 2\} \\
 V(p) &= \{0, 1\} \\
 V(q) &= \{0, 2\}
 \end{aligned}$$

Then **C** is falsified at 0, because $\|p\|^{\mathfrak{M}} = \{0, 1\} \in N(0)$ and $\|q\|^{\mathfrak{M}} = \{0, 2\} \in N(0)$, but $\|p\|^{\mathfrak{M}} \cap \|q\|^{\mathfrak{M}} = \{0\} \notin N(0)$. Further, **E**, **M**, and **T** are true everywhere. (In addition, note that this model also does not satisfy $\Box\top$, because of 1.) \square

Theorem 3.6. **ECT** \neq **M**

Proof. Let $\mathfrak{M} = \langle W, N, V \rangle$ where

$$\begin{aligned} W &= \{0, 1\} \\ N(0) &= \{0\} \\ N(1) &= \{1\} \\ V(p) &= \{0, 1\} \\ V(q) &= \{0\} \end{aligned}$$

Then, since $\Box p$ is true nowhere, both T and C are satisfied everywhere, but $0 \vDash \Box(p \wedge q)$, and hence M is falsified. (It should also be clear that this model also does not satisfy $\Box \top$, either.) \square

As we've introduced them, these neighborhood models are mono-modal. If we wish to introduce a 'does' modality for each agent, then we need to work within a multi-modal setting, which requires us to modify slightly the definition of neighborhood model given above, with a corresponding modification to the truth conditions for agentive formulas.

Definition 3.7. A *multi-modal neighborhood model* is a structure

$$\mathfrak{M} = \langle W, A, N_a \text{ for } a \in A, V \rangle$$

where

- W is a set of points, called worlds.
- A is a set of agents.
- Each N_a is a function from W to $\mathcal{P}(\mathcal{P}(W))$. We call $N_a(w)$ "the neighborhood of w for a ".
- V is a function from atomic sentence letters to $\mathcal{P}(W)$. If $w \in V(p)$, we say that p is true at w , or $V(p, w) = 1$.

Definition 3.8. Let \mathfrak{M} be a multi-modal neighborhood model, w a world in \mathfrak{M} and φ a formula. Then

$$\mathfrak{M}, w \vDash \delta_a \varphi \text{ iff } \|\varphi\|^{\mathfrak{M}} \in N_a(w)$$

where we read $\delta_a p$ as ' a does so that p '.

In the next section we apply these different classes of models to the syntax developed in [Walton 1976a] and [Walton 1976b] to see whether certain questions which he leaves open can be settled.

4 The syntax of agency

In this section we look at the syntactical representation of Anselm's theory based on standard modal logic given by Walton in [Walton 1976a] and [Walton 1976b]. Walton introduces his syntax without providing any semantics, and he leaves open some questions about which axioms can be legitimately introduced, because he has no semantic theory to decide the question. We answer these questions with the help of the semantics presented in the previous section. We start with a classical propositional language

$$\mathcal{L}_A := \{P, A, \wedge, \vee, \neg, \rightarrow, \leftrightarrow, \rightsquigarrow, \delta_a\}$$

A1	δp
A2	$\neg\delta\neg p$
A3	$\delta q \wedge (q \rightsquigarrow p)$
A4	$\neg\delta q \wedge (q \rightsquigarrow \neg p)$
A5	$\delta\neg q \wedge (q \rightsquigarrow \neg p)$
A6	$\neg\delta\neg q \wedge (q \rightsquigarrow p)$

Figure 4: The six modes of type A

<i>facere esse</i>	δp
<i>facere non esse</i>	$\delta\neg p$
<i>non facere esse</i>	$\neg\delta p$
<i>non facere non esse</i>	$\neg\delta\neg p$

Figure 5: The four proper modes of agency

where P is an infinite set of propositions and A is a (possibly but not necessarily infinite) set of agents. We define the well-formed formulas of \mathcal{L}_A as:

$$\varphi := p \mid \neg\varphi \mid \varphi \wedge \psi \mid \varphi \rightarrow \psi \mid \varphi \hookrightarrow \psi \mid \varphi \rightsquigarrow \psi \mid \delta_a\varphi \text{ for } a \in A$$

where \hookrightarrow is causal implication, \rightsquigarrow is *per aliud* causal implication, and the operators δ_a , one for each agent in A , are our ‘does’ modalities.²⁴ When the specification of the agent is not necessary, we drop the subscript; δp is read ‘someone does such that p ’. Note that in this syntax, we have just one type of modal operator; because there is no good natural language expression that corresponds to the dual notion of agency, we do not define a dual operator $\neg\delta\neg$.

With this syntax, we are able to represent all six modes of the four different types of agency introduced in §2.2. As an example, we give the six modes of type A (*facere esse*) in Table 4. Recall that, for Anselm, only types A1 and A2 count as proper, from a logical point of view. This means that, for discussing just the logical aspects of the theory, we need not say anything about how the relationship expressed by $q \rightsquigarrow p$ is to be interpreted, since this only shows up in the four improper forms. The four proper forms are listed in Table 5.

There is an important respect in which using a language like the one we’ve outlined, and like the one Walton uses in his reconstruction, is best described as *Anselmian*, and *not* Anselm’s actual ideas (beyond the surface difference that Anselm never gave this type of formalism). Anselm explicitly allows as answers to the question “What is he doing?” only atomic actions and negations of atomic actions. Because our language allows *any* type of formula to be substituted in for p in $\delta_a p$, this system cannot be taken as being a reconstruction of Anselm’s actual ideas.²⁵ However, because Anselm himself says that the answer to “What is he doing?” can be *any* verb, this extension of our syntax is not unreasonable,

²⁴We make no assumption about any of the properties of these agents, other than that they are agents, in as weak a sense as possible. This is in line with what we discussed at the end of §2.

²⁵Walton is aware of this: “St. Anselm did not, to my knowledge, take the next step that would be of interest to a student of modern sentence logic, namely extension to conjunctive, disjunctive, and materially conditional states of affairs” [Walton 1976b, p. 301].

because it makes just as much sense to say “He is reading and sitting” and “He makes it the case that if he reads he is sitting” as it does to say “He is reading” or “He is sitting” (see footnote 5).

After Walton introduces his syntax, he considers different possible candidate theorems for a logic of Anselmian agency. The first he proposes is both necessary and obvious:

Axiom 4.1 (Success). $\delta_a p \rightarrow p$

This is the agentive parallel to the axiom T introduced in the previous section. Its intuitive plausibility follows from the fact that after agent a does so that p , then p must be the case, for otherwise, you’re saying that a succeeded in bringing about p , even though p is still false, which makes no sense. Beyond its intuitive plausibility, there is second reason to adopt this axiom. This axiom implies $\neg\delta_a p \vee \neg\delta_a \neg p$, which in turn is equivalent to $\neg(\delta_a p \wedge \delta_a \neg p)$, the truth of which is required for the relations in the square of opposition to hold (cf. [Segerberg 1992, p. 349]).

Next Walton considers the following pair of potential axioms:

Proposition 4.2 (Conjunction Elimination). $\delta_a(p \wedge q) \rightarrow (\delta_a p \wedge \delta_a q)$

Proposition 4.3 (Conjunction Introduction). $(\delta_a p \wedge \delta_a q) \rightarrow \delta_a(p \wedge q)$

These are converses of each other. Walton argues that we cannot accept both of these as axioms or theorems. He claims that adding

$$\delta_a(p \wedge q) \leftrightarrow (\delta_a p \wedge \delta_a q)$$

is too strong, because this equivalence plus the T axiom is provably equivalent to the standard normal modal logic **T** [Walton 1976b, p. 303, fn. 17]. He says that this is unacceptable because **T**, being a normal modal logic and hence an extension of **K**, both proves versions of the paradoxes of strict implication and also validates the rule of necessitation RN. From an agentive point of view, RN violates intuitions that we have about agency and tautologies. It should not be the case that any agent can *cause* it to be the case that a tautologous state of affairs is obtained. Such states of affairs will obtain vacuously, whether or not we ever do anything, and even in spite of our actions. The problems with this rule also apply to adopting either $\delta_a p \leftrightarrow p$ (material equivalence) or $\delta_a p \Leftrightarrow p$ (strict or causal equivalence) as theorems.

Walton is wrong in rejecting the acceptance of both Proposition 4.2 and Proposition 4.3 out of hand, for two reasons. The first is that

$$\delta_a(p \wedge q) \leftrightarrow (\delta_a p \wedge \delta_a q) + \delta_a p \rightarrow p$$

is equivalent to

$$\delta_a(p \rightarrow q) \rightarrow (\delta_a p \rightarrow \delta_a q) + \delta_a p \rightarrow p$$

only in the presence of the further axiom $\delta_a \top$. Without $\delta_a \top$, RN is not sound. If we wanted to take both Proposition 4.3 and Proposition 4.2 as axioms, we can do so without sacrificing our intuitions about doing. The resulting logic is **EMCT**.

The second reason is that his objection to RN relies on a certain narrow conception of agency. Under such a narrow conception, agency is always active

and causal. But insisting that we interpreted Latin *facere* as ‘to cause’ is too restrictive. If we remember that the analysis of *facere* is an analysis of doing, not of causation, then it wouldn’t seem that unreasonable if someone said ‘agent *a* does such that $p \vee \neg p$ ’. In fact, I myself am doing such that an infinite number of tautologies are true. Here is a case where the ordinary usage (*usus loquendi*) of terms contradicts some intuitions about their potentially more narrow logical functions.²⁶ For insofar as tautologies are necessary, $\neg\delta_a\neg p$ (‘it is not the case that *a* brings it about that not *p*’) will always be true when *p* is a tautology; and then, as mentioned earlier, it *does* follow that $\delta_a p$ holds whenever *p* is a theorem. If we are interested in the logical properties of *facere* at the possible expense of ordinary usage, then the necessitation rule is unacceptable and we must look elsewhere for axioms and rules. If, however, we are interested in explaining in logical terms our ordinary usage of *facere*, as Anselm appears to be doing, then T presents itself as a most plausible choice.

That being said, we will continue to focus on the more strictly logical, rather than common usage, analysis of doing. Walton concludes, incorrectly, that one of Proposition 4.2 and Proposition 4.3 must be given up. He gives up the latter, because this is the route taken in [Fitch 1963]²⁷, but his argument for accepting Proposition 4.2 is simply to state what it says, and note that adopting it plus axiom T “would give us the rudiments of a seemingly not very contentious, if rather minimal, system of agency” [Walton 1976b, p. 302]. But the same could be said if we took Proposition 4.3 instead of Proposition 4.2.

After accepting Axiom 4.1 and Proposition 4.2, Walton next proposes, and quickly rejects, the following:

Proposition 4.4. $(\delta_a p \wedge (p \rightarrow q)) \rightarrow \delta_a q$

His reason for rejecting this is that this axiom is even stronger than Propositions 4.3 and 4.2 combined. In this he is correct, both in his rejection of the principle and his reason for doing so. Proposition 4.4 is stronger than the axiom K, as it implies $(\delta_a p \wedge q) \rightarrow \delta_a q$. This is clearly too strong, so Proposition 4.4 should be rejected.

Instead, Walton offers a version of the K axiom as an alternative to Proposition 4.2:

Axiom 4.5. $(\delta_a p \wedge \delta_a(p \rightarrow q)) \rightarrow \delta_a q$

²⁶This case is similar to one presented by Anderson, when he notes the two possible answers to the question of “Who (wrongly) left the door open?”:

Devotees of quantification theory might immediately point out that if the door was left open, then *everyone* left the door open, on the grounds that no-one closed it. But it ought to be clear that the questioner does not want to hear “everyone” in response to his question.

Just *who* left the door open may depend on lots of moot questions, and certainly it depends on the rules governing the situation [Anderson 1970, p. 240].

Putting Anderson’s answers in Anselmian terms, the answer “everyone” is the correct answer according to *usus proprie*, and the more palatable answer, say, “Bob”, is correct according to *usus communis* or *loquendi*.

²⁷Fitch gives no argument for why we should take this over Proposition 4.3. He claims outright that he’s assuming it’s true: “We assume that the following concepts, viewed as classes of propositions, are closed with respect to conjunction elimination: striving (for), doing, believing, knowing, proving” [Fitch 1963, p. 137]. He makes no argument for the truth of this assumption.

He says that the system combining Axiom 4.1 with Proposition 4.5 is stronger than that containing just Axiom 4.1 and Proposition 4.2, because Proposition 4.5 implies Proposition 4.2 but that “the converse implication does not seem to hold. [The claim] is inconclusive, in the absence of a δ_a -semantics” [Walton 1976b, p. 304]. As we noted earlier, he is wrong in saying that Proposition 4.5 implies Proposition 4.2; it does so only in the presence of the further axiom $\delta\top$, which we have reason to reject when modeling the proper, logical usage of *facere*. However, now that we have provided a type of δ_a -semantics, we can confirm that his second claim is correct; Proposition 4.2 does not imply axiom 4.5.

Finally, Walton puts forward one further possible axiom or theorem:

Proposition 4.6 (Causal implication). $(\delta_a p \wedge (p \leftrightarrow q)) \rightarrow \delta_a q$

(Here, we use \leftrightarrow to represent causal implication.) The reason that this proposition is formulated as causal implication instead of just standard implication is because Walton wishes to block $(\delta_a p \wedge (p \rightarrow q)) \rightarrow \delta_a q$ as a theorem, as this implies $(\delta_a p \wedge q) \rightarrow \delta_a q$, which has as an unfortunate instance the following: “If Socrates scratches his head and Plato dies, then Socrates brings it about that Plato dies” [Walton 1976b, p. 304]. Walton discusses this theorem in the context of agency *per aliud*. Agency of this type only becomes relevant when we are trying to give an analysis of the *usus loquendi* of the term *facere*; it plays no role in the analysis of the strict logical usage of the term. A full analysis of the improper usage of the term is much more difficult, and as it is one best left to the grammarian and linguist, we do not pursue it further here.

5 Concluding remarks

There is a relevant sense in which Walton’s approach, in developing the syntax and leaving any questions of semantics behind, more adequately captures what is found in the Anselmian texts, and in which our semantical proposal is inherently, anachronistic. As Serene notes, Anselm in the texts discussed above “presents the modes as a disjunctive *necessary condition* for ascriptions of agency, but he does not to my knowledge assert that any relationship, no matter how remote, between a subject and a state of affairs provides a sufficient condition for agency” [Serene 1983, p. 146] (emphasis added). This is a crucial feature of his theory. If there were such a sufficient condition for ascriptions of agency, then given how encompassing his theory of action is, it would be possible to make practically every person (or indeed, every object) an agent for every action, because failure to act counts, in his theory, as action. With the ensuing consequences such a move would have for personal culpability and sin, this is clearly a move we do not want to take.²⁸

Walton’s syntax can be seen as an extension of Anselm’s necessary conditions, in which any ascription of agency will have one of twenty distinct possible syntactic constructions. When we add semantics, we are essentially adding sufficient conditions; we can say that when such-and-such conditions hold, we can then make a true statement about agency.

²⁸We would also be faced with a variant of the problem of evil, namely that God, because he does not do so that it is the case that people always do good, thereby *does* such that evil exists.

In no way, then, should the discussions in the preceding two sections be taken as a formalization of *what Anselm said*, as it is not. The formalizations should be viewed as inspired by, and hopefully capturing, the brilliant insights of his theory of agency. We have seen that the breadth of Anselm’s conception of agency is a point in its favor, and not a reason for discard. Further, Walton’s extension of Anselm’s discussion of agency to non-atomic actions seems thoroughly plausible, and we can provide both syntax and semantics to accommodate this extension. If we are content to divorce the logical theory from any ethical theory, there is no problem with the addition of semantics from the formal point of view.

With that caveat expressed, we draw the following conclusions about Walton’s syntax of Anselm’s agentive logic. Depending on specific ideas about agency, there are a number of different choices for logics:

T The normal multi-modal logic **T**, which has as axioms both $\delta_a(p \wedge q) \leftrightarrow (\delta_a p \wedge \delta_a q)$ and $\delta_a \top$, corresponds to at least some aspects of our ordinary usage of the word *facere*.

EMT, ECT These both block the unwanted inference of $\delta_a \top$, which is desirable from the standpoint of the logical usage of *facere*, as well as barring the equivalence found in **T**, thus satisfying the syntax provided by Walton.

EMCT This blocks the unwanted inference of $\delta_a \top$ but allows for the equivalence noted above, for which the only argument against was the incorrect claim that it caused the logic to collapse into **T**, and for which arguments for can be provided.

With this we have answered one of the questions mentioned in §1. We have shown that each of these logics is characterized by a class of models, and hence that each system is sound, and that they are all distinct. Which class of models should be preferred depends on the context of usage. From the point of view of proper logic, **EMCT** is the most expressive logic capturing Anselm’s views.

References

- [Anderson 1970] Anderson, A.R. 1970. The logic of Hohfeldian propositions. *Logique et analyse* 49–50, 231–242.
- [Anselm 1938–61] Anselm of Canterbury. 1938–61. *S. Anselmi Cantuariensis Archiepiscopi opera omnia*, 6 vols., ed. F.S. Schmitt, Seccovii: Abbatia.
- [Austin 1956–57] Austin, J.L. 1956–57. A plea for excuses. *Proceedings of the Aristotelian Society*, reprinted in *Philosophical papers*, Oxford: Oxford University Press, 1970.
- [Belnap et al. 1988] Belnap, N. & M. Perloff. 1988. Seeing to it that: a canonical form for agentives. *Theoria* 54, 175–199.
- [Belnap et al. 2001] Belnap, N., Perloff, M., & M. Xu. 2001. *Facing the future*, Oxford: Oxford University Press.
- [Boschung 2006] Boschung, P. 2006. *From a topical point of view: dialectic in Anselm’s De Grammatico*, Ph.D. dissertation, University of Zurich.

- [Chellas 1980] Chellas, B.F. 1980. *Modal logic: an introduction*, Cambridge: Cambridge University Press.
- [Danto 1973] Danto, A.C. 1973. *Analytical philosophy of action*, Cambridge: Cambridge University Press.
- [Davies et al. 2004a] Davies, B. & B. Leftow, eds. 2004. *The Cambridge companion to Anselm*, Cambridge: Cambridge University Press.
- [Davies et al. 2004b] Davies, B. & B. Leftow, eds. 2004. Introduction. In B. Davies & B. Leftow, (eds.), *The Cambridge companion to Anselm*, Cambridge: Cambridge University Press.
- [Dazeley et al. 1979] Dazeley, H.L. & W.L. Gombocz. 1979. Interpreting Anselm as logician. *Synthese* 40, 71–96.
- [Evans 2004] Evans, G.R. 2004. Anselm’s life, works, and immediate influence. In B. Davies & B. Leftow, (eds.), *The Cambridge companion to Anselm*, Cambridge: Cambridge University Press.
- [Fitch 1963] Fitch, F.B. 1963. A logical analysis of some value concepts. *Journal of symbolic logic* 28, no. 2, 135–142.
- [Henry 1953] Henry, D.P. 1953. St. Anselm and the varieties of doing. *Theoria* 19, 178–185.
- [Henry 1960a] Henry, D.P. 1960. The scope of the logic of St. Anselm. In L. de Raeymaeker (ed.), *L’homme et son destin d’après les penseurs du Moyen Âge: actes du premier Congrès international de philosophie médiévale, Louvain-Bruzelles, 28 août-4 septembre 1958* Louvain: Nauwelaerts, Paris: Béatrice-Nauwelaerts, 1960.
- [Henry 1960b] Henry, D.P. 1960. Saint Anselm’s *De ‘grammatico’*. *Philosophical quarterly* 10, no. 39, 115–126.
- [Henry 1967] Henry, D.P. 1967. *Logic of Saint Anselm*, Oxford: Oxford University Press.
- [Hopkins 1972] Hopkins, J. 1972. *A companion to the study of St. Anselm*, Minneapolis: University of Minnesota Press.
- [Horn 1989] Horn, L. 1989. *A natural history of negation*, Chicago: University of Chicago Press.
- [Horty et al. 95] Horty, J.F. & N. Belnap. 1995. The deliberative STIT: a study of action, omission, ability, and obligation. *Journal of philosophical logic* 24, 583–644.
- [King –] King, P. forthcoming. (St.) Anselm of Canterbury [1033–1109]. In *Encyclopedia of Philosophy* 2nd ed., preprint available at <http://individual.utoronto.ca/pking/articles/Anselm.EP.pdf>
- [Knuuttila 1980] Knuuttila, S. 1980. Time and modality in scholasticism. In S. Knuuttila (ed.), *Reforging the great chain of being*, Dordrecht, London: D. Reidel Publishing Company.

- [Knuuttila 1993] Knuuttila, S. 1993. *Modalities in medieval philosophy*, London, New York: Routledge.
- [Lagerlund 2008] Lagerlund, H. 2008. Review of Peter Boschung, *From a topical point of view: dialectic in Anselm of Canterbury's De grammatico*. *Journal of the history of philosophy* 46, no. 2, 317–318.
- [Montague 1968] Montague, R. 1968. Pragmatics. In R. Klibansky, (ed.), *Contemporary philosophy: a survey*, vol. 1, Florence: La Nuova Editrice.
- [Müller 2005] Müller, T. 2005. On the formal structure of continuous action. In R. Schmidt, I. Pratt-Hartmann, M. Reynolds, & H. Wansing, (eds.), *Advances in modal logic* 5, London: King's College Publications.
- [Schmitt 1936] Schmitt, F.S. 1936. *Ein neues unvollendetes Werk des hl. Anselm von Canterbury*, Aschendorff: Münster i W.
- [Scott 1980] Scott, D. 1970. Advice on modal logic. In K. Lambert, (ed.), *Philosophical problems in logic: some recent developments*, Dordrecht: Reidel.
- [Serene 1980] Serene, E. 1980. Anselm's modal conceptions. In S. Knuuttila (ed.), *Reforging the great chain of being*, Dordrecht: D. Reidel Publishing Company.
- [Serene 1983] Serene, E. 1983. Anselmian agency in the *Lambeth Fragments*: a medieval perspective on the theory of action. *Anselm studies, an occasional journal* 1, 143–156.
- [Segeberg 1992] Segerberg, K. 1992. Getting started: beginnings in the logic of action. *Studia Logica* 51, nos. 3/4, 347–478.
- [Southern et al. 1969] Southern, R.W. & Schmitt, F.S. (eds.) 1969. *Memorials of St. Anselm*, Auctores Britannici Medii Aevi I., London: Oxford University Press for the British Academy), specifically 334ff.
- [Troquard et al. 2006] Troquard, N., Trypuz, R., & L. Vieu. 2006. Towards an ontology of agency and action: from STIT to OntoSTIT+. In B. Bennett & C. Fellbaum, (eds.), *International conference on formal ontology in information systems (FOIS), Baltimore, Maryland, USA*, vol. 150 of *Frontiers in artificial intelligence and applications*, IOS Press, 179–190.
- [Walton 1976a] Walton, D. 1976. Logical form and agency. *Philosophical studies* 29, 75–89.
- [Walton 1976b] Walton, D. 1976. St. Anselm and the logical syntax of agency. *Franciscan studies* 36, 298–312.
- [Xu 1995] Xu, M. 1995. On the basic logic of STIT with a single agent. *Journal of symbolic logic* 60, no. 2, 459–483.