

CHANGE AND CONTRADICTION: A FOURTEENTH-
CENTURY CONTROVERSY

I

In the third book (*d. 3, q. 2, art. 3*) of his Commentary on the Sentences John Baconthorpe says that almost all doctors at the beginning of the fourteenth century follow what they take to be the Aristotelian doctrine of change. According to this doctrine the time preceding a generation corresponds to the *terminus a quo* while the ultimate instant of it corresponds to the *terminus ad quem* of a change.¹ The most common medieval analysis of beginning and ceasing was really Aristotelian in the sense that according to it in different kinds of changes there is only a first instant of a state or a last instant of the preceding state, but not both. In connection with the notion of time as continuous the last alternative would lead to a refutation of the Law of Contradiction or the Law of the Excluded Middle.² Another type of solution was developed among medieval atomists.³ Surprisingly enough, no attention has hitherto been paid to the third type of solution, which caused much discussion in early fourteenth century. In this solution a real contradiction is accepted in nature, because the *termini* of instantaneous change cannot, according to it, belong to different instants of time. The Law of Contradiction is not, however, refuted in logic, because it was thought that the instant of time containing a contradictory state of affairs can be divided, although not physically, into instants of nature.

In the fourth book of his Commentary on the Sentences Francis of Meyronnes says that there are four different contemporary opinions concerning the first principle (*primum principium complexum*). The principle is formulated by him as follows: "De quolibet est affirmatio vel negatio vera et de nullo ambo simul." It thus contains the Laws of Contradiction and the Excluded Middle. Francis then relates that

- (1) according to some writers the first principle is not to be violated. He belongs to this group.
- (2) Secondly, Francis mentions people who have said that the first principle cannot be maintained for the natural world without qualifications, because there is substantial change.

- (3) Others have thought that it does not hold of divine things because of the infinity of the subject but that it does of the natural world.
- (4) Lastly, he mentions people who have denied the principle with respect to divine and natural things. According to Francis, Petrus Rogerii, later Pope Clemens VI, says that he belongs to this last group.⁴

Our purpose in this paper is to discuss some representatives of the second group, i.e., of the view according to which an instantaneous change contains contradiction. In reacting against this view, John of Jandun, Francis of Meyronnes, Francis of Marchia, John the Canon, Michael of Massa, and others, seem to refer to Landulf Caraccioli OM (c. 1287–1351) who was the main representative of this theory. Landulf discusses the problem in several places, and according to him contradictory sentences in connection with simple change (*mutatio*) are true in the same instant of time, although they are not true with respect to the same instant of nature. Landulf says that only in this way can the Aristotelian theory of instantaneous change be saved as well as the *primum principium complexum*. The latter must only be qualified so that *simul* in connection with the instantaneous change does not mean the same instant of time but the same instant of nature, i.e., although something can be and not be in the same instant of time, it does not follow that the difference between being and not being would disappear.⁵

We will first elucidate the background of the medieval discussion about the problem of change and contradiction and then present the main lines of Landulf's solution, which in our opinion enriches the picture of the early fourteenth century physics in an important way.

II

Thomas Aquinas puts forward the common scholastic opinion in his commentary on Aristotle's *Physics* (*L. I, c. 7, lect. 13, 7*) by saying that there are three species of change: generation, corruption, and motion. This Aristotelian classification is based on two different reasons. *Motus* (*kinēsis*) involves change of state in an existing substance to another state of that substance, whereas *generatio et corruptio* (*genesis kai phthora*) involve the coming-to-be and the passing-away of substances themselves. This description is based on Aristotle's doctrine of categories: generation and corruption concern the first

category and motion quantity, quality, and local state. On the other hand, all change is between opposites or intermediates between opposites. Then generation and corruption involve a change between contradictories, and the different forms of *motus (kinesis)* involve changes between contraries (cf. Aristotle's *Physics* I, 188a30ff., V, 224b29–31).⁶ It is to be noticed that *motus* is in a certain aspect like *generatio et corruptio*. If we consider, e.g., a qualitatively changing thing at a certain stage, this stage is something which is contradictory to its not being in it. So the problem of contradiction was discussed in the Middle Ages both in connection with *motus* and in connection with *generatio et corruptio* which together were often called *mutatio* (see, e.g., Aquinas, *loc. cit.*).

According to Aristotle's definition of *kinesis*, it is the actuality of potentiality as such (*Phys.* 201a10–11, 27–29, 201b4–5). Thomas says in his commentary on the *Physics* that although in motion the same subject is *in potentia* and *in actu*, these states are not the same *secundum rationem*. If a piece of bronze is potentially a statue and actually bronze, it is not in the same respect that it is potentially the statue and actually a piece of bronze. Motion is not the actuality of bronze in so far as it is bronze but in so far as it is potentially the statue (*L. III, c. 1, lect. 2, 7*). Motion as an actuality of a potentiality as such is an imperfect actuality, *actus imperfectus*, and every imperfect actuality is according to Thomas Aquinas reduced to the genus of the corresponding perfection. This means that at every stage of a motion we can speak of the changing subject by stating how far it is from the perfection (cf. *ib.*, *c. 3, lect. 5, 17*). But what about the change between a certain stage and not being in that stage, or generation and corruption *simpliciter*. Here we do not have the possibility of using the quasi-quantitative method of noting the distance of an imperfect actuality from the perfect actuality. In Aristotle's opinion this kind of change happens without intermediate stages and correspondingly it does not take time. It occurs in an instant.

A crucial text for the later significance of this doctrine is chapter 8 of the Eighth book of *Physics*, in which Aristotle discusses, *inter alia*, his doctrine that there is a first instant of being in generation but not an ultimate instant of not-being. Aristotle writes:

If one does not treat the instant of time that divides before and after as belonging to the later time so far as the object is concerned, the same thing will simultaneously be existent and not existent, and it will be not existent when it has come into being. The

actual now as a dividing instant is common to the earlier and the later time and it is numerically one, but it is not one in definition, being the end of the one and the beginning of the other. But so far as the subject of the change is concerned, it belongs to the later state of it. (*Phys.* 263b9–15).

Aristotle then makes use of the following example: let the time be ACB and the subject D. In the time A, D is white, in the time B not white, in the dividing instant C, therefore, it is both. For it is white in any element of A, and not white in any element of B, and C is both A and B. To avoid this difficulty, we must say that it is white not in the whole of A, but whole of A except its last instant, which belongs to the later state.

In Aristotle's theory any duration between contradictory states must be denied. On the other hand, if you have a span of duration within which a generation occurs, your description of the world during this period contains contradiction, and on Aristotle's continuous theory of time you cannot exclude the contradiction from the world by making temporal divisions. Aristotle's 'solution' to the difficulty is to say that the change is instantaneous and the instant belongs to the posterior time with respect to the changing object.

The reason for this solution appears clearly in Thomas Aquinas' comment on the next passage of *Physics* where Aristotle discusses the difficulties which follow from the assumption that time can be divided into indivisible times. Suppose that something which is not white at the moment A is white at the later moment B.

Therefore, since between being and non-being there is an intervening generation because nothing passes from non-being to being except by a generation, it follows that a generation intervened between A and B. Hence there will be some time intervening between A and B in which it became white. . . . And similarly, when it becomes white in that intermediate, indivisible time, it is not white; and so, for the same reason we ought to posit another intermediate time, and so on to infinity.

According to Aristotle and Thomas Aquinas the same reasoning does not apply if it is denied that time is divisible into indivisible times. This is only partially true, however, for in fact the problem as such is left untouched in the Aristotelian doctrine of the instant of change in continuous time:

For in this case we say that the time in which it was coming to be and is made is one and the same. It was coming to be and was non-being in the whole preceding time. It has been made, and is being in the ultimate "now" of time which is not related to the preceding time as consecutive to it, but as its terminus. (*In Phys. L. VIII, c. 8, lect. 17, 11*).⁷

III

Aristotle's method to avoid contradiction in connection with change is the basis of the common medieval solution to the problem of change. In the thirteenth and fourteenth century it was discussed by almost every thinker, and that discussion was concentrated (especially in England) on the problem of finding the rules according to which the meaning of the concepts *incipit* and *desinit* in a sentence should be analysed in order to avoid contradiction. The following rules, formulated by Peter of Spain, show how the problem in general was treated:

- (1) When the verb 'begins' occurs with the permanent things the being of which is obtained at an indivisible instant, it indicates an assertion of the present and a negation of the past.
- (2) When the verb 'begins' occurs with successive things it indicates a negation of the present and an assertion of the future because successive things do not have being at their outset.
- (3) When being is added to the verb 'ceases', it indicates a negation of the present and an assertion of the past, no matter what sort of thing it occurs together with.⁸

Much attention has been paid recently to the development of this kind of logical analysis of concepts *incipit* and *desinit* in the thirteenth and fourteenth century.⁹ The research has used as its material in the first hand logical tracts which directly take up this problem. It is a general feature in the history of medieval philosophy, however, that several logical and philosophical problems became actual so that solutions to them were needed in some specifically theological contexts. And although the treatments of the problems often turned to be autonomous so that the ties to the original theological questions became only verbal, the discussions still had their traditional place in different chapters of the Commentaries on the Sentences.¹⁰ It may be that scholars have not enough attended to this state of affairs in research of the locic of the notions *incipit* and *desinit*, and perhaps for this reason they have missed the dialectical solution to the problem of change, which by its adherents was mainly discussed in connection with certain theological questions. Following places in the early fourteenth century Commentaries on the Sentences are relevant here: *L. I, d. 17* (Increase and diminution of *caritas*), *L. II, d. 1* (Creation), *d. 2 ff.* (Angelology), *L. III, d. 1* (Incarnation), *d. 3*

(Immaculate Conception), *L.IV.d.* 10–12(Transubstantiation). The problem is dealt with also in quodlibetal questions, commentaries on Aristotle's *Physics* and *Metaphysics*, and separately circulating *questiones disputate* and other treatises.

At the present state of research it is not possible to give a fullfledged picture of the early development of this doctrine. It seems that it first appears in connection with certain problems of Mariology, but it was discussed, to be sure, already in the thirteenth century as a pure philosophical question, too.¹¹

Godfrey of Fontaines while criticizing Henry of Ghent's doctrine of the conception of Mary says that there were in the thirteenth century several writers who accepted in their Mariology the view that contradictory sentences are true at the same instant of time.¹² When Godfrey counts Henry among the adherents of this doctrine, it is perhaps against the intention of *Doctor Solemnis*.¹³ Anyway, he formulates his view in his Quodlibetal questions in such a way that this doctrine follows, as was then stated in addition to Godfrey of Fontaines by many other medieval writers, too.¹⁴

The reason for accepting contradiction in connection with Mariology seems to be this. As the cult of Mary developed especially in the Franciscan Order, the tendency to depict her life as more pure than those of ordinary people grew. The doctrine that God had purified her before Christ's conception in order to avoid the transition of original sin to Christ offered a starting point to this doctrine. When the purification according to the traditional view had happened at some time before the conception of Christ (according to Thomas Aquinas, e.g., during the embryonic period of Mary)¹⁵, the mariological interest had the effect that the moment of purification was moved backwards in the life of Mary as far as possible. And so Henry of Ghent wrote that there was no duration of Mary's state under original sin. She was under it only at the first instant of her being and afterwards purified. When Henry supposes, however, that the first instant of Mary's being also is the intrinsic limit of her being purified, he (perhaps unintentionally) broke the Aristotelian analysis of beginning and ceasing to the effect that it seems to be true that Mary at the first instant of her being was under original sin as well as purified.¹⁶ The reason for this solution is obvious. If Mary would be purified only in another instant of time, however near to the first instant of her being, there would be time between that instant and the first instant of her being and in that time she would not be purified.

As stated above there is an actual contradiction in nature according to Henry of Ghent perhaps only because he did not see clearly enough the consequences of his doctrine. It was often interpreted to be a conscious doctrine, however. This was only natural because in the early fourteenth century several writers put forward a general theory of change in which an actual contradiction in nature was accepted.

IV

According to many of his contemporary writers (about 1320) Landulf Caraccioli was the main representative of the theory in which an actual contradiction in nature was accepted. It seems that this solution had found rather extensive support among the Parisian masters during the first decades of the fourteenth century. Before Landulf Caraccioli gave his lectures on the Sentences, this theory was developed, a.o., by Hugo of Novocastro and John Baconthorpe. That Landulf was well acquainted with Hugo of Novocastro's Commentary on the Sentences is ascertained by the marginal notes occurring in the MSS and the long extracts he presents in his Commentary from Hugo's work.¹⁷ John Baconthorpe also gave his lectures in Paris probably c. 1318–1320¹⁸, but so far no concrete evidence is known of his doctrinal relations with the two Franciscans. Judging from the frequency and extent of the opposition roused by this theory it seems to have been a rather common matter for dispute. The fact that there was such a dialectical doctrine of change in the Middle Ages throws additional light on the interest in the problems of beginning and ceasing in the fourteenth century philosophy and theology.

According to John Baconthorpe the terms of change (*i.e.*, the *terminus a quo* and the *terminus ad quem*) are as distant from each other as the time required by the change from one to the other. But *mutatio* occurs in an instant. It follows that the terms cannot differ *secundum durationem* but only *secundum ordinem nature*. In this solution it is taken to be a fact that when there is a change, there must be a last moment at which it is true to say that something is not yet the case and a first moment at which it is true to say that it is the case.¹⁹ If the problem is put like this, it seems that in connection with the notion of time as continuous contradictory sentences are true in the same instant of time. Baconthorpe takes this to be, contrary to the common opinion of his contemporaries, the true Aristotelian doctrine. And,

surprisingly enough he seems to have used a translation of Aristotle's *Physics*, which supports his opinion. The Moerbekean translation of the passage 263b9 ff. runs as follows:

Manifestum autem et quia nisi aliquis faciat temporis dividens signum prius et posterius, semper posterioris rei, erit simul idem ens et non ens et quando fuit non est.

John Baconthorpe gives the text as follows:

Manifestum est, quoniam nisi aliquis faciat divisiones temporis, dividens signum prius et posterius, semper posterioris rei erit simul esse et non esse et quando fit non est.²⁰

John Baconthorpe deals with the problem in his Commentary on the Sentences extensively in connection with the doctrine of creation (*L. II, d. 1, q. 6, art. 1–3*), but the most detailed treatment is to be found in his discussion of Immaculate Conception (*L. III, d. 3, q. 2, art. 1–3*). A solution similar to that of John Baconthorpe was put forward by Hugo of Novocastro probably in the 1310's at Paris in connection with his doctrine of creation (*L. II, d. 1, q. 1, art. 5–6*).²¹

The great significance of this theory for Landulf Caraccioli is reflected by the fact that he deals with it in many connections in his Commentary on the Sentences and in separately circulating questions.²² The question in the MS *Erfurt*, Wissenschaftliche Bibliothek, Amploniana F. 178 (ff. 146 *ra* – 147 *bis va*) has been identified by Ch. J. Ermatinger as a work of Landulf Caraccioli; the following question in this MS on the same subject has at its end the name of the author and the date: John of Jandun, September 3, 1320. In his tract John of Jandun opposes the solution given by Landulf in the preceding question.²³

A closer examination of Landulf's text reveals that most of his arguments presented in the *Erfurt* question derive from the first question of the second book of his Sentence Commentary. As he also makes use of other arguments occurring in his second and fourth book,²⁴ it can be stated that the *Erfurt* question is posterior to his lectures on the Sentences. Thus the accurate *terminus post quem non* for his commentary is September 3, 1320, and as he gave his lectures after Peter Aureoli,²⁵ it seems safe to date his work in the term 1318/19.

Certain difficulties in dating Landulf's Commentary on the Sentences are caused by the MS *Naples*, Biblioteca Nazionale C VII 49 which contains Landulf's third book. Some of the marginal annotations published by Franz Ehrle, suggest that this text has been written in the late 1320's. So it has been

generally thought that Landulf gave his lectures on the Sentences in the third decade of the fourteenth century. But the comparison of the MSS of his third book shows that Landulf in fact composed two entirely different recensions of this book. Of these the text in the *Naples* MS is of a considerably later date than the earlier recension lectured in Paris. There is no doubt concerning the authenticity of both recensions.²⁶

The two recensions of the third book are of special value for the reconstruction of the controversy, because in the first recension Landulf gives some names and arguments of the opponents of the solution, which he by that time had most fully treated in the opening question of the second book.²⁷ It was probably because of this opposition that he gave the problem a more extensive treatment in the *Erfurt* question. But then he was met with the arguments of John of Jandun and also of his fellow Franciscan colleagues, Francis of Marchia and Francis of Meyronnes, who lectured on the Sentences in 1319/20 and 1321. To these he finally answers in the second recension of his third book.²⁸

The main argument of Landulf as presented in the opening question of his second book runs as follows: In an instantaneous change both terms are in the same instant. But in such a change the terms are contradictory. It follows that the *contradictoria* are simultaneously true in the same instant of time. The minor is true according to the Philosopher (*sc.* Aristotle). The major is proved: the terms are in the same instant or in different instants of time. In the first case, I have the proposition. In the second case, there will be an intermediate time (time between them), and thus the change is not instantaneous.

To this one could, Landulf goes on, respond that these terms are not in the same instant nor in different instants, because the whole preceding time corresponds to the *terminus a quo*, namely the not-being of the thing to be generated and the ultimate instant of this time corresponds to the other of the contradictories, namely the being.²⁹

This Aristotelian reply is in fact the most common argument presented against Landulf. It occurs, e.g., in the Commentary on *Physics* of John the Canon, where he explicitly refers to Landulf in this connection.³⁰ It is also used by John of Jandun in his tract against Landulf.³¹ And when Francis of Meyronnes, Francis of Marchia, Michael of Massa *et al.* use the same counterargument in their Commentaries on the Sentences, probably Landulf is their target, too.³²

Landulf's argument against this view is as follows: If we have an instantaneous change, all successive measurement is accidental with respect to it. And if we remove from an object its accidental properties, nothing essential in it will be changed. Let us take away the preceding time from a generation. Then we have in the ultimate instant the generation, and if we have the generation, we also have the *terminus a quo* and the *terminus ad quem*.³³

There are several other arguments in which Landulf tries to prove that contradictory sentences can be true in the same instant of time. Like John Baconthorpe he mentions the example of the subject, which is ultimately disposed to the form. The introduction of the form must occur simultaneously and so the subject is *sub utroque* in the same instant. If the form is not introduced in an instant, there is no generation, but motion.³⁴

In the fifth argument Landulf formulates his position very clearly. It runs as follows: If the whole preceding time corresponds to the *terminus a quo* and the ultimate instant of it to the *terminus ad quem*, we can ask which is the measure of the change as such. This measure cannot be the preceding time, because then the change is not instantaneous. If the measurement is the last instant, then I have my proposition. This is proved in the following way: The change is not a term but an acquisition of a term. Therefore in the same instant of time a thing is not in so far as it is coming to be and it is in so far as it is produced.³⁵

After a discussion of several corresponding examples Landulf in the second part of the question treats the problem in which indivisible instant contradictory sentences cannot be simultaneously true. The answer is already given – in an instant of nature. What it means can be seen from the argument in which Landulf shows that there cannot be any succession in indivisibles. The different instants of nature are not successive nor simultaneous; they are got by conceptual distinction. Two instants of nature are two indivisible measurements measuring *distincta entia permanentia*.³⁶ This qualification to the theory means that although there is a real contradiction in nature in connection with change, the laws of logic are not violated by it. Although something is and is not at the same moment of time in nature, we can make a conceptual distinction between being and not being. The logical order is thus different from the real order, which implies contradiction. This interpretation of the distinction between *instans nature* and *instans temporis*, was heavily criticized by the opponents of Landulf.³⁷ There are many problems in the

controversy about the real essence of the instants of nature which cannot be treated here. But perhaps it is not too much to claim that the discussion as such is a symptom of an interesting state of affairs. It seems that in connection with it the possibility of the difference between logical and real order was realized in a way which was beyond the purview of the Aristotelian conceptual realism.

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NOTES

¹ John Baconthorpe discusses the problem extensively in connection with his doctrine of Immaculate Conception (*L. III, d. 3, q. 2, art. 1–3*). His argument runs as follows: “Sequitur de tertio articulo. Ad quem dico quod termini contradictorii, qui sunt termini unius mutationis, sunt in eodem instanti, puta ultimum non esse forme generande et primum eius esse; et eodem modo dico in corruptione, quod ultimum esse forme corrupte et primum (non) esse eius sunt in eodem instanti. . . Probatio assumpti, scilicet quod ultimum non esse forme generande et primum eius esse sunt in eodem instanti: quia si aliquid impediret, hoc esset quod quasi omnes doctores dicunt quod Philosophus VIII Physicorum dicit quod non est dare ultimum non esse forme generande, sed ipsi non esse eius correspondet totum tempus precedens et instans solum correspondet primo esse eius. Sed hoc est falsum, immo, quia expresse ponit quod instans correspondet ultimo non esse sicut et primo esse. Ergo, etc. Probatio minoris: quia Philosophus dicit quod, nisi instans dividatur, quod res posterior, id est que generatur, simul erit et non erit. Unde dicit sic: Manifestum est quoniam, nisi aliquis faciat divisiones temporis dividens signum prius et posterius, semper posterioris rei, erit simul esse et non esse, et quando fit non est. Et concludit: Signum igitur utrisque commune est, et idem et unum numero, ratione non idem; huius autem finis, illius autem principium. Nota quod concedit quod est idem numero utrique commune. . . Sed illud quod omnes doctores dicunt, quod instans correspondet primo esse et non correspondet ultimo non esse, accipiunt ex hoc verbo quod Philosophus dicit: Res autem semper posterioris est passionis. Sed hoc nihil est. Quia Commentator sic exponit, comm. 69: Hoc idem dignius est, ut instans attribuatur posteriori passioni: quia posterior passio, scilicet terminus generationis, est ens, sed terminus a quo est eius non esse; et quia dignius est attribuere enti quam non enti, ideo passio dignius attribuitur posteriori. Et nota quod Commentator non negat quin attribuatur termino a quo, qui est non esse, sed termino ad quem, qui est esse; sed dicit quod dignius et magis attribuitur enti. Igitur doctores non habent intentum: quia bene attribuitur aliquid duobus, etsi alteri magis. . . Dices, quod philosophi et doctores pro tanto attribuunt tempus ipsi non esse precedenti et instans ipsi esse sequenti propter contradictionem primi principii, scilicet aliquid simul esse et non esse. . . Respondeo, quod falsum imponitur Philosopho. Non enim salvat Philosophus ibi contradictionem inter esse et non esse per hoc quod non esse mensuratur tempore precedente et non sit dare ultimum non esse cui correspondeat instans; sed salvat Philosophus contradictionem

per hoc quod dividitur instans in principium et finem, ita quod primo signo instantis, quod correspondet termino a quo subite mutationis, mensuratur ultimum non esse, et ultimo signo mensuratur primum esse, ut expresse patet in textu qui dicit, quod nisi aliquis dividat signum prius et posterius (loquitur de signis instantis), aliquid simul erit et non erit." (L. III, d. 3, q. 2, art. 3). An edition based on the only extant MS London British Library, Royal 11 C VI and the early prints of John Baconthorpe's questions on Immaculate Conception is published by L. Saggi, 'Ioannis Baconthorpe textus de Immaculata Conceptione', *Carmelus* 2 (1955), pp. 216–303. John Baconthorpe deals with the problem also in the second book of his Commentary on the Sentences (*Super quatuor Sententiarum libros; opus quidem insigne, nuperrime autem recognitum, tabulisque adiunctis optime reformatum . . .*, Venetiis, sumptibus heredum quondam domini Octaviani Scoti ac sociorum, 1526, L. II, d. 1, q. 6, art. 1–3). In his quodlibetal questions he takes up the problem in *Quodl.* I, qq. 2 and 9 (*Quodlibeta . . . summa diligentia emendata . . . Additis insuper quotationibus marginalibus, una cum tabula omnium et singularum questionum . . . a Marco Antonio Zimara . . . compilatis*. Venetiis, opera & impensis heredum quondam Octaviani Scoti ac sociorum, 1527).

² For this doctrine, see Norman Kretzmann, 'Incipit/Desinit' in P. K. Machamer and Robert G. Turnbull (eds.), *Motion and Time, Space and Matter*. Interrelations in the History of Philosophy and Science, Ohio State University, 1976, pp. 101–136.

³ For medieval atomists, see Anneliese Maier, 'Kontinuum, Minimum und aktuell Unendliches' in *Die Vorläufer Galileis im 14. Jahrhundert*. Studien zur Naturphilosophie der Spätscholastik I (Storia e Letteratura 22), Edizioni di Storia e Letteratura, Roma 1949, pp. 155–215; V. B. Zoubov, 'Walter Catton, Gérard d'Odon et Nicolas Bonet', *Physis* 1 (1959), pp. 261–278; J. E. Murdoch, 'Superposition, Congruence and Continuity in the Middle Ages', *Mélanges Alexandre Koyré I*, Hermann, Paris 1964, pp. 416–441; *id.*, 'Mathesis in Philosophiam Scholasticam Introducta. The Rise and Development of the Application of Mathematics in Fourteenth Century Philosophy and Theology' in *Arts libéraux et philosophie au moyen âge*. Actes du Quatrième Congrès international de philosophie médiévale, Institut d'Etudes Médiévales, Montréal – J. Vrin, Paris, 1969, pp. 215–254; *id.*, 'Naissance et développement de l'atomisme au bas moyen-âge latin' in *La science de la nature: théories et pratiques*. Cahiers d'études médiévales 2, Bellarmin, Montréal – J. Vrin, Paris, 1974, pp. 11–32.

⁴ An edition of this text has been published by Jeanne Barbet, *François de Meyronnes – Pierre Roger. Disputatio 1320–1321* (Textes philosophiques du moyen âge X), J. Vrin, Paris 1961, p. 136.

⁵ In his Commentary on the Sentences Landulf Caraccioli gives the following definitions: "Instans temporis mensurat indivisibilia in transmutationibus, videlicet instantaneas mutationes et mutata esse ut sunt in motu. Unde sepe Philosophus, quarto Physicorum dicit, quod sicut se habet totum tempus ad motum, ita instans ad mutatum esse. Instans nature mensurat esse et non esse rerum, non ut accipiuntur sub duratione vel non, vel sub permanentia et non permanentia durationis, sed ut sunt precise esse vel non esse. Philosophus enim dicit, quod simul natura sunt, quorum unum est altero ente ut relativa sunt simul natura, instans ergo nature respicit esse" (L. II, d. 2, q. 1). The only known incunabula of Landulf's second book is in the Vatican Library: Stamp. Barber. BBB IV 14 (s.d., s.l.).

⁶ See G. R. Morrow, 'Qualitative Change in Aristotle's Physics' in *Naturphilosophie bei Aristoteles* hrsg. von I. Düring, Carl Winter Universitätsverlag, Heidelberg 1966, pp. 154–165.

⁷ Translated in *Commentary on Aristotle's Physics by St. Thomas Aquinas*. Transl. by R. J. Blackwell, R. J. Spath, and W. E. Thirlkel (Rare Masterpieces of Philosophy and Science), Routledge & Kegan Paul, London 1963, p. 559.

⁸ Norman Kretzmann, *op. cit.*, pp. 110–114.

⁹ See Curtis Wilson, William Heytesbury: *Medieval Logic and the Rise of Mathematical Physics* (The University of Wisconsin Publications in Medieval Science 3), University of Wisconsin Press, Madison 1956; Herman und Charlotte Shapiro, 'De primo et ultimo instanti des Walter Burley', *Archiv für Geschichte der Philosophie* 47 (1965), pp. 157–173; Theodore James, *De Primo et Ultimo Instanti Petri Alboini Mantuani*. Edited with an Introduction, Analysis and Notes, Ph.D. dissertation, Columbia University 1968. University Microfilms, Ann Arbor, Michigan 71–17, 590; John P. Wickersham, *De Primo et Ultimo Instanti: A Problem of Indeterminacy in Medieval Physics*, Ph.D. dissertation, St. Louis University 1973. University Microfilms, Ann Arbor, Michigan 74–24, 156; Norman Kretzmann, *op. cit.* (see note 2); *id.*, 'Socrates is Whiter than Plato begins to be White', *Noûs* XI (1977), pp. 3–15.

¹⁰ For this praxis, see John E. Murdoch, 'From Social into Intellectual Factors: An Aspect of the Unitary Character of Late Medieval Learning', in John E. Murdoch and Edith Dudley Sylla (eds.), *The Cultural Context of Medieval Learning* (Synthese Historical Library 76), D. Reidel, Dordrecht, 1975, pp. 271–339.

¹¹ The problem is treated in some thirteenth century Commentaries on Metaphysics. See for instance the commentary ascribed to Galfridus (Geoffrey) de Aspall (d. 1287), *L. IV, q. 21*: "Utrum contradictoria possint simul esse vera" (MS Cambridge, Gonville and Caius College 509, ff. 86 va – 87 rb). For the catalogue of the questions, see A. Zimmermann, *Verzeichnis ungedruckter Kommentare zur Metaphysik und Physik des Aristoteles I* (Studien und Texte zur Geistesgeschichte des Mittelalters IX), E. J. Brill, Leiden – Köln, 1971, pp. 66–75.

¹² See *Quodl. VIII, q. 4*: "Utrum in expulsionem culpae sive originalis sive actualis, sint simul culpa quae expellitur et gratia quae expellit" (ed. J. Hoffmans, *Les Quodlibets VIII, IX, X de Godefroid de Fontaines*, Les Philosophes Belges IV, Éditions de l'Institut Supérieur de Philosophie, Louvain 1924–1931, pp. 51–60).

¹³ See *Quodl. XV, q. 13*: "Utrum conceptio Beate Virginis sit celebranda ratione conceptionis" (*Quodlibeta Magistri Henrici Goethals a Gandavo doctoris Solemnis: Socii Sorbonici: et archidiaconi Tornacensis, cum duplici tabella*. Vaenundantur ab Iodoco Badio Ascensio . . . , Parisiis 1518 (éd. anastatique, Louvain 1961), Vol. II, ff. 584r–589r. See also B. Hechich, *De Immaculata Conceptione Beatae Mariae Virginis secundum Thomam de Sutton O. P. et Robertum de Cowton O. F. M. Textus et doctrina* (Bibliotheca Immaculatae Conceptionis 7), Academia Mariana Internationalis, Roma 1958, p. 165 ff.

¹⁴ For the reaction to the solution presented by Henry of Ghent, see F. Leite de Faria, 'L'Attitude des théologiens au sujet de la doctrine d'Henri de Gand sur la Conception de la Sainte Vierge' in *Études Franciscaines* 5 (1954), pp. 133–152, and B. Hechich, *op. cit.*

¹⁵ Thomas de Aquino, *Summa Theologiae*, III^a, 27, 2 ad 2.

¹⁶ Henry of Ghent writes: ". . . scilicet peccatum originale in illo instanti simul habuit esse primo et ultimo, sed secundum aliud et aliud signum illius instantis, quia ut erat terminus temporis preteriti, in illo habebat esse primo mutatione subita in termino motus precedentis: ut vero illud instans erat initium temporis sequentis, in illo habuit esse ultimo per sequentem impulsionem motus gratie velut a superiori in tempore sequenti expellente illam" (*Quodl. XV, q. 13, ed. cit.*, f. 586 v).

¹⁷ See, e.g., *L. II, d. 1, q. 12* in Landulf Caraccioli's Commentary on the Sentences. Marginal notes referring to Hugo occur in the MSS *Milano*, Biblioteca Ambrosiana H 218 inf. and *Erlangen*, Universitätsbibliothek 257.

¹⁸ See B. M. Xiberta, *De Scriptoribus Scholasticis Saeculi XIV ex Ordine Carmelitarum* (Bibliothèque de la Revue d'Histoire Ecclésiastique, fasc. 6), Louvain 1931, p. 171.

¹⁹ For the whole context, see note 1 above. He continues: "Termini mutationis non plus distant nisi quantum durat mutatio que mediat inter terminos; sed mutatio subita non durat nisi per solum instans; igitur termini non distant secundum partes durationis, sed solum secundum ordinem nature. Vel formetur sic: Termini mutationis habent distantiam et simultatem secundum distantiam et simultatem principii et finis illius mutationis; sed in subita mutatione principium eius et finis non distant secundum durationem correspondentem diversis instantibus aut diversis partibus temporis sed sunt in eodem instanti; igitur esse et non esse que sunt termini alicuius unius mutationis sunt in eodem instanti, licet in eodem instanti sit ordo nature. Probatio maioris: quia principium mutationis et finis correspondent termino a quo et termino ad quem; igitur distantia terminorum est assumenda respectu principii et finis illius mutationis. Probatio minoris: quia si inter principium et finem mutationis subite caderet maior distantia quam instans, igitur mutatio non mensuratur instanti sed tempore: cuius contrarium ponit Philosophus et Commentator et omnes" (*L. III, d. 3, q. 2, art. 3*, ed. L. Saggi, *op. cit.*, p. 234).

²⁰ The translation used by John Baconthorpe is basically that of James of Venice (*Vetus Translatio, Aristoteles Latinus* no. 16). We owe this reference to Dr. Bernard G. Dod, who kindly checked the MSS *Oxford*, Corpus Christi College 111 and 114 for us. The differences between the text of these MSS and Baconthorpe's version suggest that he was using a MS perhaps corrupted by copying errors. So far it has not been possible to identify this MS.

²¹ The exact date of the Commentary on the Sentences of Hugo of Novocastro is so far undetermined. His argument is as follows: "Secundum alios, licet ordo prioritatis nature inter aliqua duo positiva possit esse in eodem instanti durationis, non tamen inter opposita, cuius (modi) sunt esse et non esse, quia (*fol. 4 ra*) contradictoria, ut dicunt, nullo modo in instanti durationis nec secundum existentiam nec secundum intelligentiam ordinis nature possint verificari de eodem. Sed istud videtur falsum, ut patet ex prima ratione. Quando enim ad ordinem duorum positivorum sequitur ordo duorum contradictiorum sicut ordo nature inter aliqua positiva potest esse in instanti durationis, ita ordo nature inter illa duo contradictoria. Sed ista est in proposito, quia ad ordinem inter esse producentis et producti sequitur ordo inter non esse et esse producti, ut patet in dicta ratione. Ergo sicut in instanti durationis potest esse ordo prioris et posterioris nature qui est inter producens et productum, ita in eodem instanti potest esse ordo prioris et posterioris nature, qui est inter non esse producti et eius esse. Et ideo non videtur verum, quin contradictoria in eodem instanti durationis possint verificari de eodem secundum diversa signa prioris et posterioris nature, quorum non sunt proprie contradictoria . . . Sed videtur mihi secundum predicta, quod qualis est prioritas nature inter esse producentis et producti, talis est inter non esse producti et suum esse. Et quia non videtur, quod prioritas nature inter esse producentis et producti sit habitualis tantum et non actualis, non videtur per consequens, quod prioritas nature inter non esse et esse producti sit habitualis tantum. Hoc tamen dico nihil asserendo, sed dubitando" (MS Vat. lat. 984, ff. 3 vb – 4 ra).

²² Landulf Caraccioli gives an extensive analysis to the problem in the opening question of the second book of his Commentary on the Sentences: "Utrum contradictoria que sunt termini creationis possint competere eidem in eodem instanti temporis secundum idem." An edition basing on eight MSS will be published in our forthcoming book concerning this theme. This question is also to be found in MS Vat. lat. 6768, ff. 227 rb – 228 va as a slightly abbreviated version, tentatively identified by Anneliese Maier in her article 'Die italienischen Averroisten des Codex Vat. lat. 6768', *Manuscripta* 8 (1964), pp. 68–82, also published in *Ausgehendes Mittelalter* II (Storia e Letteratura 105), Edizioni di Storia e Letteratura, Roma 1967, pp. 351–366. In addition, Landulf treats the problem in several other questions of the first, second and eighth distinctions of his second book. In both recensions of his third book (see notes 26–28 below) he mentions the problem in the following places: *L. III*¹, *d. 1, q. 1, d. 3 and 4, qq. 1–4, d. 15 and 16, qq. 1–2, d. 40, q. unica*; *L. III*², *d. 1, q. 6, d. 2, q. 2*. Also in the opening questions of his fourth book the same topic is discussed. On ground of the references Landulf makes in his second book (e.g., *d. 1, q. 6*) to the fourth book in the past tense, it seems that he possibly gave his lectures on the fourth book earlier than on the second book.

²³ See Ch. J. Ermatinger, 'John of Jandun in his Relations with Arts Masters and Theologians', in *Arts libéraux et philosophie au moyen âge*. Actes du Quatrième Congrès international de philosophie médiévale, Institut d'Études Médiévales, Montréal – J. Vrin, Paris 1969, pp. 1173–1184.

²⁴ His references are found in *L. II, d. 1, qq. 1 and 10*; *L. IV, d. 1, q. 1*.

²⁵ For dating of Peter Aureoli's Commentary on the Sentences, see Anneliese Maier, 'Diskussionen über das aktuell Unendliche in der ersten Hälfte des 14. Jahrhunderts', *Divus Thomas* (Fr.), Serie III, 24 (1947), pp. 147–166 and 317–337, also published in *Ausgehendes Mittelalter* I (Storia e Letteratura 97), Edizioni di Storia e Letteratura, Roma 1964, pp. 41–85.

²⁶ Of the marginal references on the later writers in MS *Naples*, Biblioteca Nazionale C VII 49 Ehrle gives the names of Francis of Marchia, Francis of Meyronnes, William Ockham, and Gerard Odon, see Franz Ehrle, *Der Sentenzenkommentar Peters von Candia, des Pisaner Papstes Alexander V* (Franziskanische Studien, Beiheft 9), Münster i.W. 1925, p. 262. It seems that this recension can be dated as late as c. 1326. The first recension, which is to be found in the MSS *Erlangen*, Universitätsbibliothek 258 and *Lüneburg*, Stadtbibliothek, Th. Fol. 48 fits well in with the dating 1318/19. The authenticity of both these recensions can be proved on account of the references which Landulf makes to his second book. The examination of the MSS *Milano*, Biblioteca Ambrosiana J 151 inf. and *Stuttgart*, Landesbibliothek F 234 has given as a result that they do not contain Landulf's third book, even if Stegmüller lists them among the MSS of Landulf's work (*Repertorium commentariorum in Sententias Petri Lombardi*, no. 514), but in fact those of Hannibaldus of Hannibaldis and Francis of Meyronnes (*Ab oriente recension*), respectively.

The most recent attempt to date Landulf's commentary has been made by W. Grocholl in his work *Der Mensch in seinen ursprünglichen Sein nach der Lehre Landulfs von Neapel* (Veröffentlichungen des Grabmann-Institutes, Neue Folge 9), Verlag Ferdinand Schöningh, München 1969, p. 28, where he puts it between the years 1321–1326. Anneliese Maier's tentative suggestion that Landulf possibly gave his lectures immediately after Peter Aureoli seems according to our results be quite correct, see

Anneliese Maier, 'Das Zeitproblem', in *Metaphysische Hintergründe der spätscholastischen Naturphilosophie*. Studien zur Naturphilosophie der Spätscholastik IV (Storia e Letteratura 52), Edizioni di Storia e Letteratura, Roma 1955, p. 127.

²⁷ In the first recension of his third book Landulf mentions as his opponents a certain Hannibaldus (probably to be identified as Annibald of Ceccano) and Thomas Anglicus (Wylton), whom he interestingly enough characterizes so the *magister* of Hannibaldus. No philosophical works by Hannibaldus have so far been discovered. In the same question (*d.* 40, *q.* unica: "Utrum lex evangelica sit excellentior metaphysica tam de speculabilibus quam de moralibus," MS *Erlangen*, Universitätsbibliothek 258, f. 114 va-115 ra) Landulf opposes the logic of Benedictus *predicator* (possibly to be identified as the Dominican Benedictus de Assignano), *magister* Mattheus *predicator* (possibly Mattheus Ursini OP, who gave his lectures on the Sentences in 1315/16 at Paris), and Iohannes de Roma *Augustinianus* (possibly Iohannes Cacantii de Roma OESA). In addition, Landulf makes explicit references to Thomas Anglicus also in the opening question of the third book (*d.* 1, *q.* 1, f. 100 rb).

²⁸ Landulf returns to the controversy in the question concerning Incarnation: "Utrum verbum assumpserit naturam humanam aliquo ordine." He makes an explicit reference to the opening question of his second book and states that he has been met with subtle opposition. A marginal note gives the names of his opponents: Francis of Marchia and Francis of Meyronnes. He gives the contents of their arguments as follows: "Octava conclusio, quod omnia ista signa nature sunt in uno instanti temporis. Patet de causa et effectu. Patet de toto ordine istorum signorum existentium in uno instanti temporis in incarnatione verbi, ut superius dicebatur. Patuit etiam in secundo libro (Sententiarum), questione prima, quod esse et non esse eiusdem rei que generabatur pro diversis signis nature poterant esse in uno instanti temporis.

Sed contra hoc argutum fuit subtiliter a quibusdam: Quecumque sunt compossibilia in uno instanti temporis, sunt compossibilia in toto tempore. Sed contradictoria per te sunt compossibilia in uno instanti temporis, ergo in toto tempore. Maior patet per Philosophum in Predicamentis, quia ita sunt contraria albedo et nigredo unius diei sicut mille annorum. Ratio est, quia oppositio et contrarietas oritur non ex duratione sed ex formali ratione oppositorum.

Preterea. Magis repugnant contradictoria quam contraria, decimo Metaphysice. Sed per te contradictoria sunt compossibilia in eodem instanti, ergo et contraria. Generari autem et corrumpi sunt contraria, quia contrarie mutationes, igitur idem in eodem instanti poterit generari et corrumpi, quod est impossibile" (MS *Naples*, Biblioteca Nazionale C VII 49, f. 28 rb). These arguments are presented in the Commentary on the Sentences of Francis of Marchia, *L.* III, *d.* 3, *q.* 2 (MS *Naples*, Biblioteca Nazionale C VII 23, ff. 208 rb – 208 va) as well as in many connections in the works of Francis of Meyronnes, e.g. *Conflatus*, *L.* I, *d.* 43, *q.* 3. In his reply Landulf refutes these arguments (*loc. cit.*, ff. 28 rb – 29 vb).

²⁹ "In mutatione instantanea uterque terminus est in eodem instanti. Sed in tali mutatione termini sunt contradictorii, ergo contradictoria simul sunt vera in eodem instanti temporis. Minor patet per Philosophum et Commentatorem, quinto Physicorum. Maiorem probo, quia termini aut sunt in eodem instanti temporis, aut in alio et alio. Si primum, habeo propositum. Si secundum, ergo erit ibi tempus medium et sic mutatio non erit instantanea. Respondetur ad maiorem, quod termini isti nec sunt in eodem instanti, nec alio vel alio, sed totum tempus precedens mensurat et correspondet uni contradic-

torio, scilicet non esse rei generande. Sed ultimum instans istius temporis correspondet alteri contradictorio, scilicet esse rei generande" (*L. II, d. 1, q. 1*). The text of the incunable has been corrected from the MSS. This argument occurs also in the *Erfurt* question as the first conclusion (MS *Erfurt*, Wissenschaftliche Bibliothek, Amploniana, F. 178, f. 146 ra).

³⁰ "Sed contra istam conclusionem arguit unus reverendus doctor qui tenet quod contradictoria possunt de eodem verificari in eodem instanti temporis, pro diversis tamen signis nature. Hoc probat sic: Omne subiectum est prius sua passione propria natura. In illo ergo priori in quo subiectum precedit suam propriam passionem vel passio est vel non est. Si est, ergo subiectum non precedit ipsam. Si non est et in secundo signo est, cum ista duo signa sint in eodem instanti temporis, aliter tempus esset medium in quo subiectum esset sine propria passione, quod est falsum. Ergo esse et non esse que sunt contradictoria, sunt verificabilia et compossibilia in eodem instanti. Ad idem (the MS Vat. Borgh. lat. 471 has 'Preterea') arguit sic Landulphus: In mutatione instantanea uterque terminus est in eodem instanti. Sed in tali mutatione termini sunt contradictorii, ergo et cetera. Minor patet per Philosophum, quinto Physicorum. Maiorem probat, quia termini aut sunt in eodem instanti, aut in alio et alio. Si primum, habeo propositum. Si secundum, ergo erit tempus medium, et sic non erit instantanea.

Respondeo et arguo primo contra hanc opinionem, quia magis repugnant contradictoria quam contraria. Ista etiam ab ipsis conceditur et ipsa etiam probabitur consequenter: Sed contraria non sunt compossibilia in eodem instanti temporis, ergo et cetera. Et ideo respondeo et dico, quod in illo priori quo subiectum precedit propriam passionem, passio est. Et cum dicis, ergo non est prius, nego consequentiam. Nam esse prius natura nihil aliud est quam presuppositio huius ab hoc in alteritate nature.

Ad secundum imaginor sic, quod forma ignis in toto tempore precedenti habuit esse et in ultimo instanti illius temporis habuit non esse, et in eodem instanti in quo ipsa habuit non esse, forma generanda habuit esse, ita quod suum esse mensuratur toto tempore precedenti et in instanti terminante tempus precedens habuit suum primum non esse" (*Questiones super VIII libros physicorum Aristotelis*. Venetiis, mandato heredum quondam domini Octaviani Scoti, 1520, *L. I, q. 8*, ff. 21 rb–21 va). John the Canon opposes Landulf's solution also in the fourth question of his first book (*op. cit.*, f. 13 va). The text of the edition has been checked from the MSS. Some questions from John the Canon's Commentary on the Physics occur in MS *Vienna*, Österreichische Nationalbibliothek 5460, attributed to the English Dominican Crathorn by V. Richter in his article 'Handschriftliches zu Crathorn', *Zeitschrift für katholische Theologie* 94 (1972), pp. 445–449. Question 6 in Richter's list corresponds in fact with John the Canon's fourth question of his first book, question 8 is John the Canon's first question of his sixth book, and question 9 can be found as question 6 in his fourth book on the Physics.

³¹ His arguments are found on ff. 148 vb–149 ra in MS *Erfurt*, Wissenschaftliche Bibliothek, Amploniana F. 178 in his question "Utrum contradictoria sint simul vera" (ff. 147bis va–149 va). He deals with the problem also e.g. in his commentary on *De Celo et Mundo* (*L. II, q. 33*) and on *Metaphysics* (*L. II, q. 5*).

³² See the commentaries on the Sentences of Francis of Marchia, *L. III, d. 3, q. 2* (MS *Naples*, Biblioteca Nazionale C VII 23, ff. 208 rb–209 rb), Michael of Massa, *L. II, d. 1, q. 1* (*secunda difficultas*) (MS Vat. lat. 1087, ff. 5 ra–6 va) and *L. II, q. 9* (*Additiones secundi* (*ibid.*, ff. 91 rb–94 vb). For the list of the questions of Michael's commentary, see D. Trapp, 'Notes on some Manuscripts of the Augustinian Michael de Massa' (+ 1337)

in *Augustinianum* 5 (1965), pp. 58 – 133. Francis of Meyronnes takes up the problem in many connections in his commentary on the Sentences (e.g. in the opening questions of his first book) and in his quodlibetal questions. This argument is given an extensive treatment also in William of Alnwick's question "Utrum tempus sit quantitas continua vel discreta" (MS *Firenze*, Biblioteca Nazionale Centrale I III 6, ff. 110 vb – 114 rb).

³³ "Contra istam solutionem et simul ad principale arguo secundo sic: Remoto omni eo quod est per accidens, nihil removetur de eo quod est per se. Sed totum tempus precedens generationem per accidens se habet ad eam, ergo eo remoto adhuc erit in instanti ultimo generatio, sed non sine suis terminis. Ergo in illo ultimo instanti erit esse et non esse, que sunt termini generationis. Maior patet. Minorem probo, quia ad mutationem instantaneam accidit quecumque mensuratio successiva. In toto enim tempore precedenti est alteratio sola, que accidit generationi propter dispositionem subiecti." The same argument is also in his *Erfurt* question, ff. 147 ra – 147 rb.

³⁴ "Tertio confirmatur propositum. Si deus faceret unum subiectum ultimate dispositum ad formam ignis nec esset necessaria alteratio disponens, si immediate applicaretur igni generanti in instanti, introduceretur forma ignis. Sed hoc esset per generationem de non esse ad esse, ergo in eodem instanti esset sub utroque. Maior patet, quia impassum ultimate dispositum generans sufficiens introduceret formam substantialem in instanti, alias generatio esset motus. Contra Philosophum, quinto Physicorum. Minor patet, quia introductio forme substantialis est per generationem." Cf. also the *Erfurt* question, f. 147 rb.

John Baconthorpe gives the argument as follows: "Item. In illo instanti in quo materia est in proxima dispositione ad formam, verum est dicere quod forma non est, quia si forma tunc esset, materia non esset in proxima dispositione ad formam, sed haberet eam, et in eodem instanti secundum diversum ordinem nature quo materia fit ultimate disposita verum est dicere quod forma est. Ergo in subita mutatione vel generatione termini oppositi sunt in eodem instanti, licet secundum diversum ordinem nature" (*L. III, d. 3, q. 2, art. 3, L. Saggi, ed. cit., pp. 234 – 235*).

³⁵ "Quinto sic. Si totum tempus precedens respondet pro mensura termino generationis a quo et ultimum instans quod immediate se habet ad illud tempus respondet pro mensura termino ad quem, quero, quid mensurat ipsam versionem, scilicet generationem, inter duos terminos. Aut tempus precedens, et hoc non, quia non esset instantanea, aut instans ultimum, et habeo propositum. Probatio, quia versio et mutatio non est terminus, immo acquisitio termini, cum sit eius productio. Sed pro omni signo, pro quo est productio termini, non est terminus, quia produceretur productum. Ergo in eodem indivisibili instanti pro diversis signis res non erit, quando productio est, et res erit, quando terminus est productus, et cessat productio." The *Erfurt* question has this argument, too, on f. 147 rb.

³⁶ "Secundus articulus est videre pro quo instanti indivisibili non sunt simul vera contradictoria. Et dico, quod illud instans est instans nature . . . Tertia propositio est videre, si instantia nature habeant adinvicem successionem vel simultatem. Et dico, quod nec hoc nec illud. Ubi nota, quod simultas et successio non competunt mensuris indivisibilibus, sed tantum divisibilibus. Sed mensuris indivisibilibus competit distinctio, et ideo duo signa vel instantia nature proprie nec sunt simul nec sibi succedunt, sed sunt due mensure indivisibiles mensurantes distincta entia permanentia . . ." see also the text in note 5 above. The *Erfurt* question has these arguments on ff. 147 vb – 147 bis ra.

³⁷ John the Canon opposes Landulf in his Commentary on the Physics in the following

way: "Ad aliam probationem dico de presenti quod esse prius natura non est esse prius in aliquo signo in quo non est posterius, licet oppositum dicat Landulphus. Sed esse prius natura non est aliud nisi presuppositio huius ab hoc in quadam alteritate nature, licet enim pater in divinis presupponitur a filio sicut generans presupponitur a genito, quia tamen sunt ambo eiusdem nature. Ideo communiter a doctoribus in divinis non ponitur prioritas nature, sed originis. In hoc solum differunt prioritas nature et originis, quia prioritas nature est presuppositio et dependentia huius ab hoc in quadam alteritate nature, originis vero in identitate nature. Et hoc nota diligenter. Frater autem Landulphus oppositum huius sentit. Dicit enim quod quecumque sunt priora natura, sic se habent quod unum est in aliquo signo in quo reliquum non est. Et ideo dicit quod contradictoria esse simul vera in eodem instanti temporis possunt, sed non nature." (Johannes Canonicus, *ed. cit.*, L. I, q. 4, f. 13 va). See also L. IV, qq. 6 and 8, ff. 45 vb – 50 rb. Similar arguments are also presented in MS Vat. lat. 1012 in an anonymously preserved question "Utrum in uno instanti reali possint assignari diversa signa" (ff. 93 ra – 94 va), and in the Commentary on the Sentences of Michael of Massa, L. II, d. 1, q. 2 "Utrum stando infra ambitum oppositionis contradictorie possint extrema contradictionis esse simul in eodem" (MS Vat. lat. 1087, ff. 5 ra–6 va).