

THE PHILOSOPHICAL CONTRIBUTIONS OF ANTON ERBER (1695-1746)

Ivan Boh

Philosophy in its essence is transnational and transcultural. Yet, there are at least two senses in which one may tie the concrete phenomenon of philosophizing to a national level. First, one may concentrate on philosophical efforts on a national territory—political or cultural—even though the agents themselves may not have been nationals but foreigners living and acting on the territory. Secondly, one may concentrate on the work of philosophers who are identified as nationals, whether living on the territory or outside of it. The two sorts of investigation are obviously not mutually exclusive and both are needed for a comprehensive understanding of philosophical activity of a given nation.

The present study clearly falls into the second category. The figure it deals with, Anton Erber, is identified as a Slovene, but one who was working outside the Slovene national territory, at two very important Austrian institutions, the Universities of Vienna and of Graz, in the first half of the eighteenth century.

The basic biographical notes can be found in the short entry written by Frane Jerman in *Enciklopedija Slovenije*¹ and in an earlier article by Alma Sodnik entitled "Filozof Anton Erber."² Given the ground-work by Sodnik, I will offer, in the first section of this paper, a brief recapitulation of her global assessment of Erber's philosophical opus. The subsequent sections will analyze some very specific features of Erber's work in one philosophical discipline, viz., logic. The concluding section will offer some generalized remarks about Erber's place in philosophy among the Slovenes.

1. Biographical and Bibliographical Notes

Anton Erber was born in Dole near Ljubljana in 1695, became member of the Jesuit Order, taught for four years at the College in Ljubljana, became professor of philosophy, law, and theology in Vienna and in Graz. At the latter institution he even served as chancellor. In 1744 he became rector of the College in Ljubljana. He died in 1746, in Ljubljana. He wrote on logic and on theoretical (as opposed to practical or moral) philosophy, that is, on ontology and natural philosophy.

1 Cf. *Enciklopedija Slovenije*, vol.3, 54, s.v. "Erber Anton." An account of Erber by F. Jerman is also given in his *Slovenska modroslovna pamet*, Ljubljana: Prešernova Družba, 1987, 26-27. One may also note J. Kos, *Oris filozofije* (2. izdaja), Ljubljana: Cankarjeva Založba, 1970, 284.

2 Cf. "Filozof Anton Erber", in *Izbrane Razprave* (zbral in uredil F. Jerman), Filozofska knjižnica, zvezek xvi, Ljubljana, Slovenska Matica, 1975, 229-241. In this pioneering article Sodnik states: "Gotovo je, da ne moremo prej misliti na sintezo te snovi [i.e. materials by Slovene philosophers], dokler podrobno ne poznamo posameznih del (231)." My present study of Erber's logico-philosophic contribution to the field was undertaken with the hope that it may serve as an element in an eventual formulation of a comprehensive history of Slovene philosophy.

As expected of the Jesuits, Erber subscribed to a version of scholastic philosophy rooted in the philosophy of Thomas Aquinas (1225?-1275) and Duns Scotus (1265?-1308?), the two giants of the Dominican and the Franciscan orders respectively, and in the philosophy of the prominent Spanish Jesuit Francisco Suarez (1548-1617). Sodnik acknowledges the heavy debt Erber owed to the earlier thinkers, but she also adds that Erber "went his own way."³ What she meant by these remarks is not that he was an eclectic but rather that he philosophized within the framework of the philosophy of the Jesuit order, i.e., along the Suarezian lines of development of scholasticism.

Sodnik notes three distinguishing features of Erber's philosophy. The first is his predilection for and extensive treatment of topics such as "the problem of universals, distinctions, theory of bodies, causes, and continuum."⁴ The second is his polemical stand against the basic position of Descartes, in particular "against Descartes' theory of bodies, the question of extension and its finite or infinite divisibility, the problem of motion, of sensible quantities, the concept of soul and the relation of soul and body, the concept of animal, the problem of the methodic doubt and its significance for the theory of knowledge..."⁵

The third distinguishing feature of Erber's philosophy noted by Sodnik is the particular method which he uses: "He states the problem, adds remarks to clarify concepts, then there follows the thesis, objections to it, and replies. To his own theses he adds the arguments of adversaries as objections and then offers his own definitive solutions."⁶ Sodnik is aware that this is basically a scholastic position but she thinks that it has sufficient modifications to count as a novelty, especially in its brevity of expression and pedagogically clear method. She adds that this may have been a result of the Jesuit accommodation to the humanist reform by adopting its practical method if not its anti-Aristotelian or anti-scholastic spirit.

2. A Conception of the History of Logic as the Point of Departure for Our Study

The primary works of Erber listed by Sodnik are *Institutiones dialecticae* (1750), and the three volumes of *Cursus philosophicus*: Tractatus I: *In universam logicam* (1750), Tractatus II: *In Physicam Generalem* (1750) and Tractatus III: *In Physicam Particularem* (1751).

For my present study I selected topics from the *Institutiones logicae* (in the 1761 reprint), and partly took into account the *Cursus Philosophicus*, Tractatus I: *In Universam Logicam*. My attempt is not to present a survey or an exposition of the most important topics that one would reasonably expect to be treated in a Jesuit manual in line of the idea of *ratio studiorum* of the Jesuit Order; from that point of view, Erber's work is simply a presentation of concepts or simple apprehensions, propositions

3 Izbrani spisi, 232.

4 Izbrani spisi, 232.

5 Izbrani spisi, 232.

6 Izbrani spisi, 233.

or judgments, and arguments or inferences. Instead, my selection and elaboration of topics is based on the idea of our own history of logic expressed by Bocheński as a cycle of rises and declines rather than a steady progression of qualitative and quantitative achievements.⁷

According to this idea, logic in the Western world achieved its rise and its first peak (actually a two-headed peak) in Aristotle's categorical and modal syllogistics and in the Megaric-Stoic theory of propositional logic.⁸ It declined during the period of 300 BC to about the 12th century when the logic of *proprietas terminorum* and the logic of consequences was rediscovered and the new peak was reached—in this case a single one, giving a proper place of priority to the theory of consequences and subordinating the syllogistic theory and in fact the whole term logic to consequence theory.⁹

This period of high-scholastic logic was followed by another period of decline, from about 1500 to the 1850s, during which—with the notable exception of Leibniz and Lambert—nothing exciting was going on in the field: the logic of the art of thinking of A. Arnauld¹⁰ and a variety of diluted stereotyped texts was transmitted and perpetuated in the new school-systems, and Kant's harsh pronouncement about the lack of progress in the field of logic could, in the light of this, be at least understood, although not condoned. We find a new rise of logic with George Boole, Augustus De Morgan, and others, during the second half of the 19th century, perhaps reaching a third peak in the three volumes of Russell Whitehead's *Principia Mathematica* (1910-13) and continuing in the developments of modal,¹¹ epistemic,¹² and deontic logic¹³ of our own decades. Many of the Anglo-American analytic moves in our century are seen to echo the disputes of Oxford, Paris, Padua, Heidelberg, Vienna, Prague, etc., of the 14th century. Yet achievements at this third peak of the history of logic are a genuine rediscovery, not a result of some secret textual transmission and subsequent development.

Given this conception of the history of logic in the West and noting a) the period, and b) the tradition within which Erber's work is located, I investigate, on the one hand, how much of solid logic matter has been lost by 1750 in a manual which is still within the scholastic tradition but

7 Cf. I.M. Bocheński, *History of Formal Logic* (tr. Ivo Thomas), New York: Chelsea Publ. Co., 1977, 2-23.

8 For an excellent early treatment of this period of the history of logic see Benson Mates, *Stoic Logic*, Berkeley: University of California Press, 1953. A very useful general introduction to the ancient schools of logic—as well as to the whole history of logic in the West—is William and Martha Kneale, *The Development of Logic*, Oxford: Clarendon Press, 1962.

9 Cf. P. Boehner, *Medieval Logic: An Outline of Its Development from 1250 to c. 1400*, Chicago University Press, 1952, es 77-96. Another early work on medieval logic from the point of view of modern formal logic is E. A. Moody, *Truth and Consequence in Mediaeval Logic* (Studies in Logic and the Foundations of Mathematics), Amsterdam: North-Holland, 1953.

10 A. Arnauld & P. Nicole, *La Logique, ou l'art de penser*, Paris, 1662.

11 One of the leading figures in the development of alethic modal logic was C. I. Lewis in his *Survey of Symbolic Logic*, Berkeley, 1918; and C. I. Lewis & C. H. Langford, *Symbolic Logic*, New York, 1932.

12 For an influential early work, see Jaakko Hintikka, *Knowledge and Belief*, Cornell University Press, 1962.

13 One of the pioneering works in the field is G. H. von Wright, *An Essay in Modal Logic*, Amsterdam: North-Holland, 1951.

struggling under the demands of humanism. On the other hand I look for the characteristic and innovative features of Erber's work which may be seen to be genuine advances in the discipline of logic and which have become part of our own twentieth-century logical corpus.

3. A Theory of Supposition

Let us start with an examination of the so-called supposition theory. Supposition is one of the seven properties of terms recognized by Erber, and it may be understood as the manner in which categorematic terms, when used in propositions, stand for "things."

Of special philosophical significance is Erber's first division of supposition into simple and personal. "*Simple supposition* is an acceptance of a term for the thing as subject of some cognition...; e.g. in 'Animal is a genus' the term 'animal' (*ly animal*) is taken for animal as subject of a cognition which abstracts animal and its differences."¹⁴ As opposed to this, a term has *personal supposition* when it is taken for the thing as it exists in reality; for example, "when I say, 'An animal is living', the term 'animal' is taken for animal as it exists, living independently of any operation of the mind."¹⁵ It is clear that the issue here is at least in part ontological (what kinds of entity are being referred to?). However, we note here only one very important formal consequence of the distinction, viz., that we may not make an inference from 'Animal is a genus' to 'Man is a genus,' while we may make it from 'An animal is living' to 'A man is living.'

This brings us to a further sub-division of *suppositio*, dividing personal supposition into singular and common; 'Peter' in 'Peter is running' has *singular supposition*, whereas 'man' in 'A man is running' has *general (communis) personal supposition*. Proper names, demonstrative pronouns, and definite descriptive phrases (or ostensive uses of common terms) would seem to be typical cases of terms with singular supposition.¹⁶

Erber's next division is that of a general personal supposition into distributive, conjunctive, determinate, and indeterminate.¹⁷ A general term has *distributive supposition* if it is preceded by a syncategorematic sign 'every' (*omnis*), or its equivalent, which makes the term in a proposition stand for all individual members of its extension. The example he gives, 'Every man is an animal', is clear, since the general term 'man' is used (conjunctively) for each individual man, but his remark that it is 'every man' (*ly omnis homo*) rather than 'man' (*ly homo*) is curious. The term 'man' is general or common (*communis*) independently of any determination: its associated concept is 'living, sentient, rational substance or thing.' For how many—if any—individuals is the term used to stand, and how it stands for them, depends on the syncategorematic terms such as 'every' (*omnis*), 'some'

14 "Simplex [suppositio] est acceptio termini pro re, prout substante alicui cognitioni, ut cum dico: *Animal est genus; ly animal* accipitur pro animali, prout substante cognitioni abstrahenti animal a suis differentiis." (*Institutiones dialecticae*, # 56, 46).

15 "Personalis [suppositio] est acceptio termini pro re, prout existit a parte rei, ut cum dico: *animal est vivens; ly animal* accipitur pro animali prout existit [sic] a parte rei: cum independenter ab omni operatione intellectus sit vivens." (*Inst.*, # 56, 46).

16 *Inst.*, # 57, 46f.

17 *Inst.*, # 57, 47.

(*aliquis*) in which it occurs. However, it is not 'every man' (*ly omnis homo*) but 'man' (*ly homo*) which qualifies as categorematic term which is the only kind that can have the property of supposition at all. From what I gather in the sequel of Erber's text, the talk of 'every man' as a term is merely an unfortunate slip, but I am aware of the possibility of such a parsing of sentences and formulation of terms since it is discussed by the prominent Oxford philosopher Peter Geach in his *Reference and Generality*.¹⁸ Were it not for the rest of Erber's text, I would have to concede that Erber could be construed as forging on this point a new analysis rather than as merely presenting the best medieval one.

Assuming that *a, b, c*, etc. are individual constants and 'F', 'G', etc. common terms, we can depict Erber's idea of distributive supposition by the following descent to singulars:

'Every F is G, therefore Fa is G and Fb is G and Fc is G, etc.'

Alternatively we could think of a scheme in which F1, F2, etc. and G1, G2, etc. are construed as ostensive uses of common terms and offer the descent to singulars in this manner:

'Every F is G, therefore F1 is G and F2 is G, etc.'

And, making a disjunctive descent under the predicate term 'G' we get F1 is (G1 or G2) and F2 is (G1 or G2), etc.

Of course one could argue that if we restrict the universe of individuals to a finite realm, say $\{a, b, c\}$, the analysis of 'Every F is G' in terms of conjunction of corresponding singular propositions, is in fact a logical equivalence and not merely a one way implication; however, Erber explicitly speaks of descent to singulars only, and not of equipollence (which he reserves for more familiar principles of the Square of Opposition, Conversion, Obversion, etc..)

Erber has some interesting classes of cases still falling under distributive conjunctive supposition which I cannot go into. Likewise, I cannot discuss here what he calls "copulative" supposition, except to point out that this is simply the case of a collective use of term with universal quantifier, as in 'All the apostles are twelve' where obviously no descent to singulars is allowed. What must be explained here is one other member of his last subdivision, the so-called "determinate" or "disjunctive" supposition. Schematically,

'Some F is G, therefore F1 is G or F2 is G, etc.'

In studying his discussion of the question how we find out what kind of supposition a term has, we find Erber in fact offering enough clues as to the supposition of predicate terms. He states, for example, purely formal conditions for supposition of predicate terms of universal affirmative or A-proposition: "If common terms are affected by (*afficiantur*) an affirmative sign of universality, then the common term proximate to the sign of universality has distributive supposition while the remote common term has

18 At this point it may be very useful to consult Peter T. Geach, *Reference and Generality: An Examination of Some Medieval and Modern Theories*, Cornell University Press, 3rd ed., 1980.

determinate supposition, as in 'Every man is an animal' in which 'man' has distributive and 'animal' determinate supposition.¹⁹ Schematically,

'Every F is G, therefore F1 is (G1 or G2 or G3) and F2 is (G1 or G2 or G3) and F3 is (G1 or G2 or G3)....'

Distributing over the consequent-side we get a conjunction of disjunctions:

'Every F is G, therefore (F1 is G1 or F1 is G2 or F1 is G3) and (F2 is G1 or F2 is G2 or F2 is G3) and (F3 is G1 or F3 is G2 or F3 is G3)....'

Erber offers a similar analysis of universal negative or E-proposition: "If a general term is affected by a negative sign of universality, both the proximate and the remote term have distributive supposition."²⁰ Schematically,

'No F is G, therefore F1 is (not G1 & not G2 & not G3), and F2 is (not G1 and not G2 and not G3), and F3 is (not G1 and not G2 and not G3).'

Distributing over 'is' we get a conjunction of conjunctions:

'(F1 is not G1 and F1 is not G2 and F1 is not G3) and (F2 is not G1 and F2 is not G2 and F2 is not G3) and, etc..'

Descent for particular negative or O-propositions is sanctioned by the claim that the predicate in such propositions has distributive supposition while the subject terms of both particular affirmative and particular negative proposition have determinate supposition:

'Some S is not P, therefore (S1 is not P1 and not P2 and not P3) or (S2 is not P1 and not P2 and not P3), or...;

fully distributing over 'is' we get:

'(S1 is not P1 and S1 is not P2 and S1 is not P3) or (S2 is not P1 and S2 is not P2 and S2 is not P3) or...'

In particular affirmative or I-propositions both 'S' and 'P' term have determinate supposition:

'Some S is P, therefore S1 is (P1 or P2 or P3) or (S2 is (P1 or P2 or P3) or...etc..'

We have obtained these inferences on the basis of Erber's characterization of various types of supposition. If there were any doubt about their legitimacy, it would be dispelled by Erber's special treatment of descent and ascent in *Institutiones Dialecticae*, Pars I, a. 8. He also discusses several other properties of terms so characteristic of the summu- lists William Sherwood, Peter of Spain, Lambert of Auxerre, and the whole subsequent medieval tradition through William of Ockham (d. 1349) and beyond; properties such as ampliation, restriction, appellation, etc.. However, we must now move on to another cluster of interesting topics from the realm of proposition or judgment.

19 "Si terminus communis afficiatur syncategoremate universali affirmativo, terminus communis huic signo proximus supponit distributive; remotus determinate; ut *omnis homo est animal*, ubi *homo* supponit distributive, *animal* determinate." (*Inst.* f# 65, 52)

20 "Si terminus communis afficiatur syncategoremate universali negativo, uterque terminus tam proximus quam remotus supponit distributive." (*Inst.* # 65, 52)

4. Elements of the Logic of Propositions

As expected, Erber preserves the tradition of dividing propositions into simple and composite, and dividing the composite ones further into conjunctive, disjunctive, causal, and conditional propositions. We have just seen that one of the characteristic medieval theories, i.e., of properties of terms, is well preserved by Erber. We shall now investigate how much of the other important part of logic, the theory of propositions, Erber found to be worthwhile cultivating in the "humanistic" university curricula of his times.

It must be pointed out that there is no special chapter on propositional logic as a general theory of deduction to be found in Erber, either in his *Institutiones Dialecticae* or in his *Cursus Philosophicus*. This means that we will have to be on the lookout for elements of such a theory in the contexts where he discusses compound propositions, immediate inferences, etc.. Our plan here is to record what might be pertinent to this topic and then draw conclusions on the matter.

First, let us observe that Erber defines *composite proposition* strictly formally as "one consisting of two or more simple propositions connected to one another in a certain manner."²¹ He lists four types of syncategorematic signs which are in fact propositional rather than term functors:

- (1) the particle 'and' forming a conjunctive (*copulativa*) proposition. Example: 'Peter is striving and Peter is sleeping';
- (2) the disjunction particles 'or' (*vel*) and 'either...or' (*aut...aut*), forming disjunctive proposition (*disjunctiva*). Example: 'Either (*aut*) Christ is mistaken or else (*aut*) the world will perish';
- (3) the causal particle 'because' (*quia, quoniam*), forming causal propositions. Example: 'Because men do not fear God, they do not avoid sin'; and
- (4) the particles 'if' (*si*) and 'when' (*quando*), forming conditionals or hypotheticals; they are called so because they declare something about something under some condition or hypothesis. Example: 'If you do penitence, you will be saved.'

It is difficult to decide whether any of these compound statements were intended to be interpreted truth-functionally. Even the conjunction suggests something more than mere claim of truth of both components as a necessary and sufficient condition for its truth. His comments at # 146 confirm our suspicion. He states: "For truth of a conjunctive proposition truth of all component propositions is required [i.e., we can safely assert one-way implication as a statement of necessary condition for truth of a conjunctive proposition: $T'P \& Q' \rightarrow (T'P' \& T'Q')$]; hence, a conjunctive proposition will be false if even a single component is false" [i.e., $F'P' \rightarrow F'P \& Q'$ is also a logical principle].²² Surprisingly Erber adds at this point that a conjunction

21 "[Propositio] composita est, quae constat duabus, vel pluribus propositionibus simplicibus certo modo inter se connexis." (*Inst.*, # 91, 70)

22 "Nota secundo: Ad veritatem propositionis copulativae requiri veritatem singularum propositionum simplicium; unde falsa erit tota, si vel unica ex simplicibus sit falsa." (# 146, 106)

affirms the conjuncts in a composite sense (*pro sensu composito*) and one could not speak of conjunction being true according to one part and false according to another part. It seems that some quasi-modal requirement is attached to the sufficient conditions for a conjunction.

As for disjunctive proposition, we may wonder whether the one formed with *vel* is weak and inclusive, and the one formed with *aut...aut* is strong and exclusive, but again Erber comes to rescue. At # 147 we find the following statement: "For truth of a disjunction it is sufficient that one of the simple component propositions be true; hence, for its falsehood it is required that (all) singular propositions be false."²³ We can of course also learn about Erber's understanding of disjunction by reflecting on what kinds of inferences based on a disjunctive premise he allows, or disallows.

Regarding causal propositions it is safe to say that they are not truth-functional in anyone's system, so we should not expect them to be such by Erber. He says that for truth of causal proposition three things are required: first, that what is assumed to be the case be in fact true; secondly, that what is stated as caused be true, and thirdly that what is assumed to be the cause have with respect to the caused at least an illative relation of some cause: for a causal proposition asserts all these things. Erber gives examples of three causal propositions which fail to meet one or another of these three requirements: 1) Because Peter is an Apostle, he is rational; 2) Because God had prohibited it, Adam did not eat from the tree; and 3) Because the sun is shining, the stick stands in the corner.²⁴

Finally, the conditional formed with 'if' is undoubtedly stronger than truth-functional, stating a connection—possibly a modal one—between the antecedent and the consequent that goes beyond the claim that the antecedent is not true without the consequent. However, it is interesting that Erber either totally identified temporal propositions formed with *quando* with conditional propositions formed with *si*, or else left the room for a weak, almost truth-functional, sense of conditional in addition to the stronger, modalized or connexive sense.

Erber's discussion of conditionals is occasionally couched in terms of theology, such as freedom, choice, foreknowledge, and providence. The following paragraph is very instructive: "For the truth of a conditional proposition (*propositio conditionata*) it suffices that the conditioned object passes over absolutely in a purified condition, even though that will never happen in reality, for surely the condition will never be so purified. Hence, this proposition is true: 'If Peter had assistance A, he would consent to it'; but Peter, in the case in which he would have assistance A, would place under his consent, even though as a matter of fact (*re ipsa*) he is never going to posit, for surely he is never going to have assistance A. But whether for truth of a conditioned proposition it is required over and above this that the

23 "Nota tertio: Ad veritatem propositionis disjunctivae sufficere veritatem unius propositionis simplicis; unde ut sit falsa debent singulae esse falsae." (# 147, 106)

24 "Nota quarto: Ad veritatem propositionis causalis tria requiri; primo, ut verum sit illud quod assumitur pro causa; secundo, ut verum sit illud quod enunciat ut causatum; tertio, ut illud, quod assumitur pro causa, habeat respectu causati rationem alicuius causae saltem illativae; quia omnia haec a propositione causali affirmantur." (# 148, 106f.)

condition be conducive to the conditioned or at least that it have some connection with it is disputed by Theologians, and those things in which a condition of this sort is found they call propositions conditioned under the conducting condition (*conditionatas sub conditione conducente*); and such is the aforementioned proposition. And they call propositions conditioned under the disparate condition disparate, and such is this one: "If the Turk were dancing at Constantinople, Peter would have been converted in Vienna."²⁵

Some additional light on the nature of conditionals is shed by Erber in his discussion of truth of those propositions which are not in contingent but in necessary matter. If 'S is P' is in necessary matter, such a proposition is equivalent to an existentially conditional proposition in that the predicate 'P' applies to the subject 'S' *ex suppositione*, that is, on the assumption that the subject exist, even though it in fact did not exist nor ever will exist. "The reason is that nothing else is asserted than a necessary connection between the predicate and the subject, and that the connection would be sufficiently verified in that the predicate would apply to the subject just as if this subjected thing existed, even if in the nature of things it did not exist... The proposition 'The Antichrist is rational animal' should be resolved into this hypothetical proposition, "If the Antichrist exists, it is rational animal."²⁶ The conditional with this strong connection would certainly not be simply a material or truth-functional conditional represented by our ' $P \rightarrow Q$.'

Likewise for negative propositions in necessary matter: 'A goat is not a stag' is "resolved into" this conditional, 'If a goat exists, it is not a stag' $[(x)(Sx \rightarrow -Px)]$.²⁷

But then comes a surprising claim: Erber says that contraries should not be able to be both true *in any matter*. Let us see why this claim is surprising. Erber's doctrine of conditionals is this. He seems to have a place for temporalized conditionals 'When P, Q', which could be represented as simply claiming that ' $P \rightarrow Q$ ' in the sense of ' $-(P \& -Q)$ '; i.e. they could be treated as material conditionals. He also had a place for stronger conditionals, modalized or connexive in character. We could conceivably treat

25 "Nota quinto: Ad veritatem propositionis conditionatae sufficere, si obiectum conditionatum transeat in absolutum purificata conditione, etsi illud re ipsa numquam fiat; quia nimirum numquam purificatur conditio: unde vera est haec: *si Petrus haberet auxilium A, eidem consentiret*: modo Petrus in casu, quo haberet auxilium A, poneret sub illo consensum, etsi illud re ipsa numquam sit: quia nimirum numquam habebit auxilium A. Utrum autem ad veritatem conditionatae insuper requiratur, ut conditio conducat ad conditionatum, vel saltem aliquam cum illo habeat connexionem; disputant theologi, et illas quidem, in quibus ejusmodi conditio reperitur vocant conditionas sub conditione conducente, qualis est praedicta propositio; alias vero conditionatas sub conditione disparata appellant disparatas, qualis est ista: *Si Turca Constantinopoli saltaret; Petrus Viennae converteretur*." (# 149, 107f.)

26 "Ratio est; quia nihil aliud affirmatur, quam necessaria connexio inter praedicatum, et subjectum, quae connexio sufficienter verificatur per hoc, quod praedicatum conveniat subjecto, hoc ipso, quod illud existat, etsi re ipsa non existat; atque in hoc fundatur illud principium, quod in propositionibus necessariis *ly est* accipiatur praecise in vi copulae; adeoque haec propositio: *Antichristus est animal rationale*, resolvatur in hanc hypotheticam, sive conditionalem: *si Antichristus existit, est animal rationale*." (# 107, 81)

27 Cf. # 108, 82: "Per ejusmodi propositiones nihil aliud significatur, quam repugnantia inter praedicatum, et subjectum quae sufficienter verificatur per hoc, quod distinguatur ex suppositione quod existant. Unde haec propositio: *Hircus non est cervus*; resolvitur similiter in hanc conditionalem: *Si Hircus existit [sic], non est cervus*."

them as strict conditionals, i.e. ' $P \rightarrow Q$ ' in the sense of ' $\neg M(P \ \& \ \neg Q)$.' But if we linked conditionals, as we do nowadays, with a non-existential interpretation of universal categorical propositions and reduce 'All S are P' to the form ' $(x)(Sx \rightarrow Px)$ ' and 'No S is P' to ' $(x)(Sx \rightarrow \neg Px)$ ', we are in trouble. On modern view, if there are no S, i.e. if the antecedent of our generalized conditionals turn out not to be satisfied by anything, both universal affirmative and universal negative propositions turn out to be true. They are not contraries at all if by definition two propositions are contraries if and only if they could not both be true although they could both be false. As Brentano, much later, saw very clearly, if there are no S at all, then it is true that there are no S which are P and likewise no S which are not P. But we saw that Erber denies that two such propositions could ever be both true in necessary matter. The reason is that in Erber's view of conditionals the connection between the antecedent and the consequent, just as that between S and P in categoricals, is the very theme of assertion. The existence of individuals which are S is not pertinent at all since S is a supposition only in an imaginative sense.

One of the more perplexing views proposed by Erber is "that a conjunctive proposition is equivalent to a universal one and that a disjunctive proposition is equivalent to a particular one."²⁸ At first it may seem that he is anticipating the twentieth-century model universe interpretation of quantified statements. Thus, in a domain of three individuals $\{a, b, c\}$, $(x)Fx \equiv (Fa \ \& \ Fb \ \& \ Fc)$ and $(Ex)Fx \equiv (Fa \ \vee \ Fb \ \vee \ Fc)$. However, Erber was apparently not motivated by a desire to eliminate quantifiers in favor of extensional domains; he was concerned at this juncture with contradictory and contrary opposites of quantified propositions, and he observed a certain parallel between conjunctions and disjunctions, and universal and particular propositions respectively. His terminology of # 150 is misleading, but Table 3 in the Appendix is given to illustrate what he means, and is indeed successful. First his text: "To an affirmative conjunctive proposition the contradictory opposite is a negative disjunction; and the contrary opposite is a negative conjunction. To a negative conjunction the contradictory opposite is an affirmative disjunction and the contrary opposite is an affirmative conjunction."²⁹ The first sentence misleadingly suggests that ' $P \ \& \ Q$ ' and ' $\neg(P \ \vee \ Q)$ ' are contradictories, the second that ' $P \ \& \ Q$ ' and ' $\neg(P \ \& \ Q)$ ' are contraries, the third that ' $\neg(P \ \& \ Q)$ ' and ' $P \ \vee \ Q$ ' are contradictories and the fourth that ' $\neg(P \ \vee \ Q)$ ' and ' $P \ \& \ Q$ ' are contraries. As it stands, this is obviously incorrect. Fortunately Erber provides Table 3 in the Appendix, and he refers us to that Table for illustration. It becomes clear that what he has apprehended is that if we place ' $P \ \& \ Q$ ', ' $\neg P \ \& \ \neg Q$ ', ' $P \ \vee \ Q$ ' and ' $\neg P \ \vee \ \neg Q$ ' in the normal corners for A, E, I and O propositions, respectively, on the Square of Opposition, all the laws of Opposition would be preserved: ' $P \ \&$

28 "Nota sexto: Propositionem copulativam aequivalere universali, et disjunctivam particulari: unde eadem proportionaliter est oppositio propositionum copulativarum, et disjunctivarum, quae universalium et particularium." (# 150, 108)

29 "Copulativae affirmativae opponitur contradictorie negativa disjunctiva; contrarie negativa copulativa; copulativae negativae opponitur contradictorie affirmativa disjunctiva; contrarie affirmativa copulativa." (# 150, 108)

Q ' and ' $\neg P \vee \neg Q$ ' would be contradictories, and likewise ' $\neg P \& \neg Q$ ' and ' $P \vee Q$ '; ' $P \& Q$ ' and ' $\neg P \& \neg Q$ ' would be contraries; while ' $P \vee Q$ ' and ' $\neg P \vee \neg Q$ ' would be subcontraries. Moreover, ' $P \& Q$ ' entails ' $P \vee Q$ ' and ' $\neg P \& \neg Q$ ' entails ' $\neg P \vee \neg Q$ '.

It may be mentioned that in TABLE 3, both quantified propositions ('All men are running') and singular propositions ('Peter is running') and their negations are used to illustrate his point. Thus, Erber does not offer an analysis of quantifiers, but he does show at least a *de facto* awareness of the so-called De Morgan laws.³⁰

We should also study his TABLE 1 on the basis of which one could affirm the following equipollences of quantifiers (given that $A \equiv \equiv \neg O$ and $E \equiv \equiv \neg I$):

$$\begin{array}{ll} (x) \equiv \equiv \neg(Ex)- & \neg(x) \equiv \equiv (Ex)- \\ (Ex) \equiv \equiv \neg(x)- & \neg(Ex) \equiv \equiv (x)- \end{array}$$

5. General Theory of Consequence

Although we look in vain for a special chapter on the general theory of consequence in Erber's works, we do find *some* elements of this very important doctrine which can serve as a clue to the reconstruction of the idea. In his *Institutiones Dialecticae*, Pars iii, a.3, pp.118-122, Erber offers the standard division of argument into four species: syllogism, enthymeme, induction, and example. He describes 'enthymeme' as 'an argument in which from one proposition another one is inferred.' Example: 'Peter is a man, therefore he is an animal.' And he uses the typical terminology of consequence-theory, saying that the proposition which implies another one is the antecedent and that the one inferred is the consequent.³¹ Consequence, then, is seen by him occasionally to be the same as 'enthymematic argument', i.e. an argument in which a premise is suppressed as self-evident.

We find a further characterization of consequence in # 175, where Erber explains both the ingredients of inference and the relevant terminology: "Note that three things are to be found in any argumentation: that from which something is inferred, that which is inferred, and the connection of one with the other. The first, if it is a single proposition, is called the antecedent, if it consists of two propositions, we speak of premises. The second is called the consequent. The third is the consequence. Hence, these are very different things: consequent and consequence; just as the inferred and the inference."³²

Erber stresses the fact that a consequent may be false even while the consequence is sound (*bona*). He offers an example: 'Peter has wings; therefore he can fly.' It may also happen conversely, that the consequent is

30 Cf. P. Boehner, "Bemerkungen zur Geschichte der De Morganschen Gesetze in der Scholastik", *Archiv fur Philosophie* 4 (1951), 113-146.

31 "Quid est Enthymema?... Est argumentatio, in qua ex una propositione infertur altera, ut *Petrus est homo; ergo est animal*. Ex quibus prima propositio dicitur antecedens, secunda consequens." (# 168, 119)

32 "Nota primo: In omni argumentatione tria reperiri: illud, ex quo aliquid infertur, illud, quod infertur, et connexionem unius cum altero. Primum, si sit unica propositio, dicitur antecedens, si duae, praemissae; secundum dicitur consequens, tertium consequentia. Unde, aliud est consequens, aliud consequentia: sicut aliud est illatum, aliud illatio." (# 175, p122)

true but the consequence unsound (*mala*). His example of this is: 'The sun is shining, therefore the stick stands in the corner.' The reason behind both cases is the same: It is the question of connection or lack of it between the antecedent and the consequent. The connection should obviously not be construed as a real relation but a logical one which may hold even between countefactualities, 'Peter has wings' and 'Peter can fly.'³³

Erber recognizes some curious features of consequence as opposed to consequent: 'A consequence could never have its senses distinguished (*numquam distingui posse*); only a consequent can [have its senses distinguished]. The reason is that a consequence consists of what is indivisible, that is, in the connection of the antecedent and the consequent; and this either obtains, (and then the consequence is simply to be granted) or else it does not obtain (and it is then simply to be denied). On the contrary, a consequent could have several senses, and it is then possible for the connection to obtain between the antecedent and the consequent in one sense but not in another sense of the consequent.'³⁴

Erber's division of 'sound consequence' is into three sub-species. It can be sound (a) materially only, (b) formally only, (c) both materially and formally. Example of the first: 'Peter is an animal, therefore he is a man.' A counterexample: 'A horse is an animal, therefore it is a man.' Example of the second: 'Every A is B, every C is A; therefore every C is B.' Example of the third: 'Every animal is a substance, every man is an animal; therefore every man is a substance.'³⁵

There are structural features of Erber's view regarding the nature of consequence resembling those of Ralph Strode (d. 1387) and the later British tradition as cultivated at north-Italian universities, especially Padua, during the 15th century. Instead of an appeal to alethic modal notions when defining consequence relation [e.g. 'P infers Q' if $\neg M(P \ \& \ \neg Q)$], Strode speaks of illation in a way suggestive of identity of "understandings", that is, of the consequent "being understood in" the antecedent.³⁶ Erber says the following: "When illation is formally sound, as happens in all correct syllogisms, when the premises are simply granted, one cannot distinguish the consequent from them. The reason is because when the illation is formally sound, then for that reason the identity of the two extremes is affirmed in the conclusion; for in the premises the identity of the two extremes with a

33 Cf. # 176, 122f.

34 "Nota tertio: Consequentiam nunquam distingui posse, sed tantum consequens. Ratio est: quia consequentia consistit in indivisibili; in connexionem nimirum antecedentis cum consequenti, quae vel datur, et tunc consequentia est simpliciter concedenda, vel non datur, et tunc est simpliciter neganda. E contra, consequens potest habere plures sensus, darique connexio antecedentis cum consequenti, si hoc accipiatur in altero sensu. In tali igitur casu debet distingui consequens et concedi consequentia." (# 177, 123)

35 Cf. # 178, 124.

36 Strode's definition of consequence sound *de forma*: "Consequentia bona de forma dicitur cuius si sicut adequate significatur per antecedens intelligitur, sicut etiam adequate significatur per consequentem intelligitur; ut si quis intelligit te esse hominem, intelliget te esse animal. Et ideo dicitur quod in tali consequentia consequens est de formali intellectu antecedentis." *Consequentiae*. Ed. by W. K. Seaton, Berkeley: University of California Diss., 1973, 2.

common third thing is affirmed without there being any distinction between them.¹³⁷

While this meager content of Erber's *Institutiones Dialecticae* is a far cry from scholastic theories at their best, it is nevertheless a semblance of transition to the rediscovery of propositional logic and theory of deduction in our own century.

The Ohio State University

BIBLIOGRAPHY

Institutiones dialecticae. Viennae 1750, 8, 140 pp., reprint Tyrnaviae, 1761.

Cursus philosophicus (3 vols.): Tractatus I: *In universam logicam*, Viennae 1750 (475 pp.); Tractatus II: *In Physicam Generalem*, Viennae 1750 (466 pp.); Tractatus III: *In Physicam Particularem*, Viennae 1751 (386 pp.) 8, Typis J.T. Trattner.

POVZETEK

FILOZOFSKI DOPRINOS ANTONA ERBERJA

Anton Erber (1695-1746), Slovenec, znanstvenik, član jezuitskega reda in profesor na dunajski in graški univerzi, je obravnaval logiko na dveh ravneh: v Institutiones Logicae predstavi predmet v obliki sistematičnega uvoda v znanost o kriterijih doslednega izvajanja; v prvem zvezku svojega monumentalnega dela Cursus Philosophicus pa razpravlja globlje o filozofskih problemih logike. Obe razpravi sta zamišljeni v neo-scholastični tradiciji, a njegova izbira specifičnih tem in problemov ter pedagoški način predvajanja očitno odraža težnje humanističnega programa na univerzah v prvi polovici 18. stoletja. Avtor tega članka izhaja s stališča Bocheñskega, da zgodovina logike ni linearni razvoj znanosti o človeškem razumu, marveč nekakšna serija periodičnih razumskih zagonov, katerih vsak naj bi imel svojo lastno problematiko, z vrhuncem, in eventualnim zastojem vse dokler se ne pojavi naslednja različica ali zvrst logike. Tako najdemo (i) aristotelsko obdelavo logike pojmov ter stoično-megarsko predstavo propozicionalne logike v 4. in 3. stoletju pred našim štetjem; (ii) logiko lastnosti terminov in logiko konsekvanc v 13., 14. in 15. stoletju našega štetja; ter (iii) formalizirano logiko ali logistiko, skupaj z obdelavo metalogičnih teoremov, v 20. stoletju. S tega vidika sledi, da spada delo Erberja v eno izmed dolgih period zastoja, torej v vmesno stopnjo med srednjeveško in moderno različico logike. Prispevek skuša ugotoviti najvažnejše sestavine, ki naj bi preostale - čeprav morda v 'humanistični preobleki' - s samega vrhunca srednjeveške logike, in morebitne elemente, ki naj bi bili naperjeni v smer logistike. Čeprav so najdbe v obeh ozirih sorazmeroma skromne, so vendarle dovolj važne za morebitno izčrpno obdelavo logike pri Slovencih.

37 "Quando illatio est formaliter bona, uti erit in omni syllogismo recto, concessis simpliciter praemissis non posse distingui consequens. Ratio est: quia, quando illatio est formaliter bona, tunc ideo in conclusione affirmatur identitas duorum extremorum inter se; quia in praemissis affirmata est identitas duorum extremorum cum uno tertio absque omni distinctione." (# 179, 125)