

Johannes Bernhardi on Method

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I Introduction

Interest in the origin of the modern scientific method has resulted in a large discussion on the concept of *method* in 16th-century philosophy. Most of this discussion has centered on the role of Paduan Aristotelianism and its method of *regressus* developed during the late 16th century. Before the introduction of the *regressus* method, the term *method* (Gr. *methodos*, Lat. *methodos* or *methodus*) had already been used in manifold ways, and several writers had defined it as a pivotal concept in their philosophical analysis.¹ Perhaps the most influential among the early non-regressive methods was Philip Melanchthon's (1497–1560) approach, which has been called the Lutheran method and has earned him the honorary title of *artifex methodi*.²

Melanchthon's considered method as means of teaching reliably and effectively.³ However, Melanchthon was not the only person in Wittenberg who

- 1 Cf. H.C. KUHN, Non-Regressive Methods (and the Emergence of Modern Science) (in: *Method and Order in Renaissance Philosophy of Nature: The Aristotle Commentary Tradition*, ed. by D.A. DI LISCIA/E. KESSLER/C. METHUEN, 1997, 319–336).
- 2 Cf. *ibid.*, 322–324. For a more comprehensive account of Melanchthon's concept of method, see S. KUSUKAWA, *Vinculum concordiae: Lutheran Method by Philip Melanchthon* (in: *Method and Order* [see n. 1], 337–354).
- 3 In particular from the works *De dialectica libri quattuor* (1529, on dating the work, see N. KUROPKA, Philipp Melanchthon. Wissenschaft und Gesellschaft, 2002, 262) and *Erotemata dialectices* (1547). See W.J. ONG, *Ramus. Method and the Decay of Dialogue*, 1983,

was interested in the subject during the early 1530s. His student and close collaborator Johannes Bernhardi of Feldkirch (1490–1534) elaborated significantly the Lutheran method in works written shortly before his untimely death in 1534. Although Bernhardi's philosophical works were not published during his lifetime, he became widely known among his contemporaries and succeeding generations of European scholars through several posthumous works under his Latinized name Johannes Velcurio (Veltkirchius).⁴

Whereas logic (or dialectic as it was also called) was crucial to Melanchthon's understanding of method, Bernhardi never wrote a treatise on the subject.⁵ Neither did he apply the Lutheran Method in the context of textbooks on ethics, politics and theology as Melanchthon did.⁶ Instead, Bernhardi discussed the concept of method in the context of teaching natural philosophy. His textbook on natural philosophy was published under the name *Epitomae physicae libri quatuor* (1538) several years before Mel-

236–239; KUSUKAWA, *Vinculum concordiae* (see n. 2). See also KUROPKA (31–40.171–187.207–210) on Melanchthon's methodology and its applications. According to Kuropka, methodological considerations were of utmost importance to Melanchthon following his revision of the textbook of dialectic from 1529. Kuropka (32) summarizes Melanchthon's understanding of method both as a universal logical methodology and as the basis of an individual »science« (Wissenschaft): »Unter *methodus* fasst Melanchthon zwei verschiedene Bedeutungen zusammen: zum einen die Dialektik als Grundlage allen wissenschaftlichen Redens und zum anderen die Grundrisse der verschiedenen Wissenschaftszweige.«

4 Johannes Bernhardi was born in 1490 in the village of Schlins in Vorarlberg, Austria. He was called *Veltkirchius* or *Velcurio* in accordance with the nearby city of Feldkirch. Bernhardi matriculated at the University of Wittenberg in 1512 and took a master's degree in the Faculty of Arts in 1519. Very little is known of his subsequent career at the university, where he has been said to have acted as a professor of rhetoric and natural philosophy before his death in Wittenberg in 1534. He was a close friend of both Luther and Melanchthon, and already in 1520 a partisan of the Lutheran Reformation, as he wrote a defense of Luther against the Leipzig Franciscan theologian Augustin Alvelt. On Bernhardi's life and works, see H. SCHEIBLE/C. SCHNEIDER, *Melanchthons Briefwechsel* (MBW), Bd. 11: Personen A–E, 2003, 145 f.

5 On the importance of dialectic in Melanchthon's concept of method, see KUROPKA (see n. 3), 33 f.

6 For Melanchthon, see *ibid.*, 34–40.176–187.

anchthon's first publication on the subject, the *Commentarius de anima* (1540).⁷

Perhaps more importantly, Bernhardi used and developed the concept of method in a commentary on one of the Renaissance's most influential textbooks, the *De duplici copia verborum ac rerum* (1512) of Erasmus of Rotterdam (1466/69–1536).⁸ In this commentary the method is related to a wider scope of creating discourses for teaching various kinds of knowledge.

Bernhardi's commentary on *De duplici copia* spread widely. At the request of Melanchthon, the commentary was published immediately after his death and was subsequently printed in several editions of Erasmus' work until the early 17th century.⁹ A consideration of this source brings substantial new insights to the question of applying the method in various academic disciplines through the art of rhetoric, which was initially drafted by Melanchthon in his *Elementorum rhetorices libri duo* (1531).¹⁰ In what

7 JOHANNES BERNHARDI, *Epitomae physicae libri quatuor*, Erfurt 1538. This is the first complete printing of the work. Part of the textbook, the psychological content of the work, had already been printed the previous year in Basel (JOHANNES BERNHARDI, *In philosophiae naturalis partem omnium praestantissimam, hoc est Aristotelis de Anima libros, epitome longè doctissima*, Basel 1537). On Melanchthon's psychological treatises, see S. SALATOWSKY, *De anima. Die Rezeption der aristotelischen Psychologie im 16. und 17. Jahrhundert*, 2006, 70f. Salatowsky (70) repeats Petersen's erroneous notion that MELANCHTHON'S *Commentarius* would be the first psychological treatise written in Germany after Albert the Great. Even without late medieval German commentaries on ARISTOTLE'S *De anima*, which have survived only in manuscript form, the *Exercitium librorum Aristotelis De anima* by JOHANNES CARNIFICIS DE LUTREA, Erfurt 1482 would alone render the claim false. Furthermore, Melanchthon's treatise should be seen as part of an established genre of psychological treatises in the context of textbooks of natural philosophy like that of Bernhardi.

8 DESIDERIUS ERASMUS, *De copia verborum ac rerum*, ed. by B.I. KNOX, *Opera omnia Desiderii Erasmi Roterodami* I, 6, 1988.

9 H.D. RIX, *The editions of Erasmus De copia* (*Studies in Philology* 43, 1946, 595–618), 599–600; K.H. BURMEISTER, *Ein Kommentar zur 'Copia Verborum' des Erasmus von Rotterdam von Johannes Bernhardi* (*Montfort* 22, 1970, 272–282), 277–278. Burmeister mentions 11 printings, but VD16/17 database (<http://vd16.de>) registers 20 from German libraries alone.

10 On the importance of Melanchthon's revised textbook on rhetoric from 1531 in the development of his methodological ideas, see KUROPKA (see n. 3), 44–49.

follows, Bernhardt's views on method will be discussed in two parts. Firstly, his general view of art (*ars*) and method will be analysed in the context of Melanchthon's programmatic views on the matter in his *Dialectic* from 1529. Secondly, Bernhardt's use of method as means of teaching reliably will be exemplified in his presentation of causes in natural philosophy and rhetoric.

II Bernhardt's modification of the Melanchthonian notion of art and method

In the later 1520s Melanchthon carried out a reform of philosophical teaching in Wittenberg, which took Aristotelian philosophy as its starting point. In 1529 Melanchthon argued in particular that Aristotle's method was superior to that of Plato in natural and moral philosophy, since it was based on sound logic. In medicine, the corresponding exemplary authority was Avicenna, in law studies Justinianus, and in theology Paul's Romans.¹¹

In discussing the concept of demonstration, Melanchthon notes that the term *method* applies best to teaching knowledge (*scientia*) gained through a syllogistic demonstration from proper causes and inborn notions of the sciences' first principles.¹² It is therefore evident that for Melanchthon, the idea of method included (a) a procedure of gaining experience peculiar to each art i.e. discipline – art meaning here theoretical, not mech-

11 PHILIP MELANCHTHON, *De dialectica libri quatuor* (Wittenberg, 1529), fol. K8v: »Utilior est Aristoteles discentibus moralem aut naturalem philosophiam quam Plato, quia Plato non observavit iustam methodum tametsi is hoc nomine exagitet Gorgiam et similes, quod non satis periti sint dialectices. In medicina amatur ab omnibus Avicenna propter methodum, in iure civili propemodum methodus est liber Institutionum. In sacris litteris methodus est Epistola Pauli ad Romanos.« The text is translated and commented on in KUOPKA (see n. 3), 31f.

12 MELANCHTHON, *De dialectica* (see n. 11), L11–v: »Porro scire, inquit Aristoteles, est rem per causas cognoscere, una igitur haec via est consequendae perfecte notitiae quacunque de re. Et scientiam proprie appellant, cum demonstratione res est comperta. Et methodi nomen, de quo supra diximus, potissimum ad hanc docendi viam accommodari debet, cum demonstratione utimur, cum definitiones tradimus, cum causas querimus, cum ex causis effectus et propria officia ducimus, cum ostendamus principia artium.«

anical arts – which in this context is almost equal to knowledge (*scientia*)¹³, and (b) the way of presenting the knowledge in teaching. Or method could alternatively mean an ideal realization of such procedures by a certain exemplary authority. On the other hand, it seems that Aristotelian demonstration had a special ideal status as the optimum procedure for establishing and conveying reliable knowledge. Melanchthon considered non-methodical teaching, which did not follow the above-delineated methodical procedure, to be only capable of creating opinions, even when it would take place among established academic disciplines.¹⁴

In his *Epitomae* on natural philosophy Bernhardi bases his view of method on similar grounds. Method and application (*praxis*) are the two main parts of art (*ars*). Based on Melanchthon, he defines art as reliable, practice-oriented knowledge, founded upon firm rules derived from experience: »Art is a disposition (*habitus*) of the soul acquired in the intellect, consisting of reliable (*certa*) rules, which have been proved through experience and known through exercise, in order to achieve some useful for human needs.«¹⁵

The origin of this definition is in a formulation provided by Quintilian, but already Melanchthon exposes it with the help of an older definition from the Greek sources which includes the idea of reliable propositions.¹⁶

13 See ibd., fol. B7v: »Aristoteles artem tribuit mechanicis, scientiam speculabilibus, prudentiam practicae materiae, ut vocant, sed nos hic non discernemus illas voces usque adeo subtiliter. Nam et latini veteres et graeci saepe utuntur artis nomine pro scientia.«

14 Ibid., fol. B8r: »In medicina [...], sed praeter certas conclusiones, multas habet verisimiles sententias et coniecturas, quarum notitiam vocant opinionem, non artem. Idem iudicari de scientia iuris potest [...] sed praeter necessarias conclusiones, habet multas incertas et verisimiles conclusiones, quarum notitiam opinionem vocant.« See КУРОПКА (see n. 3), 31 f.

15 BERNHARDI, *Epitomae* (see n. 7), fol. D3r: »Ars est habitus animi in intellectu acquisitus, constans ex regulis certis per experientiam probatis et exercitatione cognitis, ad aliquid utile humanis usibus efficiendum.«

16 MELANCHTHON, *De dialectica* (see n. 11), fol. B8r–v: »Fabius libro secundo definiens artem ait, eam constare ex praeceptionibus consentientibus et coexercitatis ad finem utilem vitae. Haec definitio propter graecismos subobscura est. Est enim a graecis sumpta. Nam apud Lucianum extat his verbis, techne esi sys[t]ema, egkatalepseon eggegymnasmenon, pros ti telos euchreson ton en bio, id est, ars est ordo certarum propositionum, exercitatione cognitarum ad finem utilem in vita. Vocat enim egkatalepsis,

The nature of art as an activity based on firm experiential knowledge is reaffirmed in Bernhardi's discussion on necessary causes in *De copia*, where he notes that art should be counted among the necessary causes, since at least in some arts the method and experience are firm (*certa*), and thus necessarily produce certain actions. Therefore art is – at least partly – equated to natural causes, which are necessary in the sense that they necessarily produce certain effects if not externally impeded.¹⁷

In *Epitomae* Bernhardi also modifies Melanchthon's definition of art further towards the traditional Aristotelian view by adding the notion of intellectual disposition (*habitus*). Melanchthon himself defines art as one of the intellectual dispositions only in his later *Erotemata dialectices* (1547).¹⁸ Furthermore, Bernhardi uses the expression *firm rules* (*regulae certae*) instead of Melanchthon's *certain sentences* (*propositiones certae et firmae*).

III Method, themes and loci

The notion of rules reappears in Bernhardi's first definition of method, which is found in *Epitomae*: »Method is a quick and reliable route (*certa*

propositiones certas et firmas.« The quoted passage is from LUCIAN's *De parasito sive artem esse parasiticam* 4,2. However, Melanchthon may rely here on Johannes Phrissemius' commentary on Rudolf Agricola, where the Greek text is quoted according to a longer version and even the title of Lucian's dialog is identified. See JOHANNES PHRISSEMIUS, Rodolphi Agricola Phrisii de inventione dialectica libri tres, cum scholiis Ioannis Matthaei Phrissemii (S.l., 1528), 155f (on AGRICOLA, *De inventione dialectica* II.2). On Melanchthon, see also N.W. GILBERT, Renaissance Concepts of Methods, 1960, 70, who does not mention Phrissemius in this context. The Latin translation of *egkatalepseos* as *propositiones certas et firmas* (firm propositions) is absent in Phrissemius.

¹⁷ BERNHARDI, Desiderii Erasmi Roterodami De duplici copia verborum ac rerum commentarii duo, multa accessione nouisque formulis locupletati. Vna cum commentariis M. Veltkirchii oratoriae professoris in schola Vuittenbergensi, iam recens natus ac aeditis, Hagenau 1534, fol. P5r: »Tametsi ars quoque videatur plerunque ex parte necessaria esse caussa, quia certa est quaedam artium methodus et experientia, quam obsignare et sequi necessario in actione et opere artificioso.«

¹⁸ MELANCHTHON, Erotemata dialectices, Wittenberg 1548, CR 13, 537. In *Erotemata*, Melanchthon also defines method as an intellectual disposition. See KUSUKAWA, Vinculum concordiae (see n. 2), 347; ONG (see n. 3), 237.

via) and principle (*ratio*) of art, which has been transmitted through rules, precepts and institutions.«¹⁹ Although even Bernhardi seems to posit his definition of method in the context of teaching theoretical disciplines, it is worth noting that the term teaching does not explicitly appear in the definition, thus giving it a flavor of being more a description of the process of gaining theoretical knowledge in each particular discipline.

The contrast with Melanchthon in using the term rule should not be overstated, since rules, precepts and institutions can be understood as different kinds of true sentences. In fact, in *De copia* Bernhardi presents another definition of method in the context of an analysis of theses (general sentences) or commonplaces (*loci communes*, general terms), in general an analysis of themes (*themata*).²⁰

Before discussing Bernhardi's second definition of method let us first take a quick look at the use the concepts *theme*, *thesis* and *commonplace*, which were crucial for the Wittenbergians in the presentation of the theoretical knowledge. Furthermore, through Luther's disputations and Melanchthon's *Loci theologici*, the terms *thesis* and *commonplace* have gained popularity far beyond their original use in emerging Lutheran theology. Melanchthon adopted the concept of commonplace first in the context of rhetoric, but he soon found it important to apply it to the teaching of theology and other disciplines as well. Whereas Rudolf Agricola and Erasmus had used commonplaces for practical assistance in organizing arguments found in diverse authors, Melanchthon understood them as a set of fixed terms which guided the systematization of individual branches of knowledge. According to Melanchthon, each science has its own set of commonplaces, under which all particular topics of each science may be discussed. Although Melanchthon presented no systematic principle for choosing these commonplaces, he did not consider them as arbitrarily chosen. At least in his early textbook on rhetoric (1519) he considered them to be based on the nature of the things themselves and as such the most general ideas of all

19 BERNHARDI, *Epitomae* (see n. 7), fol. D3r: »Methodus est compendiosa et certa via ratioque artis per regulas, praecepta, et institutiones tradita.« For the origin of *praecepta* in the misreading of *perceptio*, see GILBERT (see n. 16), 12.

20 On the concept of theme in Melanchthon, see G. NUCHELMANS, Late-scholastic and humanist theories of the proposition, 1980, 159–167.

beings. Melanchthon's early understanding of commonplaces therefore presupposes a rather strong idea of conceptual realism, although this is not as clear in his later works.²¹

Concerning *theme*, Gabriel Nuchelmans has noted that Melanchthon changes his use of the term between the *Compendiaria dialectices* (1520) and *De dialectica* (1529). In the former, *theme* means the disputed topic, which may be either a single term or a complex sentence. In the latter, however, the term is largely omitted and replaced by the word *question* in discussions concerning single terms, and by *proposition* when concerning complex sentences. However, this seems not to be entirely the case, as Melanchthon occasionally uses *theme* when describing the discussion of simple questions.²² In 1531, a few years after Melanchthon, Christopher Hegendorff uses the term for a question including a complete sentence.²³ It is also worth noting that even after Bernhardi, several writers continued Melanchthon's manner of analyzing disputed questions in terms of simple and complex themes.²⁴

Bernhardi seems to build his description of themes using Melanchthon's original terminology. According to Bernhardi, theses are built upon commonplaces (*loci communes*), which Bernhardi understands as universal concepts serving as subjects or predicates of theses. The theses

21 Cf. P. JOACHIMSEN, *Loci communes. Eine Untersuchung zur Geistesgeschichte des Humanismus und der Reformation* (LuJ 8, 1926, 27–97), 31f; W. MAURER, *Loci communes von 1521 als wissenschaftliche Programmschrift. Ein Beitrag zur Hermeneutik der Reformationszeit* (LuJ 27, 1960, 1–50), 12.42f.45. On Agricola's and Erasmus' understanding of the commonplace, see P. MACK, *Renaissance Argument. Valla and Agricola in the Traditions of Rhetoric and Dialectic*, 1993, 235.309. It remains unclear what Maurer means when he states that Erasmus conceives of the commonplaces as »logical concepts« (MAURER, 32).

22 See NUCHELMANS (see n. 20), 159–161. For the sources referred to by Nuchelmans, see MELANCHTHON, *De dialectica* (see n. 11), fol. A5v–6r; Fir–v. Nuchelmans uses the 1541 Basel edition for the text of *De dialectica*. On the correct dating of the work, see footnote 3 above. For occurrences of the word *theme*, see MELANCHTHON, *De dialectica* (see n. 11), fol. E4r–v.

23 NUCHELMANS (see n. 20), 163.

24 *Ibid.*, 162–167.

and commonplaces together constitute the two subcategories of themes.²⁵ The consideration of commonplaces and related theses is a central process in various disciplines, and the name and number of commonplaces differ from one discipline to another. According to Bernhardi, there are three types of consideration (*tractatio*) of commonplaces: juvenile, dialectical (logical) and rhetorical. The first one, juvenile, is a composition of collections and florilegia in which material pertaining to individual commonplaces is gathered. This kind of consideration of commonplaces is suitable for schoolboys and others, who are not yet learned in logic and rhetoric. Bernhardi notes that such a way of considering commonplaces is the topic of Erasmus' chapter, upon which he is commenting, rightly perceiving Erasmus' debt to the tradition of commonplace books.²⁶ It has been noted that the tradition of commonplace books is »supremely tolerant of cognitive dissonance.« The key idea of Melanchthon's and Bernhardi's reading of commonplaces as universal concepts was in some sense to avoid the possibility for such cognitive dissonance.²⁷

25 Bernhardi distinguishes between theses and commonplaces in *De copia* (BERNHARDI, *De copia*, [see n. 17], fol. BB3v): »Decimum octavum caput copiae rerum est locus communis, quem supra in catalogo cognominavi thesin Graece, non quod idem prorsus sit thesis et locus communis, sed quia magnam affinitatem inter se habeant, cum thesis, ut supra eodem capito undecimo abunde dixi, sit propositio adeoque thema complexum. Sed locus communis sit proprie thema incomplexum, id est pars theseos, scilicet propositio- nis, subiectum commune et universale et saepe praedicatum commune ex quibus oportet componi quamlibet thesin, ut foelicitas et virtus sunt duo loci communes, ex quibus tanquam partibus recte componitur ut propositio ex subiecto communi et praedicato, haec thesis: ›felicitas est in virtute‹.«

26 *Ibd.*, fol. BB6v: »Caeterum triplex est modus tractandi locum communem, scilicet iu- venilis, dialecticus et rhetoricus, quorum unusquisque exerceri potest a mediocriter stu- dioso et rerum perito, in quolibet loco communi, haud quidem sine plurimo fructu. Trac- tatio iuvenilis est cum sub titulo alicuius loci communis vel theseos congerit studiosus iuvenis exempla, sententias et auctoritates ad eundem locum pertinentes ex quibuslibet bonis auctoribus, qua ratione utitur ille qui rapsodiam collegit Polyantheam, secundum ordinem alphabeti et qui elucidarium poetarum composuit. De hac etiam Erasmus hoc capite praecipue admonet. Voco autem hunc locum tractandi iuvenilem, quia utiliter permittitur imperitis adhuc dialecticae et rhetoricae iuvenibus et pueris.« On Bernhardi's view of commonplaces, see also BERNHARDI, *Epitomae* (see n. 7), fol. A7v.

27 A. BLAIR, *Humanist methods in natural philosophy: the commonplace book* (*Journal of the History of Ideas* 53, 1992, 541–551), 548.

However, Bernhardi considers it important to also comment on the other two ways of considering commonplaces. He describes the dialectical as a procedure in which commonplaces and theses are methodically taught, studied and learned.²⁸ He gives a most comprehensive presentation of the methodical procedure, as he understands it. Here the definition of method includes the notion of *dialectical* or *methodical* questions as the means of teaching, and knowledge of themes (i.e. theses or commonplaces) as its end: »Method is a compendious path of teaching, along which one proceeds rightly through dialectical questions into an acquaintance with each proposed theme.«²⁹ The emphasis is now in the teaching rather than gaining new knowledge by scientific procedures, but the two aspects are hardly to be distinguished.

Immediately following this definition Bernhardi lists twelve methodical questions to be used for an analysis of commonplaces, which he claims to derive from the four questions found in Aristotle's *Posterior Analytics* II.1 (89b) but a number of which are obviously related to the discussions in the *Topics*.³⁰ The questions include for example »Whether a thing exists?,« »What it is?« etc. Although Bernhardi is here discussing the dialectical or logical manner of consideration, he sees the questions as a starting point for a rhetorician as well. On the third manner of considering commonplaces,

28 BERNHARDI, *De copia* (see n. 17), fol. BB7r: »Tractatio dialectica est quando aliquem locum communem vel thesin ordine suo ac methodo dialecticaque via recte docendi per suas quaestiones inquirimus et perdiscimus.«

29 *Ibid.*, fol. BB7v: »Methodus est compendiaria docendi via, qua itur recta per quaestiones dialecticas ad cognitionem cuiusque thematis propositi.«

30 *Ibid.*, fol. BB7v: »1. an sit, 2. quid sit, 3. quae partes, 4. quae species, 5. quae caussae, 6. qui effectus, 7. quae propria, 8. quae accidentia, 9. quae affinia, 10. quae diversa, 11. quae circumstantia, 12. quae exempla. Etenim hae sunt fere duodecim quaestiones dialecticae vel methodicae, quas Aristoteles in principio secundo Posteriorum quaternario numero brevius describit.« Rudolf Agricola and his commentator Johannes Phrissemius consider Aristotle's four questions at some length in *De inventione dialectica*. See PHRISSEMIUS, *De inventione dialectica*, 187.190 (II.6).192.194f (II.7). On Melanchthon's later list of questions, see NUCHELMANS (see n. 20), 162. See also S. KUSUKAWA, *Nature's regularity in some Protestant textbooks 1530–1630* (in: *Natural law and laws of nature in early modern Europe: jurisprudence, theology, moral, and natural philosophy*, ed. by L. DASTON/M. STOLLEIS, 2006, 105–121), 107.

the rhetorical, Bernhardi comments that rhetoricians in particular vary the number and order of the questions according to the nature of the theme or the listeners' understanding. He also gives several examples of a correct choice of questions, which should be governed by the idea that we should not learn unnecessary things and at the same time remain ignorant of necessary ones.³¹

The introduction of the full set of twelve methodical questions seems to be Bernhardi's original elaboration of Melanchthonian principles, and even Melanchthon himself adopted it in a modified form in his later *Erotemata dialectices*.³² The most obvious starting point and model for Bernhardi's questions seems to be Melanchthon's description of the explanation of a simple theme in his *Dialectica*, which is based on four Aristotelian questions. However, on Bernhardi's list are several additional items, which are also found on a corresponding list of questions in Melanchthon's *Elementa rhetorices* from 1531. Unlike Bernhardi, Melanchthon did not explicitly connect these questions with the concept of method in these earlier textbooks, and the number of questions was considerably less in comparison with Bernhardi and his own later *Erotemata dialectices*.³³

Whereas according to Bernhardi the twelve methodical questions are used for each commonplace, a thesis is properly submitted only for one question, namely whether it is true or false. However, this is not all Bernhardi has to say here; on the contrary, he takes the opportunity to describe in more detail the methodical use of questioning. The truth of a thesis is de-

31 BERNHARDI, *De copia* (see n. 17), fol. BB7v: »Variat tamen saepissime et numerus et ordo istarum quaestionum, praecipue apud rhetores pro natura thematis et pro captu auditoris [...] utilia et necessaria neglecte segniterque investigare aut omittere mere stultum est, imo exitiabile studiis nostris, quamquam accidit plaerunque nobis, ut necessaria ignoremus, quia non necessaria didicerimus.« A similar remark on the redundancy of treating all topics is found in MELANCHTHON, *Elementorum rhetorices libri duo*, Paris 1532, fol. 10v.

32 See chapter entitled »On method«, in MELANCHTHON, *Erotemata* (see n. 18), CR 13, 573 f. This passage has been noted by GILBERT (see n. 16), 126f; see also ONG (see n. 3), 238 and KUSUKAWA, *Vinculum concordiae* (see n. 2), 346 f.

33 MELANCHTHON, *De dialectica* (see n. 11), fol. E4r–7r; 1532, fol. 8v–10v. See also *ibid.* 1529, fol. A6t; K7v.

terminated (*resolvitur*) through a consideration of its parts, the common-places, which are universal terms.³⁴

As an example of methodical questioning Bernhardi takes the problem: ›whether emotion ceases in a wise person‹ (*an affectus cadat in virum sapientem*). Then he considers *emotion* as the subject and *wise man* as the predicate of the sentence of which the question is about. The subject and the predicate are subjected to methodical questions: whether there are affects, what they are, from which parts they consist, whether there are wise persons (›according to the Stoics‹), what is a wise person, what are their causes etc.³⁵

By considering some examples, Bernhardi tries to show that a notable difference exists with respect to the various kinds of theses. The more complex the theses, the more effective they are in finding arguments through methodical questions. Thus the theses derived from hypothetical sentences (which here means a sentence combined from more than one proposition) are more productive in finding arguments than sentences containing only one proposition, which may be proved true or false.³⁶

The above outline of Bernhardi's views of method shows that already before 1534 a relatively fully systematized view of method had been drafted in Wittenberg. Method was considered as part of art as an intellectual disposition – a feature that Kusakawa considered new in Melanchthon's textbook, which came out years later. The definition of method even included the description of its content, which was aimed at learning reliable knowledge through a predefined set of methodical questions. As a scientific methodology such a procedure might seem as a naive and rigid application of traditional Aristotelianism in a humanist milieu, but it was still a respectable attempt to systematize the procedure of acquiring reliable knowledge towards comprehensiveness, which was in danger of being neglected in a predominantly rhetorical style of argumentation of humanism. Fur-

34 BERNHARDI, De copia (see n. 17), fol. BB8r: ›Resolvitur autem thesis tractanda aut probanda in suos locos communes plures vel unum, sicut propositio quaelibet resolvitur in suum subiectum et praedicatum, tanquam partes suas, quae singulae partes theseos, tunc fient simplicia themata et loci communes, terminique incomplexi.‹

35 Ibid., fol. BB8r.

36 Ibid., fol. BB8v.

thermore, as will be seen below, Bernhardi's method of analyzing theses was firmly based on his understanding of universals and of the psychological process of concept formation.

IV Knowledge of the individual: the categorical ascent to theses

Bernhardi discusses the procedure of acquiring knowledge through theses again in his discussions of universal and singular causes in both *Epitomae* and *De copia*. In the passage contained in *Epitomae*, Bernhardi does not use the notion of commonplaces, but speaks exclusively of theses, i.e. the sentences. Here Bernhardi understands *universal* to signify genres and species of causes, and not higher celestial substances, although he also notes that use of the term.³⁷ Next he describes as a commendable method that can be used in diverse academic professions a procedure starting from individual causes and then ascending to the most universal ones through a Porphyrian tree:

This division generates infinite theses and hypotheses among physicians, rhetoricians and philosophers and also in other professions and also in the consideration of things other than natural. They are rightly encouraged to ascend from a singular cause to a universal one as if through a categorical order (*ordine praedicamentorio*), even if physics does not teach anything concerning singular causes and particular effects. This is because the singulars are far from the art, especially from the theoretical. However, the application (*praxis*) and use of the science is found among singular and individual things.³⁸

Using similar vocabulary, Melanchthon refers to Cicero, who calls for a transition from hypotheses to theses, since speaking about commonplaces is richer and more splendid, although he notes that in a syllogism the order is reversed. This is to be understood as a reference to the rule according which the second premise of a syllogism (the minor) must not contain more

³⁷ BERNHARDI, *Epitomae* (see n. 7), fol. F6v.

³⁸ *Ibid.*, fol. F6v: »Ex hac partitione nascuntur infinitae theses et hypotheses apud medicos, rhetoresque et philosophos, in aliis quoque professionibus, rebusque non naturalibus, et recte admonent a singulari causa ascendendum esse ad universalem, ordine praedicamentario quasi, tametsi physica nihil admodum de singulari causae effectuque particulari docet. Quia ab arte singularia sunt remota, praesertim qua theorica sit. Praxis autem et usus artis exercetur circa singularia et individua.«

than what the middle term of the major premise contains.³⁹ The terminology used here seems to presuppose that the distinction between thesis and hypothesis denotes a distinction between universal and singular questions – the finite and infinite questions in Cicero.⁴⁰ However, on the basis of Bernhardt's remark in *Epitomae* it remains unclear what the nature of the ascent he describes is. One gets the first impression that he is mainly discussing a rhetorical manner of exposition, like Melanchthon in his reference to Cicero. Bernhardt's remark that physics teaches nothing about singulars would consequently mean that it is good for a speech to include both examples of singulars as well as universal truths, which, however, points to the intrinsic value of producing knowledge of individual things in teaching, namely through the practical application of theoretical knowledge. As will be seen in what follows, the purpose of acquiring a knowledge of singulars is more explicitly visible in Bernhardt's discussion of categorical ascent in *De copia*.

In discussing universal causes in *De copia* Bernhardt omits the notion of ascension from singulars to universals, but notes that universal causes

39 MELANCHTHON, *De dialectica* (see n. 11), fol. G5v: »Nam ex universali quaelibet singularis aut particularis sequitur, ex particulari non item. Et dialectici prudenter tradiderunt nunquam in minore plus esse debere, quam erat in medio in maiore.«; I4r: »Cicero praecipit aliquoties, ut in causis transferatur oratio ab hypothesis ad thesin, propterea quod omnis oratio de locis communibus sit uberior et splendidior. Porro in faciendis syllogismis, natura cogit nos a thesi ordiri, et hypothesis in conclusionem ponere.«

40 See MARCUS TULLIUS CICERO, *M. Tulli Ciceronis scripta quae manserunt omnia* (Leipzig, 1907), I.2, 402 (*Partitiones oratoriae*, 61.22): »Duo sunt, ut in initio dixi, quaestionum genera, quorum alterum finitum temporibus et personis causam appello, alterum infinitum nullis neque personis neque temporibus notatum propositum voco.«; ibd., I.2, 444 (*Topicorum*, 78.18). On this distinction see also Johannes Matthias Phrissemius' commentary on Rudolf Agricola's *De inventionem dialectica* (PHRISSEMIUS, *De inventionem dialectica*, 204): »De his Cicero cum aliis locis quibusdam, tum vero in Topicis et in Partitionibus, et Quintilianus libri tertii cap. 5 necnon Severinus Boethius 4. lib. Topicorum. Thesis est quaestio infinita, sine circumstantiarum adiunctione proposita. Ut, sit ne ducenda uxor, an sit bellum gerendum. Hanc Cicero in Topicis propositum vocat, in Partitionibus consultationem. Hypothesis est quaestio finita, cum circumstantiarum adiunctione proposita. Ut, sit ne Catoni uxor ducenda, sit ne Caesari bellum suspiciendum adversus Pompeium. Hanc Cicero in Partitionibus controversiam, causam in Topicis vocat.«

provide theses and singular causes hypotheses.⁴¹ However, in *De copia* Bernhardi does not neglect the topic of categorical ascension altogether. To the contrary, in his discussion of the various types of propositions Bernhardi includes a section on theses and hypotheses and a remark about the categorical ascent. Points of this passage clarify Bernhardi's views on the topic.⁴²

Bernhardi wants to remove ambiguity in the uses of the terms thesis and hypothesis. Based on the Ciceronian description of infinite questions, Bernhardi states that theses are common propositions, whereas hypotheses are singular ones, or finite to use Ciceronian parlance. Bernhardi is aware that all this belongs to a specifically rhetorical discourse and consequently calls this distinction a rhetorical distinction between propositions.⁴³ To indicate that this rhetorical distinction is not unrelated to the general philosophical discourse he adds a remark on its relationship to the

41 BERNHARDI, *De copia* (see n. 17), P4v: »Causa alia est universalis, id est, communis, nempe species vel genus individuae causae, et hinc nascuntur theses. Alia est particularis causa, id est singularis vel individua, ut Vergilius scribit bonos versus, at Catoni est ducenda uxor. Et hinc nascuntur hypotheses. Et quidem actiones et operationes tribuuntur proprie non universali vel communi, sed singulari causae.« Note that here Bernhardi makes no distinction between particularity and singularity regarding causes, but on the grounds of his use of proper names in the examples indicates that he means singular rather than particular causes in a strict sense of the word. Cf. *ibid.*, fol. T5v, where Bernhardi explicitly distinguishes particular propositions (»some rich are courageous«) from singular ones (»rich Crassus is courageous«).

42 Bernhardi concludes his discussion by calling the procedure he describes a categorical ascent (*ascensus praedicamentarius*), which connects his reflections to the ideal presented in the discussion of universal and singular causes in the *Epitomae*. See BERNHARDI, *De copia* (see n. 17), fol. T7v: »Et hic est ascensus ille praedicamentarius rerumque gradus ab individuis inde per speciem specialissimam per species subalternas, per genera subalterna, usque ad summum genus, hoc est, ad praedicamentum supra quod non licet ascendere.«

43 *Ibid.*, fol. T5v–T6r: »Sic enim quantitas propositionis plane iudicatur a subiecto in hunc modum fere apud rhetores. Sicut duplex est quaestio, scilicet infinita et finita [...] ita etiam duplex est propositio rhetorica, scilicet infinita, ut sapienti viro est ducenda uxor, ut divitiae faciunt animos et hanc vocant thesin, id est, communem propositionem. Alia est propositio finita, id est singularis, ut Croesus est dives, ut Cicero est studiosus praelegendus, et hanc vocant hypothesin, id est causam vel propositionem singularem.«

logical (»dialectical«) distinction between universal, particular, indefinite and singular propositions. The problem is whether all more and less universal propositions belong to theses. Bernhardi's solution is that there are three subspecies of theses, i.e. common propositions: universal propositions, whose subject is universalized by the quantifier »all«; indefinite propositions, where no such quantifier is attached to the universal subject term; and particular propositions, where the subject is quantified by »some.« The decisive factor is whether the subject of the proposition is a universal (»common«) term or not. All propositions whose subject term is a universal one, are called theses. Singular propositions, which according to the terminology of logic are those whose subject term names an individual (such as proper names), are in a proper sense called hypotheses.⁴⁴ Bernhardi is aware of the fact that such a use of terminology was not universally accepted by the writers of rhetoric since it may have been convenient to call a specific proposition a hypothesis in relationship to the respective general proposition, but for pedagogical reasons he adheres to the proposed distinction.⁴⁵

The principal importance of the distinction between thesis and hypothesis becomes evident in Bernhardi's following remark, which points towards and sets up the idea of a categorical ascent:

As individuals and singulars are included in their respective species and share in like manner the nature of their species and are explained by it, and as species are included

44 Ibid., fol. T5v–T6r: »Apud dialecticos propositio alia est universalis, alia indefinita, alia particularis, quarum subiectum non est singulare aut individuum nomen, sed earum subiectum est nomen universale et commune, scilicet generis vel speciei, ut omnes divites sunt animosi, ut divitiae faciunt animos, ut quidam divites sunt animosi. Alia propositio est singularis, cuius subiectum est individuum et singulare nomen, ut Crassus dives est animosus; Croesus est dives [...] Sed thesis rhetorica complectitur propositionem dialecticam universalem, indefinitam et particularem, tanquam suas species.«; ibd., fol. T6r–v: »Est ergo thesis propositio vel universalis vel indefinita vel particularis, cuius subiectum non est individuum et singulare nomen, sed est commune nomen generis vel speciei.«

45 Ibid., fol. T6r: »Hoc modo discernere hypothesin a thesi secundum singulare et commune subiectum, videtur mihi sane tutissimum maximeque perspicuum, tametsi videam plerosque rhetores propositionem communem, cuius subiectum sit nomen speciei, vocare hypothesin respectu sui generis.«

in their respective genres and share in like manner the nature of their genus and are defined by their genus, similarly a hypothesis, that is, a singular proposition, emerges from and is explained and shown by its respective thesis.⁴⁶

The explanation of a proposition concerning a singular person (or an individual substance) is thus a procedure similar to creating definitions of species through the generic terms to which they are subordinated. Such a general description says little about the actual contents of the procedure, but it is important that here Bernhardi connects the rhetorical art of finding arguments to the more philosophical procedure of finding definitions through a Porphyrian tree of species and genres. Furthermore, after distinguishing specific and generic propositions as subclasses of theses, Bernhardi defines a similar relationship between these, in which a generic proposition »produces, proves and defines« the specific thesis whose subject is subordinated to the subject of the generic proposition in the Porphyrian tree. As a conclusion, Bernhardi states that every singular proposition is explained and confirmed (*exponitur confirmaturque*) first through respective specific theses and ultimately through generic ones. This procedure of explaining and proving singular theses is according to him similar to the psychological process through which an individual thing is known through specific and generic features included in the definition of it.⁴⁷ Such a procedure is inevi-

46 Ibid., fol. T6v: »Sicut autem individua et singularia continentur in sua specie et communicant ex aequo naturae suae speciei et explicantur per suam speciem, et sicut species continentur in suo genere et communicant naturae sui generis ex aequo et definiuntur per suum genus, sic hypothesis id est propositio singularis semper nascitur, explicatur et indicatur ex sua thesi thesios.«

47 Ibid., fol. T6v: »Iam thesis est duplex, scilicet generica [...] et thesis specifica [...] hypothesis vero est unius formae. Ut ergo omnis dictio et res est vel genus vel species vel individuum in praedicamento rerum omnium ordine, sic quaelibet propositio est thesis generica vel thesis specifica vel hypothesis et sicut genus gignit definitque suas species, ita thesis generica gignit probatque et declarat theses específicas, et rursum sicut species gignit et definit individua sua, ita thesis specifica gignit, declarat, probatque suas hypotheses. Sic ergo quaelibet hypothesis, id est propositio singularis, exponitur, confirmaturque primo per suam thesin specificam, deinde per suam thesin genericam, sicut et quodlibet individuum intelligitur per suam speciem et describitur omnibus coloribus notisque suae speciei. Deinde sicut et species, ita et individuum cognoscitur per suae speciei genus, perque omnia ea, quae vel necessario vel per accidens aut credibiliter generi conveniunt.«

tably based on another process, described in *Epitomae*, where knowledge of universal concepts is formed. Bernhardi understands this as a process in which, through an abstraction from several singular concepts, one approaches the perfect universals, which he calls ideas.⁴⁸

At this point it seems that the idea of ascent starts from propositions concerning singulars. Knowledge of singulars is also, according to *Epitomae*, the ultimate goal of the practical disciplines. The ascent described above is therefore neither a form of induction, where knowledge of universal features is gained by gathering experiential knowledge about several singulars, nor a application of an expository syllogism (as described by Melanchthon), where two singular premises are used to infer a common (indefinite) proposition as their conclusion – to use the terminology of Bernhardi. Since demonstrative reasoning does not operate with singular propositions, a categorical ascent is needed to establish the connection between singulars and their corresponding universal propositions.

The categorical ascent appears therefore as a part of the procedure where knowledge of an individual thing is gained from abstract knowledge of its specific and generic features. In fact, Bernhardi seems to think that categorical ascent is not in itself argumentative at all, but a part of an explication of the theme by a multiplication of propositions connected to it. However, its purpose is to systematize the knowledge of singulars by connecting them to their respective universal features, thus preventing the chaos which would result from taking all circumstantial features into the service of the explanation. Bernhardi does not reject the various kinds of arguing for hypotheses, which Erasmus illustrates with many examples, including not only demonstration, but also induction, enthymeme and the use of examples. It seems, however, that he wants to highlight the analysis of categorical ascent also here by noting that in many cases hypotheses are correctly proved without any form of argumentation.⁴⁹

48 On Bernhardi's descriptions of the psychological process of concept formation, see BERNHARDI, *Epitomae* (see n. 7), fol. k4r–v; 7r–v; m2r–3r.

49 BERNHARDI, *De copia* (see n. 17), fol. T8r: »Ideoque Erasmus hoc caput nominat multiplicationem propositionum, hoc est, copiosam et expeditam inventionem, atque bene digestam dispositamque densitatem praemissarum, conclusionum, antecedentium et consequentium in forma enthymematis, inductionis et exempli. Quamvis et saepe propositio iusta sine formis argumentorum explicatur.«

Having thus described the general outline of Bernhardi's view of the method, it is now an appropriate time to turn to look how he used the methodical procedure in the presentation of causes and at the same time broaden the view of his scientific methodology.

V Methodical presentation of causes

1 Cause as a topic of rhetoric and of natural philosophy

In *De copia* Bernhardi discusses several topics related to the twelve methodical questions, however it is not possible here to discuss the use of each question in detail. Among the questions, the analysis of causes – the topic of the fifth question – takes a prominent position.⁵⁰ It allows Bernhardi to also refine his view concerning the analysis of singular and universal propositions. The discussion of causes is particularly central in natural philosophy, but in Wittenberg it was applied to theological problems increasingly during early 1530s.⁵¹ In *Epitomae*, Bernhardi argues at length for the importance of a knowledge of causes in the philosopher's profession in general:

Certainly, without the acquaintance of causes, a philosopher is a mere sophist, differing only little or not at all from the uneducated and the rustics. He does not know almost anything more than the inexperienced common people since he does not proceed beyond the common effects and does not examine more thoroughly the proper effects nor the more hidden causes.⁵²

50 On Bernhardi's discussion of causes, see also KUSUKAWA, Nature's Regularity (see n. 30), 108–110.

51 See, for example WA 39,1; 92f.102.142; 40,2; 383; 40,3; 204–205.210–211.242.487 and especially Luther's theses for the disputation *De homine* from the year 1536 (Luther, WA 39,1; 175). See also »Luther's *Dialectic*« from about 1540 (Luther, WA 60; 146f): »Ex causis igitur conflatur optimae definitiones, sagt D. Luther, und berichten einen richtig, und man kömmt eher und näher darzu quam per praedicabilia et praedicamenta, welches, eigentlich zu reden, alles von causis genommen, wie viel appellationes ex causis rebus impositae sunt, et Rhetores omnes suas figuras verborum, amplificationes ex causis sumunt, welchs uns Melanchthon am ersten gezeight hat.«

52 BERNHARDI, *Epitomae* (see n. 7), fol. F3v: »Et quidem philosophus sine cognitione causarum est merus sophista, parum vel nihil ab indoctis, idiotis et rusticis differens, cum nihil admodum supra vulgus imperitum sapiat quod non ultra vulgares effectus prog[r]editur, neque penitus inquirat effectus proprios, nedum causas occultiores.«

Bernhardi's starting point for his discussion of causes in *De copia* is the rhetorical analysis of ancient texts. In a passage commented on by Bernhardi, Erasmus seems to have works of history or epical poetry in mind. He introduces the idea of using the causes in a form of auxiliary question (for example, concerning a war) such as: »what was the cause of the enmity,« »who was the instigator,« »what was the reason to actually wage the war,« »what were the prospects of winning,« »what did the parties trust in.« However, he notes that it would take too long to present actual examples of using causes, and leads the reader to consult such authors as Sallustius and Livy.⁵³

Already at the beginning of Bernhardi's commentary on this chapter of Erasmus it becomes evident that Bernhardi's final focus is far beyond poetic or historical works in the elucidation of a strictly methodical procedure:

The third chapter of the abundance of things is the enumeration of the causes. Its use is most necessary in every kind of profession, since it is most amply evident that without the acquaintance of causes (*sine causis cognitis*) no certain knowledge can be established, since knowledge is an intellectual disposition (*habitus*) which cognizes the things through causes and effects.⁵⁴

At this point it again becomes most clear that even if Erasmus' textbook is suitable for a rather elementary teaching of rhetoric – helping schoolboys to compose elegant and rhetorically effective poems – Bernhardi intends to substantially enlarge the scope of the work through his commentary. Therefore it may not be far-fetched to assume that in writing the commentary he had all sorts of texts in mind, and not least the kind of academic treatises he himself produced. A knowledge of causes had special importance in such treatises.⁵⁵

53 ERASMUS, *De copia* (see n. 8), 201 (II.142–4): »Hoc vt est dilucidius quam vt egeat praeceptione, ita difficile sit exemplum nisi plurimis verbis proponere. Quare supersedebimus, et lectorem ad Salustium ac Liuium relegabimus.«

54 BERNHARDI, *De copia* (see n. 17), fol. P2v: »Tertium caput copiae rerum est enumeratio caussarum, cuius usus maxime necessarius in omni genere professionis latissime patet, adeo, ut sine caussis cognitis, nulla certa scientia possit consistere, siquidem scientia est habitus intellectivus cognoscens rem per caussas et effectus.«

55 *Ibd.*: »Atque hic multis paginis possem huius loci encomium facere si liberet, verum experientia ipsa malim sentire nos caussarum et effectuum notitiam atque commoditates incredibiles, quae valent non in dialectica, neque in physica solum, sed in qualibet professione utili.«

Bernhardi proceeds to define the notion of cause here, and excludes the rhetorically using it as the general theme of a speech as well as the common notion of the cause, visible also in Cicero, who includes only the efficient and final causes. In contrast to these notions Bernhardi calls the cause something, »because of what some other thing is or can be.«⁵⁶ The cause is thus defined as »something antecedent, which is capable of producing an effect according to its time and mode.«⁵⁷

A comparison with a corresponding passage in Bernhardi's natural philosophy reveals that despite the context of a rhetorical treatise he is actually discussing here a philosophical notion of a cause. The definitions of the causes appear identical, but even in other respects the discussions are rather similar.⁵⁸ Furthermore, similar extensive divisions between various sub-species of causes are repeated in both treatises, including the famous Aristotelian scheme of fourfold cause (material, formal, efficient and final). A minor peculiarity concerning the context of rhetoric is evident in Bernhardi's remark that a knowledge of causes is not only useful, but also brings pleasure to one who possesses it.⁵⁹

Since the discussion of causes in the commentary on *De copia* is so similar to that in the *Epitomae* of natural philosophy, both works will be drawn upon in what follows. This will enable us to discern the methodological import of the things discussed in the *De copia* commentary for Bernhardi's manner of proceeding in natural philosophy.

56 Ibid., fol. P3r: »Verum in genere hic appellamus caussam, id propter quod aliud est vel esse potest.«

57 Ibid.: »Causa est res antecedens, quam suus effectus potest sequi suo tempore et modo, ut quia pannus est, potest consui tunica, quia pecunia est et merces, potest contrahi emptio et venditio, quia verba et res bonae tibi suppetunt, potes ergo copiosam orationem componere.«

58 BERNHARDI, *Epitomae* (see n. 7), fol. F3v–4r. The definition is as follows (ibid. F4v): »Causa est res antecedens, ad quam suus effectus sequi potest, ut pannus est, ergo tunica potest fieri suo tempore, atque haec definitio causam in genere notificat.«

59 BERNHARDI, *De copia* (see n. 17), fol. P2v: »Etenim dici nullo modo potest, quantum non utilitatis solum, verum et voluptatis secum adferat caussarum et effectuum vel mediocris, nedum solida investigatio et cognitio, iuxta illud divini poetae dictum: Felix qui potuit rerum cognoscere caussas.« The same sentence from Vergil's *Georgics* (2.490) is also quoted in *Epitomae* (BERNHARDI, *Epitomae* [see n. 7], fol. k6v) as a part of its lengthy eulogy for a knowledge of causes.

2 General characteristics of Bernhardi's classification of causes

In *De copia* Bernhardi enumerates twelve divisions of causes, which are listed in *Epitomae* in an almost identical manner. According to *De copia* the divisions are as follows: (1) First (infinite, independent) vs. secondary (finite, dependent) causes, (2) celestial cause, fate, fortune, natural causes and voluntary causes, (3) internal vs. external causes, (4) the »four causes«: material, formal, efficient and final, (5) universal vs. particular causes, (6) per se or proper vs. accidental causes, (7) immediate vs. remote or mediate causes, (8) necessary vs. contingent causes, (9) constant vs. inconstant causes, (10) simple vs. complex causes, (11) operative or actual vs. potential causes, and (12) connected vs. individual causes. Theoretically these twelve divisions further amount to at least 27 different species of causes.⁶⁰

There is no doubt that at the level of his theoretical views Bernhardi attached considerable importance to a knowledge of the various kinds of causes in acquiring knowledge in general. His twelve divisions amount to a numerous subspecies of causes, and he even hints that there may still be more. The exact role of this elaborate way of differentiating the species of causes in his actual explanation of the phenomena in natural philosophy still remains to be seen. Before going deep into this question, it is first necessary to analyze the nature of Bernhardi's divisions of causes and their immediate context in the intellectual history of his time.

At least half of the divisions were directly derived from Aristotle's *Physics* II, and the same ones were also listed in contemporary commentaries. These include divisions 1, 5, 6, 7, and 11 – and naturally, also division no. 4, which describes the division preferred by Aristotle.⁶¹ However, an

60 BERNHARDI, *De copia* (see n. 17), fol. P3r–P5v. For the corresponding list in the *Epitomae*, see BERNHARDI, *Epitomae* (see n. 7), fol. F4v–F8r. In the *Epitomae* divisions three and four are in reverse order. The different numbering of an otherwise identical list was a result of a careless enumeration of the first two causes, which Bernhardi counted erroneously as three. Both works date from Bernhardi's late years, but this detail would suggest that *De copia* is later.

61 In the following discussion three commentaries have been chosen as a scholastic frame of reference for Bernhardi's exposition of causes. These three are representative of the three scholastic schools of thought mentioned in the statutes of the University of Wittenberg: Thomism, Scotism and *via moderna* (»*via Gregorii*«), although the third never played a significant role in Wittenberg before the Reformation (cf. H. SCHEIBLE, *Die Philo-*

overview of Bernhardi's twelve divisions of causes immediately gives an impression of a high degree of elaboration, which reminds one of scholastic more than humanist textbooks. This is also what Bernhardi seems to be hinting at when he notes that these »twelve or more« (and even other) distinctions are to be found among »the *physicos*«⁶² and that they are the »common divisions of the causes (*vulgares divisiones causarum*)«,«⁶³ »which are to be enumerated in schools.«⁶⁴

However, Bernhardi's division of causes does not seem to correspond to any particular textbook or commentary on natural philosophy among his contemporaries or potential sources, although they regularly discuss the divisions of causes in the context of Aristotle's discussion in the second book of *Physics*. It seems that Bernhardi knew of at least the division of causes into twelve species, which he calls »common« (not to be confused with Bernhardi's own list of twelve divisions which result in more species of causes). Such a division appears at least in Martin Pollich's Thomist textbook, which reflects the teaching of Thomist natural philosophy during Bernhardi's student years in Wittenberg.⁶⁵

sophische Fakultät der Universität Wittenberg von der Gründung bis zur Vertreibung der Philippisten [ARG 98, 2007, 7–44], 12f). However, as the main scholastic background of Luther and Melanchthon, the *via moderna* is highly relevant in this context. The three commentaries include (1) *Cursus physici collectanea* by Martin Pollich of Mellrichstadt (1455–1513), the leading Thomist in Wittenberg (cf. H. KATHE, *Die Wittenberger Philosophische Fakultät 1502–1817*, 2002, 10); (2) *Expositio super tota philosophia naturali* by Pierre Tartaret (d. 1522), a Parisian Scotist whose works were included the teaching of Scotist natural philosophy in Wittenberg (cf. S. KUSUKAWA, *The transformation of natural philosophy: the case of Philip Melanchthon*, 1995, 15); and (3) *Summa in totam physicen* by Jodocus Trutfetter (1460–1519), the leading figure of the *via moderna* in the nearby University of Erfurt, who also taught in Wittenberg for a short period of time. The content of Bernhardi's scholastic education is not known. Scotist natural philosophy was taught during Bernhardi's student years by his compatriot Johannes Dölsch (1486–1523), who held the chair until 1521 (cf. KATHE, 27; SCHEIBLE, 14.18).

62 BERNHARDI, *Epitomae* (see n. 7), fol. F5v.

63 *Ibid.*, fol. F8r.

64 BERNHARDI, *De copia* (see n. 17), fol. P3r.

65 BERNHARDI, *Epitomae* (see n. 7), fol. F8r: »Atque hae sunt vulgares divisiones causarum, prae caeteris notandae, quarum plerasque si rursum diducas atque subdividas, secundum quattuor species causarum, item secundum actum et potentiam, aliasque formas dividendi, non tantum duodecim modi causarum fient, ut vulgo tradunt, sed erunt longe

Yet still, as mentioned, it is hard to find an exact correspondence of Bernhardi's divisions with such textbooks. His frame of reference may be traced rather from a cryptic remark, namely that the enumeration results from combining the fourfold scheme with the distinction between active and potential causes. It may be asked how one would end up with twelve instead of eight divisions by combining four and two species of causes. The textbooks derived the twelve-fold division from a combination of three divisions (nos. 5, 6 and 10 in Bernhardi) with a division into actual and potential causes, thus resulting twelve species of causes. This manner of systematization dates back to the *Physics* commentary of Albert the Great, but unlike Albert the later textbooks do not relate the division into the fourfold scheme.⁶⁶ However, in discussing the four causes, Albert gathers a set of seven distinctions, which result in fourteen species of causes. All except one of the distinctions are contained in Bernhardi's list (nos. 5, 6, 7, 10, 11, 12). Albert shows that all fourteen »modes« can be further applied to each of the four main types of causes, thus resulting in dozens of subspecies.⁶⁷

plures modi et plurima discrimina, quae cuique diligenti aut curioso promptum est suapte industria exquirere.« On Thomist textbooks, see MARTIN POLLICH, *Cursus physici collectanea*, Leipzig 1514, fol. B4ra: »Sex ergo sunt causarum modi scilicet prior et posterior, per se et per accidens, complexa et incomplexa. Et quilibet horum sex modorum dividitur per actum et potentiam et sic causarum modi sunt duodecim.« See also the following Thomist textbooks from Leipzig: JOHANNES PEYLIGK, *Philosophie naturalis compendium*, Leipzig 1499, fol. C5v; and MAGNUS HUNDT, *Introductorium in Aristotelis physicen, parvulus philosophiae naturalis vulgariter appellatum cum propria non extranea declaratione*, Leipzig 1500, fol. pp3r. Most of Bernhardi's divisions are also found in JODOCUS TRUTFETTER's *Summa in totam physicen*, Erfurt 1514, fol. C3r (no. 3); C3v (nos. 1 and 5); d1r-v (no. 12); d2r (no. 8, *passim*); d3r-v (no. 7 and 5 again); d4r-v (no. 6); d4v-e1r (no. 11); e1r (no. 10) e2v (no. 2, approximately). Several divisions were also listed by Pierre Tartaret; he calls these »four genera« (no. 4) and »four divisions«: nos. 1 (»prior and posterior«), 6, 7 (as a subdivision of 6), 10, and 11. PIERRE TARTARET, *Expositio super tota philosophia naturali nec non Metaphysica Aristotelis cum textu*, Lyon 1498/99, fol. 20va–21ra. As well, Pollich mentions exactly the same »genera« and »divisions« as Tartaret (POLLICH, *Cursus physici*, fol. B3vb–B4ra).

⁶⁶ The systematization is found in ALBERT THE GREAT, *Physicorum libri VIII in Beati Alberti Magni Ratisbonensis episcopi, Ordinis praedicatorum, opera omnia* 3 (Paris, 1890), 133a.

⁶⁷ *Ibid.*, 134a.

Therefore it seems that Albert's elaborate way of dividing causes comes closest to Bernhardi's twelve distinctions. Indeed almost all of Bernhardi's distinctions can be traced at some point to Albert's commentary on *Physics* II. In addition to the six distinctions listed above and the usual four causes, distinctions 1, 2 and 3 are also explicitly mentioned and even the themes related to the remaining two distinctions (8 and 9) are discussed to some degree.⁶⁸

The detailed similarities with Albert suggest something of Bernhardi's working method in creating his extensive list of distinction of causes, which he then utilized even in *De copia*. Even if Bernhardi does not mention Albert explicitly in this context, it seems that he considered Albert as an exemplary commentator on Aristotelian natural philosophy and as such a suitable basis for a construction of rules or precepts concerning this particular topic. In other parts of the *Epitomae* Albert appears as the only scholastic author whom Bernhardi explicitly mentions, in most cases in a favorable sense.⁶⁹

One may therefore conclude that although the divisions presented by Bernhardi were commonly accepted by a variety of traditional schools of thought in his immediate context, they nevertheless reveal his interest in returning to the roots of the later scholastic natural philosophers which date back to Albert. The scholastic outlook of Bernhardi's distinctions does not therefore derive from a falling back on any particular school of late medieval scholasticism, but is rather to be understood in the context of Melanchthon's and Bernhardi's renewed humanist Aristotelianism. It is also evident that despite Bernhardi's use of distinctions in his *De copia*, their primary context is to be found in the teaching of natural philosophy.

68 For individual distinctions, see ibd., 124b (no. 1); 146a (no. 2); 131b (no. 3); for nos. 8 and 9 cf. Albert's discussion of contingency in the context of fate and fortune in ibd., 144b–145b.

69 See BERNHARDI, *Epitomae* (see n. 7), fol. B3v; G3r; I1v; M5r; M6v; O1r; P7r; V2v; X3v; X4v; Y7r; Z2v; Z3r; Z5v, and six references in the discussion of mineralogy, 21 references in zoology and some additional references in psychology.

3 Discussion of individual classes of causes

As seen above, Bernhardi uses the same set of divisions between various species of causes in both *Epitomae* and *De copia*. Nevertheless, some differences can be seen in his discussion of particular species of causes, which elucidate the difference between the understanding and function of causes in natural philosophy and rhetoric.

In defining a cause, Bernhardi notes that each cause produces its effect »according to its time and mode.«⁷⁰ A better knowledge of particular modes of causes seems to be the purpose of their classification. In order to attain a proper knowledge of things, the natural philosopher is not satisfied with an enumeration of their different causes, since a causal relationship can be understood as denoting various relationships between a cause and its effect. This appears most conspicuously in Bernhardi's discussion of the seventh division, where he writes that

one must properly note these two distinctions [nos. 6 and 7 above], since the improper and remote causes are often taken into account, whereas the more proximate a cause is to the proper and immediate cause, the more certain the acquaintance of the thing in conveys.⁷¹

It may seem that according to *Epitomae* the task of a natural philosopher is therefore to find the most immediate causes in the causal chain concerning the things under study.⁷² This seems to be the main purpose of searching for the most immediate causes. Most of the divisions discussed by Bernhardi are presented in order to define the place of an individual cause in the universal causal chains. The first Cause, God, is seldom the most immediate cause of any created being, although even this cause belongs to the scope of physics (chap. 3 in *Epitomae*). The same applies to fate and fortune (chap. 24 and 25), but celestial (astronomic), natural and voluntary causes in particular are at the center of the natural philosopher's interests.

70 See above note 55; »suo tempore et modo« is added to the definition in *De copia*, but also fits well with discussion of causes in *Epitomae*.

71 BERNHARDI, *Epitomae* (see n. 7), fol. F7v: »Probe debent observari hae duae divisiones, viciose enim colligitur saepe ex causis impropriis et remotis, quo vero proximior propriae et propinquae causae una quaeque est causa, eo certiore notitiam rei adfert.« See also ibd., F8r–v.

72 On causal chains, see ibd., fol. G1r–v.

However, whereas in *Epitomae* Bernhardi uses cloth as an example of the immediate cause of a garment, in *De copia* he uses another kind of example, which does not relate to the immediacy in the causal chain but rather excludes an instrumental cause: the immediate cause of the killing is the killer, and not the sword. The use of this example, as well as the reference to Cicero's *Ninth Philippic* (9.7), indicates that in some cases, only intentional subjects are considered as immediate causes of some actions.⁷³

Furthermore, in *Epitomae* Bernhardi claims that the most powerful cause in conveying knowledge in natural philosophy is that which is most near not only to the immediate but also to the proper causes of a thing. Bernhardi defines a »proper cause« somewhat circularly as one from which an effect »properly follows.« The corresponding improper (accidental) cause is more clearly defined as an accident of the proper cause.⁷⁴

In *De copia* Bernhardi defines a proper (per se) cause in a more detailed manner. According to this definition, a per se or proper cause is one of which the effect »is necessarily and convertibly predicated as in a definition« and correspondingly an accidental cause is something of which the effect »is not necessarily predicated.« In *De copia* Bernhardi gives an elucidating example of what he means here by a convertible predication. It is apparent that a good poet is necessarily predicated as a cause of good verses and, conversely, whoever writes good verses is a good poet. In contrast, it is not necessary that Virgil is predicated of a writer good of verses and even less, that the cause of good verses is Virgil. Similarly, even in *Epitomae* Bernhardi had considered builders in general as the proper causes of buildings, whereas individual builders are counted among the accidental causes.

73 BERNHARDI, *De copia* (see n. 17), fol. P5r: »Causa alia est propinqua, immediata, ut homicida faciens caedem. Alia est remota et mediata, ut gladius homicidae, vel sica. Et rursum hoc quoque discrimen summopere est notandum. Vitiose enim plerunque a causis impropriis et remotis arguitur vel describitur quippiam, quia propriae et propinquae causae rerum debent investigari. Denique talis est disputatio in nona Philippica and occiderit Antonius Sulpitium, cum dederit causam mortis eius.«

74 BERNHARDI, *Epitomae* (see n. 7), fol. F6v–F7r: »Causarum alia est per se vel proprie, ad quam effectus proprie sequitur [...] alia est causa per accidens vel improprie, nempe quodlibet accidens propriae causae separabile vel inseparabile.«; F7r: »Quo vero proximior proprie et propinquae causae una quaeque est causa, eo certiore notitiam rei adfert.«

Individual causes are therefore counted as accidental causes, as are also accidental qualities of proper causes, such as the colors of material bodies. Thus in *De copia* Bernhardi concludes that every species is a proper efficient cause of its particular effect.⁷⁵

Again, in *De copia* Bernhardi notes that in addition to improper efficient causes also improper ends, such as abuse, are to be distinguished from proper causes. Thus it does not follow that even if drunkenness is bad, wine would consequently be bad in itself. Therefore it is »most stupid to judge the thing according to its abuse.«⁷⁶

The most central division of causes for a natural philosopher is the division into four natural causes (no. 4). In *Epitomae* Bernhardi notes how these causes can be classified into internal and external ones (no. 3),⁷⁷ but in *De copia* this notion goes unmentioned. In his general division of causes in *Epitomae*, Bernhardi defines the four causes only briefly, but discusses each more extensively in chapters 19–22. It should be noted that Bernhardi does not expressly reduce other classes of causes to the four causes, but considers the four causes as subclasses of natural causes.⁷⁸

4 *Theses for causes: the rules*

The latter part of chapter 10 of *Epitomae* is devoted to general rules about the functions and relationships between individual types of causes. These rules include the following:⁷⁹

75 BERNHARDI, *De copia* (see n. 17), fol. P4v: »Alia caussa est per se, id est, propria, de qua necessario et conversim praedicatur effectus tanquam in definitione, ut bonus poeta scribit bonos versus, et scribens bonos versus est poeta bonus. Sic quaelibet species est causa efficiens propria sui proprii. Alia est causa per accidens, id est, impropria, de qua non necessario praedicatur effectus, neque conversim, ut Vergilius scribet bonos versus.«; *Epitomae* F6v–F7r.

76 BERNHARDI, *De copia* (see n. 17), fol. P4v: »Sic abusus rerum est improprius finis rerum. Sed stultum est rem iudicare ex abusu potius quam a propria causa, vel effectu, ut si argumenteris: Ebrietas est a vino. Omnis ebrietas est vitiosa, ergo vinum est vitiosum vel malum.«

77 BERNHARDI, *Epitomae* (see n. 7), fol. F6r. See also TRUTFETTER, *Summa* (see n. 65), fol. c3r.

78 Cf. TRUTFETTER, *Summa* (see n. 65), fol. c4v, where the author considers universal (independent and dependent) and particular causes as sub-classes of efficient causes.

79 BERNHARDI, *Epitomae* (see n. 7), fol. F8v–G2r; *De copia* (see n. 17), fol. P6r–v.

1. The same thing can simultaneously belong to different classes of a cause.
2. Causes are contained in the definition of a thing.
3. Multiple (connected) causes can produce one effect.
4. One cause can produce multiple, even contrary effects.
5. Secondary causes are not operative without primary ones, or inferior without those that are superior (universal chains).
6. The necessary preconditions are not always causes of things, neither are all consequences always called effects.
7. The order of natural causes: the final cause moves the efficient cause, efficient cause prepares the material cause, which is subjected to it, and finally matter »entices« the form, which is the end of the actualization of the effect.
8. Singular causes may be inhibited by voluntary injuries, but universal causes cannot be inhibited (unless the cause of nature is annihilated).

It would be tempting to see an example here of methodical knowledge in the form of theses, which Bernhardi, as seen above, defined as a certain knowledge of the rules. The rules themselves only little hint at whether this was Bernhardi's understanding of them. Again, most of the rules are found in some form in Albert the Great (nos. 1, 3, 4, 5, and 7).⁸⁰ Some of them were apparently mentioned as general properties of causes in Tartaret (nos. 3 and 4)⁸¹ and Trutfetter (nos. 1, 3, 4, and 5)⁸² since they are also found in Aristotle or Albert. Therefore they are at least partially derived from the proofs presented in an authoritative source, in this case Aristotle or Albert. Bernhardi sees these two thinkers as models of methodical knowledge. Some of the rules are closely connected to or presuppose the above-mentioned classification of causes (at least nos. 1, 3, 5, 7 and 8), which also draws heavily on Aristotle and Albert.

The descriptions of the rules are mostly accompanied by examples which serve as immediate justifications of these rules. The same largely applies the classification of the causes. Here it should be noted that there is a certain variation in Bernhardi's choice of examples between *Epitomae* and *De copia*. The clearest difference is that in *De copia* several examples are drawn from the field of theology and ethics, in both the classification as

80 ALBERT, *Physicorum* (see n. 66), 124b (no. 5); 159a (no. 1); 128a (no. 7); 128b (nos. 3 and 4).

81 TARTARET, *Expositio* (see n. 65), fol. 20vb (C3vb).

82 TRUTFETTER, *Summa* (see n. 65), fol. d1r; d2r–v.

well as description of the rules. In the *Epitomae*, the examples are exclusively from the field of natural philosophy.⁸³

The use of theological examples suggests that for Bernhardi future theologians were an important audience whom he felt should use causal analysis as a tool for discussing theological problems. Bernhardi's Wittenberg colleagues were also eager to apply an analysis of causes to the theological problems at that time.⁸⁴ In his epilog to the *Epitomae* Bernhardi describes the benefits of the study of natural philosophy, and he begins with theology. He refers to the discussions of nature in the Scriptures, such as the first chapters of Genesis, and Paul's remark in Rm 1 about knowledge of God acquired through the contemplation of creatures.⁸⁵ However, the benefits are not confined to theology: other disciplines such as poetry and medicine are in many ways based on natural philosophy.⁸⁶ Earlier in chap. 26 he had also noted that in natural philosophy it is useful to discuss certain themes which properly belong to an introduction to ethics. These include a discussion of natural law and conscience.⁸⁷ Such remarks are not only meant to motivate students to study natural philosophy, but also reflect the status and function of the discipline within the university curriculum.

Since the theses are drawn very much from authorities and are presumably justified by argumentation found in those authoritative writings, they can be considered as a practical example of methodical knowledge, which Bernhardi describes elsewhere in theoretical terms. The accompanying examples confirm this impression, because they suggest the intellectual contexts where such methodical knowledge might be found to be valuable.

83 For the divisions, see BERNHARDI, *De copia* (see n. 17), fol. P4r: free choice as an efficient cause of morally good actions; *ibid.*, fol. P4v: abuse of wine causing drunkenness, as an example of an improper final cause; *ibid.*, fol. P6v: only faith justifies and brings about good works; only God, without human free choice, brings forth justification. For the rules, see *ibid.*: faith as an effect of God and an efficient cause of justification; bad habits corrupt good deeds.

84 See above nr. 48.

85 BERNHARDI, *Epitomae* (see n. 7), fol. 03r–04r.

86 *Ibid.*, fol. 04v.

87 *Ibid.*, fol. 13r.

VI Conclusion

Johannes Bernhardi seems to have systematized to a considerable degree the Melanchthonian theory of method and to have developed it towards an explicitly Aristotelian and even scholastic framework. In doing so, he did not merely imitate his authorities, who included above all Aristotle and Albert the Great: these figures served as sources for his Melanchthonian/Lutheran manner of organizing and presenting scientific knowledge in teaching. The above example from the discussion of causes shows that although Bernhardi did not draw a very radical conclusion from his methodological views, his methodological contribution did not remain at the level of mere theorizing, but was applied to some degree in the actual teaching of natural philosophy.