

## Theory and Practice of Logical Reconstruction

### Anselm as a Model Case. Introduction

Friedrich Reinmuth, Geo Siegart (Ernst-Moritz-Arndt-Universität  
Greifswald), Christian Tapp (Ruhr-Universität Bochum)

Logical reconstruction is a fundamental philosophical method for achieving clarity concerning the prerequisites, presuppositions and the logical structure of natural language arguments. The scope and limits of this method have become visible not least through its intense application to Anselm of Canterbury's notorious proofs for the existence of God.

This volume collects, on the one hand, reconstructions of Anselmian arguments that take account of the problems of reconstruction and, on the other hand, theoretical reflections on reconstruction with a view to Anselm. We hope that this will allow the reader to critically assess the merits of the theoretical accounts in the light of the reconstructions and the merits of the reconstructions in the light of the theoretical accounts. In general, by considering the example of an outstanding thinker in one or the other way, this volume aims at advancing the methodology and the practice of logical reconstruction.

The following remarks explain and motivate this undertaking: What purposes does logical reconstruction serve? What purposes does the reflection on logical reconstruction serve? In which ways can the practice and theory of reconstruction profit particularly from studying Anselm's reasoning? How can the resulting problems be addressed? – Finally, a short overview over the contributions to this volume is offered.

### Why logical reconstruction?

A major task of logic is to support the practice of argumentation and the evaluation of given arguments. However, since the development of formal logic that uses formal languages to circumvent the difficulties connected with the vagaries and complexity of natural language there has been a gap between logic on the one hand and the practice of argumentation carried out in ordinary language on the other hand (cf., for example, Kamitz 1979, 52–54). Nevertheless, formal logic has been developed as a tool for the analysis of natural language texts, sentences and propositions and has always been used accordingly. Thus, formal logic can be taken as a central part of an organon that supports reasoning in all fields, including reasoning in natural languages. Formal logic has not only been used to analyse natural language sentences and arguments of a certain type or area of discourse (e. g. descriptions, arithmetic, analysis or set theory), but also to assess the merits and demerits of natural language texts as utterances of particular authors, e. g. Carnap's (debatable!) assessment of Heidegger's 'das Nichts nichtet' in Carnap 1931.

It seems universally acknowledged that the paraphrasing of a natural language text into a formal language argument that is necessary in order to apply logical tools to it "is just as essential to the application of logic as the test or proof of implication for which that

preliminary task prepares the way" (Quine 1959, 40). However, what seems to have been somewhat neglected is the fact that such a paraphrase is essentially an *interpretation* of the paraphrased text if we deal with texts of other authors and claim that our paraphrases tell us something about these texts as productions of their authors. So, focusing on the case in which the author is doing the paraphrasing himself, Quine remarks on the "work of paraphrasing ordinary language into the [logical] theory":

By developing our [logical] theory strictly for sentences in a convenient canonical form we achieve the best division of labor: on the one hand there is theoretical deduction and on the other hand there is the work of paraphrasing ordinary language into the theory. The latter job is the less tidy of the two, but still will usually present little difficulty to one familiar with the canonical notation. For normally he himself is the one who has uttered as part of some present job, the sentence of ordinary language concerned; and he can then judge outright whether his ends are served by the paraphrase. (Quine 1960, 159)

This is clearly not the case when we paraphrase ordinary language into the language of a logical system in order to interpret a text written by somebody else. This holds particularly if we deal, as we commonly do in interpreting texts from the philosophical tradition, with texts from distant times and cultures, texts produced by authors whose background and situation is foreign to us. However, this way of interpreting texts also plays an important role in the philosopher's toolbox: One often is in need of a precise paraphrase of a text that admits the application of a logical theory and that can be defended as an accurate interpretation of the text as well – at least with respect to those aspects of it that are of concern to the interpretative enterprise at hand. Reversely, especially when dealing with texts that have given rise to complex and highly adversarial interpretative debates, we may or should aim at interpretations that are precise and not in need of reinterpretation (cf. Scherb 2000, 41–42, 46).

The result of a logical reconstruction of a natural language argument, which we may call a *reconstruens* of the natural language *reconstruendum*, is an argument whose premises or reasons are explicitly stated and whose inferences can be effectively checked for correctness. Logical reconstruction thus leads to logically explicit arguments that fulfill Frege's demands for explicitness (see, for example, 1879, iv, and 1893/1903, vol. 1, VI–VII). Note that we distinguish between reasons and assumptions. Both reasons and assumptions serve as premises, but reasons are adduced in support of the thesis and have to be established elsewhere, while assumptions are made "for the sake of the argument" and have to be discharged if the argument is to be intact.

Constructing logically explicit paraphrases of natural language arguments is not an end in itself. Logical reconstruction is an interpretative enterprise and *reconstruentia* provide the basis for further analysis and interpretation, particularly with regard to the argument's reasons. Logical reconstruction is often an indispensable tool for addressing questions concerning the quality of the original argument, but answers to such questions cannot normally be gained by simply assessing individual *reconstruentia*. In particular, an assessment of the reasons will normally require further analysis of the author's language, not least through logical reconstruction of relevant parts of the context of the argument in question. So, for example, it would seem preposterous to assess the quality of the reasons of Anselm's argument in the second chapter of the *Proslogion* without examining Anselm's use of predicates such as 'esse in intellectu', 'maius' or 'esse in re' in other texts

or without analyzing Gaunilo's criticism of Anselm's use of his 'unum argumentum' and Anselm's response to this criticism; at least if one wants to assess the reasons on Anselm's terms.

### Why reflection on logical reconstruction?

Despite the fact that logical reconstruction plays an important role in our philosophical practice, when it comes to the application of logic to natural language texts and sentences, the standard treatment in logic textbooks and in the research literature is very much skewed towards either the formalization of relatively simple sentences or to the fine-grained analysis of certain types of sentences or arguments, whereas the interpretation of philosophical texts by logical means receives relatively little attention. Instead, the reflection on and guidance of the interpretation of natural language arguments has been largely outsourced to Informal Logic and Critical Thinking.

Moreover, with regard to the development of the philosophical curriculum there has recently been a growing tendency (at least in German speaking countries) to replace Logical Propaedeutic by courses with titles such as "Philosophical Argumentation" or "Critical Thinking" in which instruction in formal logic plays at best a subordinate role. This change of the curriculum is at least partly motivated by the fact that students often complete their logic courses without being taught how to use logic as an interpretative tool. Students are sometimes not even able to regiment and evaluate their own arguments, since they have not learned how to relate ›real‹ and not readily formalizable natural language arguments to the logical systems they were taught. Consequently students (and often their teachers as well) feel that logic is of little use to them. This seems an unfortunate development, because formal logic can obviously be a, and sometimes the, means of both rational self-assessment and of fine-grained interpretation and analysis of philosophical texts and positions. This situation is not helped by the fact that logicians and philosophers who are explicitly committed to logic often tend to ignore that even their beloved logic needs a convincing institutional role. Aside from the fact that logic as such forms a respectable subject, one central line of its justification consists in demonstrating its hermeneutical usefulness, i. e. its undeniable usefulness for the understanding, interpretation and reconstruction of philosophical texts. In order to achieve this and to ensure that students are able to make such use of logic as it and they deserve, it seems essential that the theory of logical reconstruction, which has been somewhat neglected up to now, be developed and made teachable and learnable in a systematic way.

To state the (maybe not for everyone) obvious: Of course, the strategies, tactics, hints and clues of informal argumentation theory – philosophical and otherwise, of "Critical Thinking" and "Informal Logic" have to be taken into account and the theory of logical reconstruction has to be integrated in a general hermeneutics. Construing a reconstruens of a natural language reconstruendum is seldom trivial and even less a mechanic procedure. To give a first impression: The reconstructor has to separate the reconstruendum from its context. He has to tentatively identify a thesis, to form first conjectures regarding the structure of the argument and to distinguish between passages that are argumentatively relevant and those that are not etc. After such preparatory work has been carried out, he may start thinking about which reconstruens languages would seem suitable in principle. What

(type of) grammar is the reconstruens language to have? Which logic is to be chosen? Only then starts the proper work of reconstruction, which is anything but a matter of freewheeling arbitrariness.

However, the theory of reconstruction does not only have to guide the practice of reconstruction, but also to provide criteria for evaluating the quality of reconstructions. It is not only to be expected, but, as Anselm's case shows, actually happens that several reconstruentia are proposed for one text. In order to deal with such cases, criteria for comparing reconstruentia of a text with regard to their quality have to be developed. Furthermore, it has to be explained, to what extent and under what conditions the evaluation of a reconstruens may be transferable to the reconstruendum. – It seems uncontentious that a comprehensive theory of reconstruction is an urgent desideratum. One aim of this volume is to contribute to such a theory by bringing together three recent accounts of the enterprise of logical reconstruction.

### Why Anselm?

As already remarked above, this volume has the aim of fostering and promoting the practice and the theory of reconstruction. Given this aim, there are at least two related reasons for choosing Anselm's work above all others to provide the historical focus of this volume. On the one hand, the argumentative parts of the second and the third chapter of the *Proslogion* are by far the most reconstructed texts of the philosophical canon. On the other hand, the field of competing and often incompatible reconstructions, hardly surveyable even for specialists, poses a challenge to any theory of reconstruction.

The *Proslogion* (ca. 1077/78) of Anselm of Canterbury (1033/34–1109) is for many theologians and philosophers "the most fascinating work within the history of philosophical theology" (Holopainen 2009, 590). Starting with Anselm's contemporary Gaunilo, the second and third chapter of the *Proslogion* have been at the center of attention and now constitute in almost every respect a *classical document* of the history of ideas: Read, fascinated, through the times, occupying a distinguished place in academic teaching, quoted time and again by friends and opponents, giving rise to many different interpretations, constantly the object of controversies with regard to its claims and possessing extraordinary inspirational qualities. "It would be hard to find another argument which has so fascinated and teased so many minds" (Campbell 1976, 1).

This fascination is also documented by the fact that, since the 1960s, analytic philosophers have shown an ever stronger interest in arguments for the existence of God in general and ontological arguments in particular (Hasker 2005). Several contributions in the early phase of this debate displayed Anselm's influence even in the titles of their papers or books. Seminal publications bore titles like "Anselm's Ontological Arguments" (Malcolm 1960), "What Did Anselm Discover?" (Hartshorne 1962) and "The Ontological Argument from St. Anselm to Contemporary Philosophy" (Plantinga 1965). In the 1970s, the debate was pushed forward by an influential critical paper by David Lewis (1970) and Alvin Plantinga's subsequent formulation of a valid ontological argument in the context of a rigorous assessment of modal logic (Plantinga 1974). (Oppy 1995 offers a helpful classification of different types of ontological arguments.) Finally, the posthumous publication in 1995 of an ontological argument by Kurt Gödel removed last doubts as to whether ontological

arguments form a respectable and interesting topic of the philosophy of religion, which can be dealt with in accordance with analytic standards. By now, all major handbooks on the subject include non-“history only” entries about ontological arguments. The lively debates about such arguments and the high level of logical sophistication applied testify to the enormous effect Anselm’s reasoning has had on the history of philosophy.

The attraction that is still displayed not only by arguments inspired by Anselm, but also by his original arguments can be partly explained as follows: First, Anselm deals with a question, namely the question of the existence of God, which (however existence may be understood) is of existential relevance for many, though not all, readers and interpreters. Second, the text leaves many recipients with an impression that oscillates between stroke of genius and legerdemain; and, naturally, one wants to know which impression is right. – One can further ask why the text captivates especially the interest of reconstructors, thus of interpreters well versed in logic. One reason may be that existence, definite descriptions and modality, which seem to play a key role in Anselm’s reasoning and in the corresponding reconstruentia, are genuinely logical subjects.

As remarked above, Anselm’s proofs and in particular those in chapters 2 and 3 of his *Proslogion* have given rise to a magnitude of formal arguments which seems hardly surveyable. Here it may be helpful to employ Rescher’s distinction between creative and exploitative interpretation, i. e. interpretation that uses the interpreted text primarily as a repository of ideas or a foil for one’s own endeavours on the one hand, and exegetical interpretation, i. e. interpretation that aims primarily at “understanding the position of the author of that text” (2001, 60) on the other hand. This distinction matters also with regard to the assessment of interpretations: For example, there are authors who put forward a creative or exploitative interpretation of Anselm’s arguments and who are nevertheless under the impression that they have arrived at a tenable exegetical interpretation. Yet, what may be acceptable as a creative or exploitative interpretation can be simply beyond the pale as an exegetical interpretation.

Reconstruction, as it is understood here, is a form of exegetical interpretation. A first orientation in the field of reconstructions can be achieved by answering the following questions: (i) What type of grammar does the reconstruens language have? Does the reconstructor get along with a first-order grammar or does he use a second-order grammar? In both cases one can additionally ask whether variable-binding and term-generating operators, e. g. the definite or indefinite description operator, are used. (ii) What kind of logic does the reconstruens language have? Are the logical core connectives and quantifiers governed by classical rules or are the connectives governed by, for example, intuitionistic rules, while the quantifiers and the identity predicate are regulated in accordance with free logic? If definite descriptions play a role, a decision for one of the available theories of definite descriptions has to be made. If modal operators come into play, one has to choose among the available modal logics. (iii) Is the reconstruens vertically intact or vertically defective? (iv) What claims are made regarding the reconstruenda and with which strength are these claims put forward? With regard to reconstructions which result in vertically defective reconstruentia it seems remarkable that often exactly one fatal flaw is “detected” and attributed to Anselm, though these fatal flaws differ from reconstruction to reconstruction (for two elaborate examples see Morscher 2004, Millican 2004).

If one takes into account that reconstructors choose grammatically and logically quite different reconstruens languages and use these different languages differently and also

bears in mind that Anselm’s texts are, particularly in key passages and phrases such as “quod maius est”, often plainly elliptical, the plurality and diversity of reconstructive proposals seems hardly surprising. Astonishing is rather the understanding of reconstruction and of the role of logic that is expressed by Rudolf Carnap’s claim “that modern logic, independently of any particular philosophical point of view, had definitely shown the alleged proof [i. e. ‘the ontological proof for the existence of God’] to be logically invalid” (1963, 41).

## The contributions

This volume brings together papers on the theory of reconstruction that pay attention to the humdrum exercise of everyday reconstruction and papers that develop reconstructions of Anselmian arguments with a view to the theoretical problems of reconstruction. The former group (theory of reconstruction) comprises papers by Georg Brun, Winfried Löffler and Friedrich Reinmuth, the latter group (reconstructions of Anselmian arguments) papers by Peter Hinst, Geo Siegwart and Christian Tapp.

## Papers that reconstruct Anselmian arguments

Peter Hinst develops a reconstruction of the main argument in chapter 2 of Anselm’s *Proslogion*. He proceeds by way of a piecemeal analysis that takes every sentence of the original into account. As is well-known, reconstructing this text demands substantial interpretative input as well as substantial additions. The elliptical formula ‘quod maius est’, for example, is interpreted by Hinst as saying that of two individuals the second is greater (maius) than the first, if the second has all greater making attributes which the first has and also exists in reality, but the first does not; and a substantial addition concerns the thinkability talk. Hinst also tries to explicate Anselm’s maius predicate in terms of a perfection predicate and develops a general proof of Anselm’s theorem, i. e. the proposition that something/that than which something greater cannot be thought has all greater-making attributes.

Geo Siegwart’s paper deals with the island parody in the sixth chapter of the *Liber pro insipiente*. This parody constitutes the rhetorical and widely known climax of Gaunilo’s criticism. The main objective of the paper is a logical reconstruction of the parodying argument that stays close to the text. The author then proceeds to present a detailed comparison between parodied and parodying argument and describes their common structure. The parodied argument is identified as the proof in the second chapter of the *Proslogion*, more specifically, this proof as it is represented by Gaunilo in the first chapter of his *Liber pro insipiente*. Further considerations concern the nature and function of parodies of arguments. Siegwart argues that parodying does not add new pertinent points of view to the usual criticism of an argument, although parodying an argument can be a rhetorically effective way of drawing attention to its weaknesses.

Christian Tapp takes a uniqueness argument from Anselm of Canterbury’s *Monologion* into focus. In his paper, he first presents a preliminary reconstruction of Anselm’s argument for the uniqueness of that by virtue of which everything existing has its being (chapter 3

of the *Monologion*). This argument, as reconstructed, suffers from several weaknesses. Therefore, Tapp tries to improve upon them by following Anselmian hints that are much too easily overlooked, like that if *x* exists through *y* and *y* through *z*, then *x* exists more truly through *z* than through *y*. In this way, he arrives at a second reading that results in a vertically intact reconstructions. In Löffler's terminology, this second reconstruction belongs, however, more to the category of "the best one can make of it"-reconstructions than of the purely exegetical ones. In the end, Tapp's reconstruction shows how Anselm's uniqueness argument depends on several principles of an Anselmian metaphysics like the existence of causes for having the same nature or the exclusion of infinite regresses of beings – premises that are somewhat hidden in the reconstruction.

While Hinst focuses on the second chapter of the *Proslogion*, Siegart and Tapp broaden the focus beyond the divine existence proofs from the second and third chapters of the *Proslogion*. Thereby they exemplify the growing tendency to pay attention to larger parts of Anselm's philosophical theology which is called for, not least, by the need for interpretational remedies in understanding the enigmatic and extremely condensed most famous two chapters of the *Proslogion*.

### Papers that reflect on the methodology of logical reconstruction

Georg Brun's paper tries to show how reconstructions may be justified by showing that a wide reflective equilibrium has been achieved. Brun first gives an account of the use of logical reconstruction in assessing the validity of ordinary language arguments. He identifies several (sub-)tasks of logical reconstruction with partly antagonistic goals: extracting argumentations from texts, breaking up complex argumentations into individual arguments, framing arguments in standard form, as well as formalizing arguments and showing their validity with the help of a logical formalism. He points out that these tasks interact in various feedback loops, and that they are intertwined with the development of theories of valid inference and adequate formalization. Brun then explores how the method of reflective equilibrium can be used for modelling the complexity of reconstructions and for justifying the various steps involved. He illustrates and tests his approach in a detailed reconstruction of the beginning of Anselm's *De casu diaboli*.

Like Brun, Winfried Löffler tries to show how reconstructions may be justified when some kind of wide reflective equilibrium has been achieved. Löffler proposes that a logical formalization of a natural language text (especially: an argument) may be regarded as adequate if the following three groups of beliefs can be integrated into a wide reflective equilibrium: (1) our (memories of) our initial, spontaneous beliefs about the structure and logical quality of the text; (2) our beliefs about its structure and logical quality according to the formalization, and (3) background beliefs about its author, his thought and other contextually relevant factors. Unlike a good part of the literature, he claims an indispensable role for the initial beliefs about the quality, structure and content of an argument on the way towards such a wide reflective equilibrium. In the final sections he argues that his approach does not succumb to undue subjectivism or the mere perpetuation of prejudices, as the initial beliefs may well be adapted during the reconstruction process. The examples to illustrate his claims are chiefly taken from the second and third chapter of Anselm's *Proslogion* and the various attempts to formalize these texts.

Using a short excerpt from Anselm's *Responsio* as an example, Friedrich Reinmuth presents logical reconstruction as a special type of exegetical interpretation by paraphrase that is subject to (adapted) hermeneutic maxims and presumption rules that govern exegetical interpretation in general. As such, he distinguishes logical reconstruction from the non-interpretative enterprise of formalization and from the development of theories of logical form, which provide a framework in which formalization and reconstruction take place. Reinmuth sees logical reconstruction as dependent on methods of formalization. He argues, however, that it allows us to use formal methods for the analysis and assessment of natural language texts that are not readily formalizable and is thus an important tool when it comes to applying the concepts and methods of formal logic to such texts.

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