Chapter 9
Ramus and Leibniz on Analysis

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1 Introduction

In a recent article, Stephen Daniel suggests that retrieving the Ramist context of
Leibniz's philosophy allows one to appreciate how reasoning, for Leibniz, is mod-
eled on discursive and legal strategies (Daniel, forthcoming). As Daniel points out,
in marginal notes and early works such as the *Dissertation on the Art of Combina-
tions* (1666) and the *New Method of Discussing and Teaching Jurisprudence* (1667),
Leibniz occasionally invokes Ramist themes by name, usually in order to highlight
the link between logic and discourse.[1] Daniel argues that Ramus' portrait of the art
of reasoning as "the art of discourse" (*virtus disserendi*) implies that in terms of the
rhetorical character of discursive strategies, logic is said to reveal the structure of
thought and reality. Daniel indicates that, with respect to Leibniz's description of
a universal language, according to the first (two volumes) Latin edition of Ramus'
Dialectical Institutions (1543), reality is structured according to a natural dialectic
by which God communicates the order found in things themselves.[2] Furthermore,
he proposes that Leibniz recognized how this reorientation towards the ontological
potential of a logic of discourse informs Nizolius' *On the Principles and the True
Reason of Doing Philosophy*,[3] and that this caused Leibniz to reprint it in 1670.

In the present chapter, I argue for two claims: (1) In the 1547 edition of the *Di-
alectical Institutions* – the first three volumes Latin edition that came out under his
own name[4] – Ramus explicitly dissociates human discourse from truth in the Divine
mind. Rather, he holds that dialectics is founded on innate, natural capacities of the
human mind which function as a substitute for insight into Divine truth. According
to his view, analysis has the task of disentangling the elements of common human
discourse, thus providing us with examples, which subsequently, in the process of
genesis, fulfill the function of models for forming new discourses. (2) Leibniz's atti-
tude towards Ramus is not a matter of simply accepting or rejecting such an account
of the role of analysis in the constitution of discourse. On the one hand, Leibniz does
not accept Ramus' views about the connection between analysis and the function of

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examples as models for constructing new discourses. According to Leibniz, rather, analysis provides us with the concepts and truths that function as starting points for demonstrative arguments. On the other hand, he shares with Ramus the view that philosophical analysis can only explicate what implicitly already is known. As for Ramus, for Leibniz analysis has a purely descriptive starting point in the common usage of language.

2 Ramus on Analysis

In the 1547 edition of the *Dialectical Institutions*, Ramus is explicit about the natural origin of dialectics. He writes:

> Dialectics is made available, like the ability to other arts, by nature, doctrine, and exercise. For nature endows us with the principle of discourse, doctrine shapes what we are endowed with through its own and appropriate precepts, exercise puts what is taught by art into work, and thus accomplishes it (DI 1).

Moreover, he claims that instruction in dialectics brings to light natural inclinations:

> If this boy is to be instructed, he is naturally inclined to reason: and he would, even if less strongly, achieve this on his own: in a much more certain and constant way, however, by the application of the known precepts and exercises of the art (ibid.).

According to his view, the art of dialectics, therefore, has to consider the limits of the natural inclination towards discourse, and has the task of giving precepts that are in accordance with the natural use of reason (DI 1–2). In the 1543 edition already, Ramus maintains that examples belong essentially to the natural use of reason, such that other – demonstrative – forms of reasoning cannot replace examples:

> I want art, and the exercise of art, to be conjoined with nature: and since the whole life of a human being should be nothing but the use of reason, that is, the exercise of natural dialectics: let us think about and exercise the art of reason, or natural dialectics [. . .] during our whole life in all things; in this way [. . .] we will realize that an art is known not so much by means of precepts but by means of exercise, and that much of what as schoolboys we thought to be idle and dry we admire as old men, when we are most diligently versed in this use; and sense itself informed by custom and examples shows something that quiet thought, even the most acute one, was unable to understand (Ramus 1543: fol. 54).

Whereas in the 1543 edition, Ramus characterizes natural capacities of discoursing as mirroring the discourse in the Divine mind,[5] in the 1547 edition, he understands the natural use of examples as a substitute for the insight into Divine truths. It becomes clear that human discourse, according to Ramus' modified view, is unable to provide insight into the eternal order of things when, in the 1547 edition, he writes about the sublime nature of philosophy:

> This all appeared to Plato, so that he said that it is not an invention of human beings but of gods [. . .] But if the access to this artful path is barred, he makes another way by means of the force of intelligence and prudence, and employs all help of nature, custom, use, life, and examples, since he is deprived of the benefits of doctrine: and as if thrown into the tempest

in the Ocean (since he cannot keep his course) he changes his navigation, and with whatever
winds he is able to use, he directs his vessel undamaged to the port (DI 133–134).

As we shall see here, the dialectical use of examples plays a crucial role in Ramus'
account of analysis. The logical structure of the use of examples is also one of the
central topics in his account of invention in the first book of the *Dialectical Insti-
tutions*. According to Ramus, "Invention is the doctrine of thinking and finding an
argument, i.e., a reason suitable to explicate a question" (DI 3). Invention takes place
by using concepts that make such an explication possible. In this sense, he regards
categorical concepts as *loci* fulfilling this function in the constitution of discourse.
He differentiates them by using the traditional distinction between innate (*insita*)
and conventional (*assumpta*) concepts (ibid.). Among the innate, non-conventional
concepts, he counts causal concepts such as those of final, formal, efficient, con-
serving, and spontaneous cause (see DI 3–11). These concepts are not character-
ized as something derived from juridical contexts. In this sense, it is misleading
to claim, as Daniel does, that for Ramus reasoning is "modeled on discursive and
legal strategies". Rather, he describes concepts such as those of different causes as
applied to, but not formed in a juridical context: "This kind of causes of spontaneous
and non-spontaneous agents is of great use. This kind, namely, in the first instance,
is taken into consideration in the estimation of praise and blame, punishment and
reward" (DI 13–14). Legal discourse provides us with examples of the application
of causal concepts, not because of generating them, but because applying them in
a particular clear way. In this sense, passages from rhetorical works provide perfect
examples of the ordinary use of these concepts. Ramus claims, "We can derive from
the common use [*communis usus*] of simple prudence all the testimonies of all the
merits of dialectics" (DI 172). That is why he points out that, when using examples
from literary and rhetorical works, he understands poets and orators as "famous
and illustrious witnesses of this common sense [*communis sensus*], and of human
prudence" (DI 172–173). He also puts it thus: "The art of dialectics has as its subject
and aim to explicate the natural use of reason as it is impressed on great minds, in a
certain custom, in perfect examples" (DI 21). Passages from juridical and rhetorical
works function as examples because they represent a conceptual structure common
to all human discourse. Because they represent natural, innate, concepts, juridical
examples fulfill a logical function by defining what the correct use of expressions
in the formation of a new discourse consists in. Insofar as these examples repre-
sent innate, non-conventional concepts, the invention of new arguments is based on
something that implicitly is known already.

   This has interesting consequences for the logical structure of arguments, which
use one or several particular instances. According to Ramus, arguments using exam-
ples are non-syllogistic in character, as are those using induction. Walter Ong, who
holds that induction and examples, like enthymemes, are "all merely syllogisms for
Ramus, with one or another part suppressed or understood" (Ong 1958: 186–187),
misses this crucial point. Ramus holds that induction and examples have a function
different from that of syllogisms. He writes: "Induction is not the name of an argu-
mentation [*argumentatio*]: but of an argument [*argumentum*] taken from the *locus*

of distribution: For when parts are enumerated in order to conclude something about the whole, this is called induction [...]" (DI 112–113). And again:

> [E]xample is the name of an argument, not of an argumentation, and it is almost an image of the things that are dealt with: and it differs only in this from induction, that induction either collects all, or most parts. An example takes only one [...] Thus, induction and examples do not pertain to judgment but to the *locus* of invention having to do with parts (DI 113).

Thus, induction and examples are not enthymemes, i.e., imperfect syllogisms that by addition of a further proposition could be turned into perfect syllogisms. In this sense, arguing by means of particular cases as in the use of examples and induction, in Ramus' view, has an irreducible, non-demonstrative, logical form.

Ramus' discussion of syllogisms in the second book of the *Dialectical Institutions*, too, prepares the account of the nature of analysis in the third book. What is of interest to Ramus in syllogisms is not that they provide us with a form of demonstrative reasoning involving logical necessity. Rather, he emphasizes the pragmatic role of a syllogism as an answer to a given question:

> The syllogism, like the other precepts of this art, has to be derived from the common use [*usus communis*] [...] A syllogism will be the constant & firm combination of an argument with a question, from which the question itself is judged to be true or false (DI 78).

According to his view, even if a syllogism is given as an answer to a question, the judgment about truth or falsity is not a matter of logical necessity. Rather, he ascribes to the syllogism a function in the weighing of reasons. This is why he thinks that the term "ratiocination" has a metaphorical connotation derived from what happens in calculating sums:

> A syllogism is the common rule of judging about all things. In Latin, it is called an argumentation [*argumentatio*] and a ratiocination [*ratiocinatio*]. An argumentation, because it is a combination of an argument...with a question. It is called a ratiocination and a syllogism for one and the same reason [...] [B]oth terms seem to be transferred from numerical reasoning: or from there the similitude is transferred here: as good calculators find out by adding and subtracting what sum remains, dialecticians by adding and subtracting parts, explicate the sum of some reasoning (DI 78–79).

As he indicates, what is crucial for the weighing of reasons is not the correct expression of the logical form of a syllogism. Rather, he ascribes to the human mind a capacity of weighing reasons, which works independently of the formal correctness of a syllogism:

> We would render the art ridiculous, if we stated that human beings did not posses any stable judgment unless it were expressed by means of three terms: a belief has to be weighed [*ponderanda*], not that terms have to be counted [*numeranda*].[6] And since the seat of the natural judgment is not in the tongue and hand but in the intellect and mind: the reason of the artificial judgment can be got not from words that are expressed by the voice or scripture but from the inner sense of speech (DI 84).

Hence, even given formal correctness, the validity of syllogisms derives from the sense of the concepts expressed by signs, and which underlies the natural capacity of judgment, whether or not formal connections between signs are established. That

is why syllogisms are described as an instrument in the process of weighing reasons, a process that can take place even without formal tools.

Ramus' pragmatic conception of syllogism is connected with his views on analysis. Obviously, using a syllogism in weighing reasons presupposes a clear grasp of the reasons to weigh. Indeed, later in the *Dialectical Institutions*, Ramus ascribes a further pragmatic function to syllogisms, namely, the function of making the parts of a complex discourse perspicuous:

> [T]he main utility of the syllogism lies in unweaving [*retexendis*] longer discourses, which frequently happen to be rather obscure: such that when you distinguish many syllogisms in the parts of continuous and long speech, you embrace its sum total in one piece minus all amplifications, but [. . .] with a succinct grasp of the headings of arguments (DI 159).

"Unweaving" the parts of complex discourse lies at the heart of Ramus' conception of analysis. The function of syllogisms in unweaving a complex discourse therefore is part of what analysis has to accomplish. Ramus discusses analysis in the third book of the *Dialectical Institutions*, devoted to the role of exercises in acquiring the art of dialectics. Analysis, as a part of the exercises of the dialectician, is related to innate, natural, human capacities in a direct way:

> Of the three parts that are necessary for discoursing, nature & art are now briefly [. . .] outlined: now we have to treat exercise (which still is left over) equally with a few words: which puts nature, instructed by art, into act (DI 136).

As in the case of syllogisms, the function of analysis is to enable the survey of the elements of a complex discourse:

> Dialectical analysis [. . .] is a given art unweaved [*retexta*] [. . .] Thus, at first, analysis un-weaves the whole work it undertakes to explicate from the headings: it distinguishes the question that is proposed to the interlocutor: it inspects the arguments by means of which it is treated: and it specifies where the *loci* are taken from, and their law and nature: and finally it spells out the disposition given to the proposed topic (DI 136–137).

In this way, analysis contributes to defining the elements of the art of discoursing. The place of definition in analysis, however, is a somewhat specialized one, which should be recognized in order to understand correctly Ramus' notion of analysis. Ramus distinguishes two kinds of definition. A definition in the proper sense "explicates what the thing itself is by means of the causes that constitute the proper and true nature of a thing [. . .]" (DI 68–69). In addition to this kind of causal definition, he acknowledges the importance of another kind of definition: "[W]hen we also use other arguments to explicate what it is that is asked, we call it a description [. . .]" (DI 69). Analysis can be understood as providing the second kind of definition – a description of the elements of discourse. Ramus characterizes the aims of description as follows:

> And in this way, whole volumes in good authors are filled with definitions that are more perspicuous than short. And the reason of this whole kind of definition lays not so much in brevity as in perspicuity [*perspicuitas*]. Since not only for the sake of memory alone (which brevity supports), but much more for the sake of understanding, which perspicuity brings about, the route of giving definitions is demanded (DI 71).

In this sense, analysis provides the practitioner of dialectics with an understanding of the elements of discourse by representing them in a way that makes their survey easier. Subsequently and complementing analysis, it is the task of genesis to use examples in the formation of new discourses:

> Genesis is not the inspection of a proposed example like analysis but the production of a new work; which meditation follows exactly the same way as writing and teaching. In writing the first and easiest way is imitation; in which we have to observe carefully the one we imitate: to whom we want to be similar [...] Then we will have to make endeavors for ourselves, and set out a free argument about ordinary and popular affairs, and what pertains to everyday life [...] when we take causes, effects, and other kinds of (acceptable) arguments from the sources of invention; finally we make use of all modes of disposition with equal diligence [...] (DI 161–162).

Thinking about analysis and genesis in this way ascribes a logical function to examples taken from the ordinary use of language: due to the similarity of relations between examples and elements in new works, they function as norms for judging the parts of new discourses. At the same time, the function of analysis is detached from the task of constructing demonstrative knowledge.

3 Leibniz on Analysis

The claim that analysis is detached from constructing demonstrative knowledge is the main point where his 16th and 17th century critics departed from Ramus.[7] Leibniz's views on analysis relate to 16th and 17th century debates about Ramism through his response to Hermann Conring's preface to the centenary edition of Bartolomeo Viotti's *On Demonstration* (1561). Leibniz's response should not simply be seen in terms of accepting or rejecting claims made in the Ramist tradition. Rather, his response should be seen as an attempt at positioning his own view of the nature of analysis in the broader context of theoretical alternatives developed in the controversy between Ramus and his critics. As it turns out, Leibniz's views on analysis are much closer to Viotti's than to Conring's. Although he shares some of Viotti's and Conring's objections to Ramism, he also shares some views that are common to Ramus and Viotti.

In *On Demonstration*, Viotti takes the following line of critique against Ramus and Ramism:

> [I]f it is true that we have knowledge of something, and not only an opinion, it suffices that this can be derived from the fact that it is impossible that things could stand otherwise; however, this we get through a proof, not through some other kind of reasoning [...]
>
> Hence, if the necessary medium is that which establishes a connection such that we attain knowledge, it connects by way of some kind of argumentation, not by means of examples or enthymemes, since these are instruments of the orators, not of the philosophers; they are invented for the purposes of persuasion, not for the search after truth (Viotti 1561: Book I, Chapter 5).

Subsequently, he discusses a possible line of attack against this proof-oriented conception of knowledge:

That nothing is deduced but from known principles is admitted by all sects, as well as those who defend the claim that everything can be demonstrated, as well as those who defend the claim that nothing or only something can be demonstrated. But they prove that the principles cannot be known, as follows: What is known is known by means of proof. But the principles cannot be known by proof. Hence, they are not known [...] (Viotti 1561: Book I, Chapter 6).

Viotti responds by rejecting the assumption that everything that is known is known by means of proof. He argues that "the first beginnings of demonstrating, which are assumed as perspicuous [*perspicua*] beyond proof from the senses & the intellect, are not only known, but more known than those that are proved by means of them" (ibid.). Viotti is non-committal as to the metaphysical status of concepts and principles accessible by the light of the intellect, and only investigates their logical role in the formation of proofs (Viotti 1561: Book II, Chapter 3). He gives the following account of how knowledge of definitions that serve as the starting point of definitions can be acquired:

There is a paved and easy way open for us, on which we get to the essential definition: this is by means of the term associated with the given concept. When, e.g., you want to investigate the essence of pulse or fever, it is necessary to begin with the term in order to grasp the concept all human beings have of pulse [...] The interpretation of the term brings all accidents to light, from the knowledge of which we proceed to the knowledge of the substance and nature of the thing [...] Insofar as you, by examining and interpreting the common concept which all human beings have about this term "moon", you could say that everyone understands by "moon" some heavenly body which appears at the heavens at some determinate time in the night and illuminates the earth in various forms [...] But this I want to be eternal: for investigating essential definitions, the mentioned interpretation of terms is a big help (Viotti 1561: Book II, Chapter 11).

In his preface, Conring objects that "all argumentation gains true and certain knowledge solely from that which is necessary in itself". In particular, he applies this view to jurisprudence and political science:

I have validated extensively the Civil science and its proofs in my book entitled *On Civil and Political Prudence*[8] [...] But moral philosophy differs in nothing with respect to certainty or the way of proving from the Civil one [...] (Conring 1661: [xxi]–[xxii]).

Apart from this strategy, Conring applies a type of proof based on the interpretation of revealed precepts in the Holy Scripture. As he points out, "even this kind of reasoning is a true demonstration, gaining knowledge, however not absolutely, but only hypothetically" (Conring 1661: [xxiii]). Accepting such a hypothetical type of demonstrative knowledge modifies Conring's overall views on the role of proofs in political and juridical matters. Nevertheless, it is clear from these remarks that Conring tries to defend the view that, apart from cases of revealed truths, demonstrative knowledge requires definitions and axioms which are necessary in themselves rather than the outcome of the analysis of ordinary concepts.

In his letter of January 3, 1678, Leibniz rejoins to Conring:

With what you say about that in all disciplines and even in particular cases there are proofs, I perfectly agree. Since even in matters of fact, when both sides fight with presumptions and conjectures, it is possible to define accurately, on which side, seen from the given

circumstance, the greater probability lays. Hence, the probability itself can be proved, and its degrees can be estimated [...] (GP 1 187).

Thus, Leibniz takes sides with Ramus' critics in defending the distinction between probable opinion and demonstrative knowledge. Moreover, he tries to extend the realm of demonstrative knowledge by rendering probabilistic calculations demonstrative – conditional on a given estimation of degrees of probabilities. However, he adds a serious objection:

> I regard axioms not, as you say, as something apodictic but only as something that in most cases does not require a proof. Yet that they are demonstrable, I believe to be certain. Whence does it come that we are certain about their truth? As I believe, not from induction, since in that way all sciences would be rendered empirical; thus, from themselves, i.e. from their terms, which happens when the same is said of the same (e.g., A is A, everything is equal to itself, and similar identical propositions) or when only from the signification of terms or, what is the same, from the understood definition the truth of the proposition is apparent [...] (GP 1 187–188).

Hence, according to Leibniz, the axioms used in demonstrations are not self-evident or revealed, as in the conception of Conring. Rather, they are themselves accessible to demonstration. The kind of demonstration Leibniz has in mind in this passage is a demonstration based on the analysis of the concepts contained in the axioms. However, in the subsequent letter to Conring (March 19, 1678), Leibniz expands his view on the non-apodictic nature of axioms:

> I have only said what I have found out in this matter through the experience of many years and through the examples of my own reasoning and that of others, and, moreover, something that is in accordance with what human beings daily do, even if they are not always aware of it, something that is efficient for inventing and judging, and not, as the methods and precepts of some others, sterile and remote from use and examples (GP 1 193).

Leibniz here criticizes the methods of other theoreticians for being detached from use and examples. This critique suggests that he assigns a positive function to common usage and examples for providing an analytic foundation for axioms, such as principles of reason or principles of jurisprudence. As the letter to Conring quoted above made clear, the role of examples cannot be one of inductive reasoning. Rather, as the present passage explicates, the relevant examples are samples of our everyday reasoning. Moreover, these samples are portrayed as containing, in an implicit way, something that is constitutive in forming new judgments. This emphasis on samples of everyday reasoning, Leibniz shares with Ramus and Viotti.

To be sure, Leibniz does not give up the distinction between the method of the Topics and demonstrative knowledge. As Giovanna Varani has pointed out, in *New Method of Learning and Teaching Jurisprudence* (1667), Leibniz explicitly distinguishes between the application of the method of the Aristotelian Topics and the demonstrative method of a theory of universal jurisprudence (Varani 1995: 99–100). According to Leibniz, "Johannes Felden and other Aristotelians want that the rules of law are contingent truths [...] They don't seem to have considered the matter sufficiently" (A VI 1 308). "The science of law, by its nature, does not belong to the conjectural sciences. Conjectures are allowed in the realm of facts but not in the

realm of law" (A VI 1 309). Varani understands these claims only in the perspective of an "axiomatic jurisprudence" having an affinity with axiomatic geometry (Varani 1995: 100). Certainly, this corresponds to a project Leibniz formulated very early.[9] However, the role of the project of axiomatic jurisprudence has to be complemented by the role Leibniz ascribes to the method of analysis in the formation of a demonstrative science. Varani (1995: 106–116) gives a detailed exposition of Leibniz's remarks about the limits of the "ars analytica".[10] Nevertheless, it is important to see in which respect exactly Leibniz locates the limits of the applicability of analysis. Interestingly, these limits closely correspond to the limits he draws for the feasibility of the project of a universal characteristic. According to his view, analysis does not work for disentangling the simple components of the experiences of the physical world, both for reasons of the limitation of our experimental capacities and for the unknowability of simple properties understood as attributes of the Divine mind (see A VI 3 404). Nevertheless, the applicability of the method of analysis exactly matches the applicability of a universal characteristic for categorical concepts. That is why Leibniz, despite the serious limitations of the applicability of analysis, in *On the Imperfection of Analysis and Its Supplementation by Synthesis* (Spring–Summer 1673) defends the view that analysis can be applied to metaphysics, ethics, and jurisprudence:

> Invention takes place by means of analysis, wherever for inventing nothing else is assumed than the given problem or theorem, which, if it is analyzed into its first elements, provides us with the solution. Invention by means of synthesis is a kind of invention, in which other already known things are required [...] Analysis in physical things is impeded, because we do not know the experiments, and find them only by chance or a big effort of time [...] In practical action analysis in general cannot, in most cases, be applied, because it would require an exceeding amount of time, and there are infinitely many factors that would have to be taken into account [...] In general political questions, but above all in questions of law there is a most certain and perfect analysis, and the same holds for some issues in metaphysics. Concerning arithmetic and geometry, there are some topics that are not accessible to analysis, in the one due to the multitude, in the other due to the infinity of things to be considered [...] (A VI 3 404).

Thus, Leibniz understands ethics and jurisprudence as more than conjectural disciplines which, nevertheless, are built up not only in an axiomatic-deductive way. Rather, in spite of the limitations of an analytic methodology in other fields, he characterizes the theory of justice, along with some metaphysical topics, as accessible to analysis.

Leibniz also holds that definitions are capable of expressing the nature of the defined. In particular, the importance of this claim makes itself felt in the context of his view of the role of definitions in practical philosophy. According to him, in this area, the nature of what is defined coincides with the nature of mind. In this sense, Leibniz writes in the Appendix to the *Dissertation on the Art of Combinations* (1666):

> Although each *method* can be applied in each discipline; so that we follow in our research either the traces of our own investigations or productive nature; it nevertheless happens in the practical disciplines that the *order of nature* and the *order of knowing* coincide, because here the *nature of the thing* has its origin in our *thought* and production. Since the goal moves us to produce the means, and at the same time leads us to recognize them; which is

not the case for objects that we only know but cannot produce. Apart from this, even if each method is permissible, not every one is useful (A VI 1 229).

In *New Method of Learning and Teaching Jurisprudence*, Leibniz takes up the idea that concepts such as thought and causation are expressions of the nature of the mind, and extends this idea to definitions in ethics and jurisprudence:

> Sensible qualities are of two kinds: some perceived in the mind alone, others in fantasy or by means of mediating bodily organs. In the mind, only two sensible qualities are perceived: thought and causality. *Thought* is a sensible quality either of the human intellect or of something 'I know not what' within us, which we observe to be thinking. But we cannot explain what thinking is any more than what white is or what extension is. [...] *Logic* is built on the sensible quality called thought [...] The other sensible quality found in mind alone is *causality* – when it can be proved demonstratively from an effect that it has some cause, even though latent. This quality, abstracted from others such as motion and figure, is in the cause of the world or God [...] and in our own minds as the cause of bodily motion. But we cannot explain the method of causality. This is the subject matter of *pneumatics*, which deals with the external actions of incorporeal beings, as logic deals with their internal actions, or thought. Here belongs also *practical philosophy*, or the doctrine of the pleasant and the useful, and of justice or what is of common value in a community (A VI 1 286–287).[11]

Because according to Leibniz's view, the axioms of a theory of justice belong to the nature of rational beings, these axioms are accessible by means of a comparative method. In the fourth MS of the *Elements of Natural Law* (1670–1671), Leibniz describes this method as follows:

> The method of our investigation is to gather the more important and distinctive examples of the use of these terms and to set up some meaning consistent with these and other examples. For just as we construct a hypothesis by inductions from observations, so we make a definition by comparing propositions; in both cases we make a compendium of all other instances, as yet untried, out of the most important given cases. This method is necessary whenever it is not desirable to determine the use of terms arbitrarily for oneself (A VI 1 461).

Thus, the common conceptual equipment of rational beings guarantees that the definitions of concepts of reason are not arbitrary. Moreover, a few lines after the passage just quoted, Leibniz refers the reader to what he said in his *Preface to Nizolius*. About logical concepts, he writes there:

> True logic is not only an instrument, but also contains in some way the principles and the true reason for doing philosophy, because it hands down those general rules, through which the true and the false can be discerned, and by means of which, through the mere application of definitions and experiences, all conclusions can be proven. But neither are these rules the principles of philosophy, or of the propositions themselves, and they do not make the truth of things, but rather show it; nevertheless they make the philosopher, and are the principles of the right way of doing philosophy, which – as Nizolius has observed – is enough (A VI 2 408).[12]

Here, Leibniz does not regard the principles of reasoning as something that is constitutive of philosophy as a particular theoretical discipline. Principles of reason, in his opinion, are not a tool of theory construction. Rather, they are something that in philosophical analysis is only made explicit. In this sense, making principles of reason explicit only "shows" the truth which our ordinary way of thinking about

things already contains. In the *Preface to Nizolius*, this view of the descriptive nature of philosophical knowledge leads Leibniz to claim that philosophers do not know other things than ordinary people but rather the same things in a different way:

> And it is very true that there is nothing that cannot be explicated in popular terms, only using more of them. Therefore, Nizolius rightly urges at various places that what does not possess a general term (i.e., as I understand him, what, conjoined with other general terms, can in particular express a thing) in common language should be regarded as nothing, as a fiction, and as useless. For philosophers do not always surpass common men in that they sense different things, but that they sense them in another way, that is with the eye of the mind, with reflection or attention, and comparing things with other things (A VI 2 413).

Although the example of "comparing things with other things" mentioned here concerns Joachim Jungius' attempt at classifying birds through a comparison of their external features, the point Leibniz has in mind here seems to be more general. The function of comparing things with each other in this context does not have the function of arriving at empirical generalizations based on an inductive procedure. Rather, using a comparative method leads to an insight into a conceptual structure that, due to its commonly shared nature, can be regarded as a kind of implicit knowledge that only has to be made explicit.

4 Conclusion

I set out to argue that, in the 1547 edition of the *Dialectical Institutions*, Ramus dissociates the logical use of examples from insight into Divine truth. In his view, using examples from rhetorical and poetical works conveys insight into common, innate concepts that play a formative role in the constitution of human discourse. Analysis, for him, like the use of syllogisms, has the task of making the elements of discourse perspicuous. According to his view, by making elements of a complex discourse perspicuous, syllogisms enhance natural capacities in weighing reasons. Analysis provides us with perspicuous examples which, due to the similarity or dissimilarity between them and elements of new discourses, function as norms in the formation of new discourses. By contrast, Leibniz shares with Ramus' critics the view that analysis is connected with the task of providing definitions underlying demonstrative arguments. Yet, he also shares with Ramus the view that analysis is directed towards the everyday usage of language and, thus, makes concepts common to rational human beings explicit. In this sense, Leibniz shares with Ramus the view that what is accessible to analysis belongs to a kind of knowledge that is established on descriptive grounds.

Notes

1. See *De reductione hypothesium ad demonstrationes ac phaenomenorum ad theoremata* (1669–1670; A VI 2 476–477); *Marii Nizolii De veris principiis et vera ratione philosophandi libri IV, Dissertatio praeliminaris* (A VI 2 462); *Specimen demonstrationum de natura rerum corporearum ex phaenomenis* (1671; A VI 2 301). For the role of Ramism in Leibniz's academic education, see Bruyère (1984: 364–367).
2. Daniel refers the reader to Ramus 1543: fol. 57. See also Daniel (2001).
3. See Nizolius 1553.
4. For the history of the three-book Latin editions of the *Dialectical Institutions*, see Ong 1958: 200–201. In what follows, I refer to the 1547 edition of the *Dialectical Institutions* as "DI". All references are to page numbers.
5. See the passage pointed out by Daniel; see above note 2.
6. This conception of weighing reasons foreshadows Leibniz's conception of a "balance of reason". For Leibniz's views, see Dascal (1996).
7. For an overview over early Aristotelian responses to Ramus, see Robinet (1996: Chapter 2).
8. See (Conring 1662: Chapters 8 and 10).
9. See, e.g., *Nova methodus discendae docendaeque jurisprudentiae* (A VI 1 311); *Dissertatio de arte combinatoria* (A VI 1 189).
10. See, e.g., *Desiderata Analytica* (1674; A VI 3 410).
11. As I have argued elsewhere, much of Leibniz's theory of universal justice is based on a descriptive, bottom-up strategy that begins with the analysis of the nature of our thought. See Blank (2004 and 2005: Chapter 2).
12. For Nizolius' metaphilosophical views, see Marras and Varani (Forthcoming).

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