Bolzano on Necessary Existence

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1 Introduction

Modal notions play a central role in metaphysics, and Bolzano accordingly places great importance on arriving at correct definitions of them:

> Statements of *necessity*, *possibility* and *contingency* [...] are on everyone's lips, and the most important investigations on God, freedom, etc., depend on a correct determination of these concepts.[1]

Yet his definitions of necessity and related notions in terms of purely conceptual truth have caused a great deal of perplexity for modern readers, who have found them unmotivated, obviously too broad, and just plain strange.

In this essay, we attempt to shed some light on what he considered necessity in the proper sense, namely, necessary *existence*. Our approach is purely historical. We do not seek to defend Bolzano's account, which is based in large part upon metaphysical theses that, though popular in the eighteenth and early nineteenth centuries, will find few if any adherents today. Rather, by considering his work in historical context, we aim to explain his position, and to show that features that can appear odd from a contemporary perspective are defensible and perhaps even reasonable given his assumptions.

The most extensive previous discussion of Bolzano's concept of necessary existence may be found in Mark Textor's thorough and enlightening study *Bolzano's Propositionalismus*.[2] Textor has argued that, despite Bolzano's insistence that he aimed to characterize necessity objectively,[3] his definition must be understood in subjective terms, namely, in terms of the concepts that *humans* can form. Otherwise, he argues, Bolzano would be forced to admit that every actual object exists necessarily.[4] Independently of this problem, Textor has criticized Bolzano's definition as too broad. He has pointed out that many objects that exist necessarily according to the definition clearly do not exist in every metaphysically possible world. Assuming that Bolzano's definition is supposed to capture the notion of metaphysically necessary existence, Textor concluded that Bolzano's account is inadequate.[5]

[1] Bolzano 1841, 61.
[2] Textor 1996.
[3] Cf. Bolzano 1839, 143.
[4] Textor 1996, 296ff.
[5] Textor 1996, 336.

In our essay we offer a different interpretation. We show that Textor's argument in support of the claim that Bolzano's definition has to be read subjectively is not compelling. Further, we will answer his second objection by clarifying the motivation behind Bolzano's definition against the background of his metaphysico-theological views. Following the general thrust of Rusnock's recent interpretation of Bolzano's views on necessary *truth*,[6] we argue that his aim was to capture a notion of necessary existence that is broad enough to capture both metaphysically and morally necessary existence in Leibniz's sense. That is to say, Bolzano tried to capture a notion according to which all objects that God *had to* create because of his perfect goodness also exist necessarily. Contrary to Leibniz, however, Bolzano did not believe that this class comprises *all* actually existing objects. A striking feature of Bolzano's conception that, we argue, becomes understandable against this background is that there are necessary totalities whose parts are contingent.

The structure of our essay will be as follows. After a preliminary discussion of some Bolzanian notions that are needed to understand his definition (Section 2), we present the definition in Section 3, describing how Bolzano may have arrived at it by considering technical problems he saw with definitions given by his predecessors. We then consider the scope of his intentions in framing his definition. In Section 4, we turn to the application of his definition. Here, we examine Bolzano's arguments for the existence of contingent entities, Textor's arguments in favour of a subjective interpretation, and the question of necessary totalities. In Section 5, finally, we point out a problem with Bolzano's position that results from his evolving views on freedom, which, at least in his early thought, he took to be intimately linked with contingency. There follows an appendix commenting on the recent discussion of Bolzano's notion of necessary truth in articles by Rusnock and Textor.

2 Preliminaries: Bolzano's fundamental notions

In order to understand Bolzano's definition of necessary existence, one must first be familiar with several of his basic logical and ontological notions. In this section, we present these as briefly as we can.

The starting point of Bolzano's treatment of logic is the notion of a *proposition in itself* (*Satz an sich*).[7] Though there are some important differences, Bolzano's propositions in themselves are quite similar to Frege's *thoughts.* They are abstract (or, as Bolzano says, non-actual) objects that are either true or false, which may be expressed linguistically, merely entertained or deemed to be true by thinking

[6] Rusnock 2012.

[7] **WL**, §19 ff. We omit the 'in itself' in what follows when there is no risk of misunderstanding.

beings.[8] In a particular act of judgment, Bolzano says, a proposition in itself, or *objective* proposition, is *grasped*.[9] He speaks in such cases of *subjective propositions*, and maintains in general that whenever there exists a subjective proposition (or judgment), there is a corresponding proposition in itself. Similar distinctions, and similar claims, are made with respect to other logical objects, such as concepts.

It is common in the literature on Bolzano to use square brackets around a sentence to designate the proposition in itself it expresses, and we shall follow this convention, applying it not only to sentences but also to other similar entities. Single quotes are used to indicate mention of linguistic expressions. For example, '[Socrates is wise]' designates the proposition in itself expressed by 'Socrates is wise'.[10]

Parts of propositions, provided they are not themselves complete propositions, are called *ideas in themselves* (*Vorstellungen an sich*).[11] For example, in the proposition [Socrates has wisdom], we may distinguish ideas such as [Socrates], [has], and [wisdom], or even [Socrates has], etc. Ideas sometimes themselves have parts, in which case they are said to be *complex*. Otherwise, they are called *simple*. Thus the complex idea [equilateral triangle] = [triangle which has equal angles], would number [equal] among its parts. The sum of the parts of a complex idea is called its *content*.[12] Since Bolzano's notion of a sum does not include a specification of how the parts are combined, it can happen that different ideas have the same content, e.g., [quadrilateral with equal sides and unequal angles], [quadrilateral with unequal sides and equal angles]. Bolzano speaks in this connection of the "way the parts of an idea are combined", their *Verbindungsart*.[13] Finally, some ideas have, or represent, objects, and thus have extensions, e.g., [dog]. An idea with exactly one object is called *singular*, e.g., [present Queen of England], while those with more than one object are called *general*. Ideas with objects are individuated, Bolzano maintains, by their extensions, content, and the way the content is combined. In the case of simple ideas with objects, where there is no content properly speaking (i.e., no proper parts), and thus no manner of combination, ideas are individuated by their extensions alone.[14]

[8] In the second case, Bolzano thinks we form an idea of the proposition (**WL**, §34).

[9] In a letter to Exner of 18 December 1834, Bolzano concedes that this figurative language is not particularly helpful, but says he knows no better. See Bolzano-Exner 1935, 86 (Bolzano 2004, 164).

[10] These conventions are not applied to quotations from Bolzano's works.

[11] **WL**, §48 ff. Again, we will omit 'in itself' when no confusion can arise.

[12] Simple ideas, having no parts, have no content strictly speaking, though Bolzano allows that a simple idea may be called its own content in an improper sense (**WL**, §92).

[13] **WL**, §96 [I.446]; cf. §56 [I.244].

[14] **WL**, §93, no. 3.

A special and noteworthy case is that of simple ideas that are also singular. Bolzano calls these *intuitions*.[15] As with ideas in general, he distinguishes subjective and objective intuitions. *Human* intuitions receive detailed consideration. Bolzano claims that every intuition formed by a human being has as its unique object a presently occurring change in the mind of that being (typically, a sensation, though ideas, judgments, and other mental events may also be objects of human intuitions).[16] In addition to being the object represented by the intuition, the mental event is also said to be its "next and immediate cause". None of this, however, applies to objective intuitions, which unlike their subjective counterparts, are nothing actual, and hence enter into no causal relations.

Linguistically, intuitions make their presence felt in a variety of ways, notably through reference to particular times or places, proper names, some occurrences of natural kind terms, and indexicals and demonstratives.[17] The best we can do to express an isolated intuition, Bolzano thinks, is to use the bare demonstrative 'this'. Viewed from this perspective, his notion of an intuition is a way of coming to grips with essential indexicality and related phenomena. Russell, in the sort of coincidence that is more common in mathematics than in philosophy, would later hit upon something remarkably similar with his notion of a logically proper name, apparently without knowing anything of Bolzano's theory.[18]

An intuition, to repeat, is an idea that is both simple and singular. A *concept*, by contrast, is an idea that is not an intuition and does not have any parts that are intuitions. *Mixed ideas*, finally, number both intuitions and concepts among their parts. We can now define a *purely conceptual proposition* as one that has no intuitions as parts; while propositions that do contain intuitions are called for that reason *intuitional* propositions.[19]

Reasonably enough, Bolzano maintained that there were objective propositions and ideas for which there were no *human* subjective counterparts. At the same time, he claimed that for every objective proposition or idea there was a corresponding subjective one, namely, in the mind of the omniscient God. Since there are intuitional truths, it would seem to follow directly that God also has subjective intuitions. At this point, it seems natural to ask whether Bolzano thought God had intuitions over and above those corresponding human ones. Though we have found no detailed discussion of this question, a stray remark in §81 of the *Theory of Science* suggests that the answer is yes, and indeed that God has an intuition for *every* object:

[15] **WL**, §72. For more detailed discussion of Bolzano's concept of an intuition, see Bolzano 2004, George 2004, and Textor 1996, Chapter 2.

[16] **WL**, §74, no. 1.

[17] **WL**, §74–75.

[18] See, e.g., Russell 1998.

[19] **WL**, §133.

> I believe I may conclude that it must always be possible to determine the matter of an object by means of inner attributes alone because the constituents of which an object is composed belong to the object and can be thought by means of certain simple ideas that apply to these parts and nothing else, so that their determination does not require the consideration of another, different object (at least when we are speaking not just of our human cognitive faculties, but cognitive faculties in general).[20]

Finally, a few remarks on Bolzano's ontology seem in order here. The basic notion is that of an *object* (*Gegenstand*). Among objects, some are *collections* (*Inbegriffe*), with other objects as parts.[21] Bolzano maintains that *attributes* (*Beschaffenheiten*) are a special kind of object, those that are *possessed* or *had* by other objects, in the sense, e.g., that Socrates has wisdom.[22] Attributes may be divided into *properties* and *relations*, and the attributes of a given object into *inner* and *outer*. The inner attributes of an object are just its properties, and outer attributes correspond to relations in the usual way. For example, Bill Clinton and Barack Obama stand in the relation *older than*, while Clinton has the outer attribute of *being older than Obama*.[23]

A particularly noteworthy property is *actuality* or *real existence* (*Wirklichkeit, Seyn, Daseyn*). Bolzano maintains that existence is a genuine attribute, one which distinguishes real objects such as rocks or atoms from non-actual (or, as they are sometimes called, *abstract*) ones such as propositions and ideas in themselves.[24] Thus Bolzano was surely to be numbered among those who, long before Wyman appeared, "united to ruin the good old word 'exist'."[25] Like Frege, he maintained that 'existence' in Quine's sense designated a higher-level concept, one that applied to all and only those ideas which have, or represent, objects. For this second concept, Bolzano coined the term 'objectuality' (*Gegenständlichkeit*). Commonly, the objectuality of an idea is expressed with the expression 'there are' (*es gibt*), and Bolzano accordingly interprets I-propositions as affirmations of objectuality. Thus, [Some A are B] = [There is something that is both A and B] = [The idea of an A which is also a B has objectuality].[26] In Bolzanese, then, we can say that the *idea* [cow] has objectuality and also that the *cows* themselves have actuality; by

[20] **WL**, §81, no. 2 [I.390].

[21] **WL**, §82. Bolzano sketches his theory of collections in the **WL**, §§82–87, and also in §§3–10 of the *Paradoxes of the Infinite* (**PdU**). The most detailed presentation of his theory may be found in the unfinished and unpublished manuscript of the *Größenlehre*, in the section entitled "Vorkenntnisse" (Bolzano 1975).

[22] **WL**, §80.

[23] **WL**, §80 [I.382].

[24] **WL**, §142.

[25] Quine 1980, 3.

[26] **WL**, §§137, 173.

contrast, a concept such as [geometrical point] or [proposition in itself], though objectual, represents only non-actual objects, while a concept such as [round square] is not even objectual. We note in passing, because it will be important later, that Bolzano took the idea [actuality] to be a pure concept.

Actual objects differ from the non-actual in having temporal and spatial determinations and entering into causal relations. Among them, one finds *substances*, *adherences*, and *collections*. Adherences are the properties and relations of actual objects, while substances are actual simple objects that have attributes, but are not in turn had by anything else. Actual collections, finally, are those composed of parts that are themselves actual.[27]

3 Bolzano's conception of necessity

For Bolzano, necessity in the proper sense always qualifies existence:

> I think that every 'must', when it is taken in the stricter sense, is a 'must-exist', or a 'has to exist'; and every 'can', in the stricter sense, is a 'can-exist' or the possibility of being actual.[28]

In saying this, he was very much in line with 18th-century German usage. Adelung, for example, reported in his dictionary that:

> In the strictest sense, which admittedly is only current in philosophy, that is necessary (more precisely, absolutely necessary, *absolute necessarium*) which has the ground of its existence within itself, or whose opposite contains a contradiction; in opposition to the contingent. In this way, God is necessary or a necessary being.[29]

Necessity, that is, attaches to objects; it is, as Adelung writes in the entry on "*Nothwendigkeit*", a property of a thing.

This exemplary clarity is unfortunately lost in the very next sentence, when he adds by way of example:

> Two times two is necessarily four, since the opposite would contain a contradiction.[30]

Does he mean to speak of a necessary state of affairs, of a predicate necessarily belonging to a subject, of a necessarily true proposition, or of something else? There seems no way to tell.

Adelung's report provides a faithful account of what many philosophers of his time were saying. Baumgarten, for example, had this to say in his *Metaphysics*:

[27] A recent overview of Bolzano's ontology can be found in Chapter II of Krause 2004.
[28] **WL**, §182 [II.229 f.].
[29] Adelung 1808, Art. "Nothwendig".
[30] Adelung 1808, Art. "Nothwendig".

> That is necessary (*necessarium*), the opposite of which is impossible, and necessity (*necessitas*) is the determination of a thing by virtue of which it is necessary.[31]

Again, we see that necessity is regarded as an attribute (determination) of things.

Wolff, similarly, defines necessity in the first instance as a property of things:

> If that which is opposed to a thing contains something contradictory within itself, the thing is called *necessary*.[32]

Just like Adelung, however, he soon afterwards comes to speak of necessary truth, using the very same example:

> If I say "Two times two is four," the opposed proposition is: two times two is not four, or two times to is greater or less than four. Since one can demonstrate that the latter is impossible, the proposition that two times two is four is necessary. And so too for all propositions about numbers in arithmetic.[33]

Thus talk of necessity, even if originally applied only to things, seems to have been quietly extended to cover truths as well. Bolzano detected an ambiguity here. Thinking that 'necessary' could not be applied univocally to objects (e.g., God) and to truths (e.g., $[2 \times 2 = 4]$), he had to choose, and what the common usage we have just documented seemed to dictate was that in its primary sense 'necessary' was applied to objects. And this is what he takes to be the proper sense of the term. At bottom, this is just a terminological issue. For Bolzano also speaks of necessary truths, and, as we shall see, the links between necessary truth and necessary existence are very tight, enough so to make it quite reasonable to use the same word for the two concepts. Thus even though he considered this usage improper, he does not seem to have thought it wholly inappropriate.

For Bolzano, a *truth* is necessary if and only if it is purely conceptual.[34] Though this definition is easy enough to understand, commentators have disputed why he might have proposed it. As our focus is on necessary existence, we simply take note of his identification of purely conceptual and necessary truth here. More detailed discussion of this and related matters may be found in a pair of recent articles by Rusnock and Textor, and in an appendix to this paper.[35]

[31] Baumgarten 1766, §80.

[32] Wolff 1751, §36.

[33] Wolff 1751, §37.

[34] See, e.g., **WL**, §182, no. 4. Elsewhere, Bolzano (1841, 52) gives a different definition, under which propositions that are deducible from purely conceptual truths also count as necessary. Siebel (1997) has pointed out a number of serious problems for this broader definition. In this paper, we will restrict our attention to the definition given in **WL**, §182, which does not involve deducibility.

[35] Rusnock 2012; Textor 2013. Cf. Textor 1996.

Although Bolzano follows his predecessors in taking the notion of necessity to apply primarily to things that have existence, he proposes a definition that is quite different from the ones we find in Adelung, Wolff and Baumgarten. A problem with those definitions is that it is notoriously unclear what is meant by saying that an object is opposed to *something impossible* or to some *object* that contains a contradiction. We can avoid this by interpreting such talk to mean that a *proposition* denying the existence of a necessary object is contradictory, and this is in fact what Bolzano does. Even so, a further difficulty arises when, like Baumgarten, we allow for "hidden" contradictions:

> When A and non-A are posited simultaneously, there arises a contradiction that is manifest. When, however, A and B are posited so that when B is posited, non-A is posited at the same time, there arises a hidden or covert contradiction.[36]

For at this point it is no longer correct to say that an object exists necessarily just in case denying its existence is *self*-contradictory. For it would still be reckoned necessary on Baumgarten's account if this denial, without being self-contradictory, was incompatible with some other truth, namely, one of the form 'No B is A.'

But which truths should be permitted to play this role? Bolzano points out that it cannot be all of them:

> [If] everything which follows from some truth [...] was necessary, then everything which is would have to be called necessary. [...] [I]f we were to call impossible anything whose non-existence follows from any truth whatsoever, everything which is not would have to be called impossible.[37]

The reason is simple, as he explains elsewhere: for any given object A, if A exists then the proposition [A exists] is true and and hence the supposition that A does not exist immediately yields a contradiction. Similarly, if A does not exist, the supposition that it does will contradict the truth that it doesn't. Accordingly, everything that exists would have to be called necessary and everything that does not exist impossible.[38]

Incompatibility with *any* truth, then, would yield too broad a notion of necessity. Recognising that some sort of limitation is required, Bolzano settles on the class of purely conceptual truths (recall that he identified necessary truth with purely conceptual truth). In this way, it turns out, he does not have to take a detour and invoke the notion of contradiction to characterize the collection of objects he has in mind. Rather than claiming that an object exists necessarily if and only if

[36] Baumgarten 1766, §13. Cf. Leibniz (1962, IV, ii, §1) on the subject of 'disparities'.
[37] **WL**, §182 [II.234].
[38] Bolzano 1841, 61–62.

the denial of its existence contradicts a purely conceptual truth, he simply says that it exists necessarily if there is a purely conceptual truth affirming its existence. He gives the following definition:

> [I]t seems to me that we only say that the existence of a certain object A is *necessary*, or has necessity, or that it *must* exist, if there is a purely conceptual truth of the form: A' is (or has existence), in which A' is an idea which represents A. Thus we say that God is necessary, because the proposition that God exists is a purely conceptual truth [...].[39]

Mark Textor has thoroughly examined the technicalities of this definition along with the various interpretations that have been offered for it.[40] As we agree entirely with his conclusions and have nothing to add to his presentation, we shall simply report what he has to say and proceed.

According to Textor's interpretation, when Bolzano speaks in his definition of an idea encompassing an object A, he means that this idea represents A *exclusively*. An object A exists necessarily, then, if and only if there is a purely conceptual truth of the form:

A' has actuality.

where $[A']$ is an idea representing A and A alone. Equivalently, an object exists necessarily just in case it has actuality and is uniquely represented by some pure concept.

For example, [God] is a pure concept according to Bolzano. [God has actuality] is thus a purely conceptual truth, and God can thus be said to exist necessarily according to the above definition. By contrast, [Bolzano], like all ideas designated by ordinary proper names, is not a pure concept but rather a *mixed* idea, containing both intuitions and concepts as parts.[41] In order to say that Bolzano exists necessarily, then, we would according to the definition have to find a pure concept $[A']$ under which Bolzano alone stands such that [A' has actuality] is true. If there is no such concept, then Bolzano exists only contingently.

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An important difference between contemporary usage and Bolzano's is that his ordinary conception of necessity is considerably broader than is now usual, embracing both metaphysical and moral necessities in Leibniz's sense.[42]

[39] **WL**, §182 [II.230].

[40] Textor 1996, 275–285.

[41] **WL**, §75.2 [I.335]: "...proper names always designate *mixed* ideas of the form 'the object that is the cause of my once having had such and such intuitions'."

[42] Cf. Rusnock 2012, section 4.

Leibniz, we recall, scrupulously distinguished between two sorts of necessity: *metaphysical* necessity, where the opposite implies a contradiction, and *moral* necessity, where the opposite, though it does not imply a contradiction, would not be compatible with the infinite perfection of the Creator.[43] According to Leibniz, only one being exists with metaphysical necessity, namely, God. Prior to the creation, God contemplates various possible worlds, each of them peopled by one or more individual substances. Since there is no contradiction in the assumption that any of these possible worlds either exists or does not exist, the existence of any one of them, as well as the existence of any possible substances inhabiting these worlds, is not metaphysically necessary. All the same, God, being omniscient, is able to see that among all the worlds He might create, one is uniquely determined as the most perfect, and also that this world would be better than nothing. Since God is perfectly holy, He resolves to create that one, a resolution which, given His omnipotence, results in the existence of this, the best of all possible worlds. Since this choice is the only one compatible with God's infinite wisdom and holiness, Leibniz qualifies it as *morally* necessary. Hence the actual universe, as well as each individual substance within it, exists with merely moral necessity. One may thus say that everything that exists does so necessarily, with the qualification that only God's existence is metaphysically necessary.

There is no doubt that Bolzano was aware of, and accepted, Leibniz's distinction between moral and metaphysical necessities. He says so explicitly in an unpublished manuscript where he compares his own views with those of Leibniz:

> I accept Leibniz's distinction between moral and metaphysical necessity in the same sense. That which exists through the perfection of the divine will has a merely moral necessity.[44]

While in his published works, one finds, for instance, the following unmistakably Leibnizian passage:

> If I am not completely mistaken we only speak of rules that nature *follows* insofar as we think of nature, or rather its creator, God, as a rational, freely acting being; and we only think it appropriate to say that a rule is *followed* by nature, or strictly speaking by God, when we may assume that the world is the way the rule states because God recognized that this would be good, and therefore decided that it would *be* so. Thus we say, e.g., and certainly are right to do so, that it is a law ordained by God that all good will be rewarded and all evil punished; for we are convinced that things are

[43] See, e.g., Leibniz's fifth letter to Clarke, no. 9 (Loemker 1989, 697); Leibniz 1993, §§174, 281, 367.

[44] Bolzano 1979, 45. In **RW**, III, §158 (**BBGA** I, 8/2, p. 146f.), he clearly states his acceptance of the Leibnizian principle of optimism.

> this way in the world precisely because God recognizes that this is good and wills it. By contrast, although we are completely certain that all circles in the universe stand to their diameters in a ratio of approximately 22 to 7, it would hardly occur to us to say that this ratio is a law that God has prescribed. For this ratio appears to us to be something that does not result from God's will, but rather cannot be otherwise than we find it to be.[45]

Yet there is a crucial difference between the two, for while Leibniz generally used the term 'necessary' to cover only metaphysical necessities, Bolzano's ordinary notion appears to cover moral necessities as well. The brief explanation for this view is that he thinks that God does *not* act freely in creating the universe, so that talk of God as a "freely acting, rational creature" is, strictly speaking, fictitious. God's will is indeed free in the sense that no outside compulsion affects it; in the sense in which freedom entails the possibility of doing otherwise, however, God is anything but free:

> A *freedom* in the sense which human beings have in my view, namely, a possibility to resolve in the same circumstances on the opposite of what one actually resolves, cannot be found in God.[46]

Leibniz himself had conceded as much:

> God chose between different courses all possible: thus, metaphysically speaking, he could have chosen or done what was not the best; but he could not morally speaking have done so.[47]

Yet Leibniz still insisted upon limiting the use of 'necessary' to metaphysical necessities. He did so for three main reasons. The first was that the broader sense would contravene accepted usage, causing pointless confusion.[48] The second was prudential: he was afraid that if the broader sense were adopted, careless readers might fall heedlessly into Spinozism, and think that all necessity was blind, none of it embodying divine wisdom.[49] The third was connected with his view that *every* truth was either metaphysically or morally necessary, so that the broader notion, not having a contrast class, would become utterly uninformative. For if, as he maintained, no detail of the creation was beneath God's notice, and 'possible' meant not only 'compatible with the eternal verities' but also 'compatible with

[45] **WL**, §574 [IV.376-77].

[46] **RW**, I, §78 (**BBGA**, I.6/1, p. 223); cf. Bolzano 1838, 183.

[47] Leibniz 1993, §234; cf. the response to objection VIII, where Leibniz says that God is free in Bolzano's other sense, i.e., His will is not determined by anything external.

[48] Leibniz 1993, §171.

[49] Leibniz 1993, §§173 f.

God's infinite wisdom and holiness', then only one world would be possible, the actual one, and it would exist necessarily. Each individual substance, moreover, would also have to be said to exist necessarily. So too, finally, for truths: $\Diamond P$ would be equivalent to both P and $\Box P$, so that all modal distinctions would collapse.[50]

Leibniz associates the rejected position with Abélard and Wyclif.[51] It seems clear that Bolzano also embraced it. Indeed, Bolzano thinks that Leibniz, on his own principles, should have adopted it as well:

> ...the distinction between moral and metaphysical necessity does not lie in the circumstance that the opposite of the latter is contradictory, for that holds also for the former, as it contradicts a truth of reason to say that God does not do the best.[52]

From Bolzano's point of view, to say, as Leibniz does, that God might have done otherwise, one must add: provided that one overlooks the fact that God is *of necessity* omniscient, omnipotent, and perfectly holy. But this is to commit the Mrs. Lincoln fallacy, so-called in memory of the reporter who asked the President's wife, "Setting aside the fact that your husband was shot, how did you like the play?"

At the same time, he rejects the alleged consequences enumerated by Leibniz, maintaining that there are contingent truths and contingently existing beings even if one adopts the broader notion embracing both metaphysical and moral necessities.

In order to understand why one might adopt such a broad notion of necessity, a consideration of the historical context may be helpful. Because of the advanced nature of his work in logic and mathematics, as Copleston observed, Bolzano is easily mistaken for someone who belongs to a later period.[53] But it should not be forgotten that he was born and raised in the eighteenth century, and in many ways shared the outlook of that age. Darwin was not even on the horizon, natural theology still very much a going concern. Features of the universe that philosophers today look upon as obviously accidental were then widely considered to be the result of God's plan.[54] Upon becoming aware of God's partiality to beetles, for example, many thinkers of that time would immediately conclude that this could be no accident, and must somehow reflect the divine wisdom. Many volumes attest to the extent of their researches into such questions. William Paley, a contemporary of Bolzano's, will come to mind for many readers. Our personal favourite is Friedrich Christian Lesser, an eighteenth-century Lutheran theologian who, with typical German thoroughness, devoted over a thousand pages to a proof of the existence of God based

[50] Leibniz 1993, §235.
[51] Leibniz 1993, §235.
[52] Bolzano 1979, 45.
[53] Copleston 1965, Vol. 7, p. 256.
[54] Bolzano presents the argument from design in **RW**, I, §83.

upon a consideration of snails and bivalves.[55]

Does life have to exist at all? What about sentient beings? Rational beings? Do there have to be more than 1,000 varieties of living beings? 10,000? A trillion? Many readers today would answer these questions in the negative without a moment's reflection. For Bolzano, however, the answer would be a confident yes to all of them. Here is a typical argument from the *Treatise of the Science of Religion*, in which the mechanism that gives rise to moral necessities could hardly be made more obvious:

> *God had to produce creatures that are capable of happiness.* For it is beyond any doubt that this is *possible* for him, given that we actually see such creatures. But if this is possible for him, then he must actually have *done* it on account of his holiness, since otherwise he could not have promoted happiness.[56]

Bolzano continues by arguing that God *must* have produced infinitely many creatures, that there must be such creatures at all moments of infinite time, and so on.[57] These and related points are taken up again in the *Theory of Science*, something that scarcely seems compatible with his taking a narrower view of necessity in that text:

> [W]ith respect to God we may know from concepts alone that He must have the intention of producing the greatest possible sum of happiness, and also that as a means to this end He must have created an infinite number of sensate beings, that he must reward goodness and punish evil, and allow us to persist after death, etc.[58]

Or again:

> According to the most perfect concepts of God that human reason has been able to obtain without the aid of divine revelation, there is (in my opinion) no other law of God's rule than that of bringing about the greatest possible happiness in created beings. From this law, it is easy to understand why there must be innumerable *differences* among creatures; on top of this, it is unmistakable that the innumerable kinds of organic as well as inorganic beings we find on earth serve the purpose of providing every individual substance with the occasion for a continual development of all of its powers; from this, it is also very probable that there is a certain *rank ordering* amongst all of these varied kinds, in the sense that some of them stand at a higher

[55] Lesser 1756. Other works (1732, 1740) discuss at considerable length how the goodness and wisdom of the creator can be gathered from an attentive consideration of insects and rocks.

[56] **RW**, I, §81, no. 1 (I. 204; **BBGA** I.6/1, p. 230).

[57] *Ibid.*

[58] **WL**, §383 [III.526].

> degree of perfection and others at a lower, and that the latter ascend to the level of the former.[59]

Given all these *musts*, we should expect propositions such as [There exist infinitely many sensate beings], [Rational beings exist], [The virtuous will not be eternally unhappy], etc., to count as necessarily true according to Bolzano's definition. And, indeed, these do seem to be purely conceptual propositions, as (*pace* Haldane) does [There are over 1,000,000 species of six-legged animals].

Now this is admittedly an expansive notion of necessity, and one might well wonder whether Bolzano's conception is simply too broad to be of any use. To judge from a remark in one of his notebooks, Bolzano himself entertained doubts about his modal concepts (in this case, possibility), perhaps concerned about what he had committed himself to:

> It seems to me that one must define the concept of possibility more narrowly,[60] and say that one only intends to call that possible which does not contradict any purely conceptual truths, with the exception of those that depend upon the wisdom of God (i.e., that stand under the proposition: God must will and bring about that which most assures the well-being of His creatures). For if we do not make this limitation, we could not say of any arrangement [*Einrichtung*] that is not found in nature that it is possible.[61]

We find another expression of second thoughts in a manuscript entitled "Verbesserungen und Zusätze zur Logik," which contains a variety of thoughts bearing on the *Theory of Science*. At one point in this manuscript, Bolzano considers narrowing his definition of the necessary so that it would only cover actualities "whose nonexistence contradicts some purely *theoretical* conceptual truth."[62] This alteration, like the previous one, would remove all necessities that stem from God's resolution to do what is best, since that resolution is guided by a *practical* truth (i.e., the highest moral law), leaving him with something like Leibniz's class of metaphysical necessities.

That he considered such a change, however, provides further confirmation that the concept presented in the *Treatise of the Science of Religion* and the *Theory of Science* did embrace moral as well as metaphysical necessities. And even if Bolzano contemplated altering his definition so that this would no longer be the case, it seems worthwhile to look into the consequences of the definition he actually gave. To this we now turn.

[59] **WL**, §574 [IV.378].

[60] It seems clear that this should read "more broadly".

[61] **BBGA**, IIB.18/2, 23. As it stands, this is an overstatement, since there is no mention of whether or not the arrangement is representable by means of pure concepts.

[62] **BBGA** IIa.12/2, p. 123; cf. Rusnock 2012, p. 829.

4 Necessary Existents

As we have seen, an object exists necessarily according to Bolzano if and only if it is actual and is uniquely represented by some pure concept.[63] In §74 of the *Theory of Science*, he tells us that only a few objects meet these conditions:

> Pure concepts can indeed be indicated which exclusively represent God and certain powers and attributes of God, e.g., his omniscience, omnipotence, etc., and of the universe as a whole and of some other actual objects. But the same does not hold of the rest of the innumerable actual things [...].[64]

God is represented, for example, by the pure concepts [being with no ground of its actuality] or [omniscient being], and the universe, for its part, by the pure concept [the collection of everything actual, with the exception of God].[65]

What are the other necessary objects? Bolzano does not say. But he does add that finite substances, as well as combinations of these "which comprise less than the totality of things" are *not* uniquely represented by any pure concept.[66] Finite substances are Bolzano's atoms; in speaking of combinations of these that fall short of the totality of things, we think he most likely had in mind ordinary objects, whether these be organisms like cows, horses, trees, humans, parts of these organisms (a leg, a leaf, etc.), or non-organic objects such as rocks, houses, pieces of paper, etc.

Why does Bolzano think that no individual substances and no ordinary objects can be represented by pure concepts? This is what he says in §74 of the *Theory of Science*:

> It is indeed false that there are even as many as two real things that are completely equal to one another in all their (inner) attributes. One might hope that several of these inner attributes, each of which can be comprehended by a pure concept, could be used to form a concept that fits only this and no other object, but even if we suppose that for each object there is a finite number of inner attributes which no other object has

[63] Note that, in marked contrast to much contemporary usage, Bolzano would not say that abstract objects like geometrical points exist necessarily, for in his view they do not exist at all, i.e., they lack actuality. Indeed, he would go so far as to say that such objects are *impossible*, since, being by their very nature abstract, they cannot even *become actual*. (The *truth* that *there are* points, by contrast, i.e., [The concept [point] has objectuality] would be reckoned necessary in the improper sense mentioned above.)

[64] **WL**, §74 [I.333]; cf. §353 [III.408].

[65] **WL**, §88 [I.414]. We note in passing that there are necessary entities of all three of Bolzano's basic kinds: a necessary *substance* (God), necessary *attributes* (e.g., God's omniscience) and necessary *collections* (e.g., the universe).

[66] *Ibid.*

> in just this combination, all of which can be represented by pure concepts, it is clear, nonetheless, that we can never *know* whether the attributes that we have combined in our concept are really of such a nature. From the fact that we do not know a second object that has all these properties, it does not follow that no such object exists in some unexplored region of the universe. Moreover, if the number of beings in the universe is infinite, then it can be supposed that not even an infinite number of inner attributes of an object will suffice for the formation of a concept that represents only this object and thus distinguishes it from all others. For, if the similarity of objects is a function of the number of independent attributes that are shared between them, then it could be the case that no similarity between two objects is the *closest*, i.e., so close that there is not a closer one. Hence no matter how many attributes we have already included in our concept, it could still be the case that there is a second object, or even infinitely many further objects, that have all these properties in common.[67]

Bolzano's arguments here depend on some strong assumptions about the variety present in the universe relative to the stock of pure concepts. He does not argue for these assumptions in the *Theory of Science*,[68] apparently taking it for granted that his readers would share his acceptance of the principle of plenitude.[69] They are, however, developed more fully in his *Treatise of the Science of Religion*. There, Bolzano states that God created a universe that is as full as is compatible with the maximization of the well-being of the (infinitely many) creatures it contains.[70] That God should act to maximize the well-being of creatures follows from the highest moral law, itself a purely conceptual truth to which God is subject.[71]

It bears repeating, perhaps, that the alleged necessity of there being infinitely many, infinitely diverse creatures is *moral* rather than *metaphysical*, a point that is made quite explicitly in the following passage:

[67] **WL**, §74 [I.333 f.].

[68] An argument for the infinite variety of nature does come up incidentally in Bolzano's discussion of classifications (**WL**, §574 [IV.378]). Cf. **PdU**, §58.

[69] He may not have been unreasonable to do so. It was a commonplace among the authors Bolzano read, for example, that there were no missing links in the great chain of being. See Arthur Lovejoy's classic, *The Great Chain of Being* (Lovejoy 1964) for variations on this theme.

[70] **RW** I, §§79.4, 81. Bolzano thinks that both of these theses (i.e., that infinite variety is present in nature and the God always does what it best) belong to what he calls the "natural religion of humanity" (cf. **RW** I, §64); that is, he thought that every sufficiently knowledgeable person would accept them. This may be why he did not feel it necessary to argue for them at great length.

[71] **RW** I, §90, no. 11. Cf. **RW**, I, §137 (**BBGA** I, 6/2, p. 132–33): "*Things whose actualization depends upon God alone are, if completely possible, for that very reason also actual.* For in order to be completely possible for the Divinity, they must among other things not stand in contradiction to God's properties, to His absolute wisdom, holiness, etc.; and if this were not the case, it would for that reason be impossible for God to create them, as the freedom we assume in Him in no case consists in the possibility of a departure from the moral law. Thus if the creation of a thing accords with God's wisdom, holiness, etc., then he actually creates it."

> When we turn to this world, we have not the slightest reason to claim that all those things of whose existence we learn merely through perception are necessary *in and of themselves*, i.e., even when we do not assume that God had to create them on account of his perfection. Who, for example, could prove that it is necessary that the earth bring forth precisely these and those species of plants and animals for any other reason than that this is most conducive to the well-being of living things, and thus most accords with the perfection of God?[72]

Since Bolzano's metaphysics is not much discussed today, it is perhaps worth saying a few words about just how full he thought the universe was.[73] All physical objects, in his view, are ultimately composed of simple substances. The simple substances, or atoms, having no parts, have no extension, though each has a spatial location, namely, a point. Moreover, the universe is a plenum: every point of infinite space is occupied at every instant of infinite time by a simple substance.[74] Since Bolzano's continuum is that of classical analysis, it is clear in retrospect that he assumes the existence of uncountably many simple substances, no two of them identical in all their inner attributes.[75] There are also infinitely many levels of being, infinitely many varieties of existents.[76] In short, Bolzano's universe is immeasurably vast in every sense.[77]

Regardless of what one thinks about Bolzano's metaphysical assumptions, the passage from §74 of the *Theory of Science* gives rise to a number of other difficulties. To begin with, if our concern is with pure concepts *in themselves*, the fact that *we* cannot know for certain whether a given concept is singular or general seems beside the point—the question is not whether we know this is so but rather whether it is so. For those expecting *a priori* arguments on such matters, especially from early nineteenth-century philosophers writing in German, Bolzano's appeal to subjective and empirical considerations here may seem nothing short of absurd. But Bolzano, who had carefully distinguished between purely conceptual truths and truths knowable *a priori*,[78] thought it not only permissible but even fully appropriate to use empirical, probabilistic arguments for purely conceptual propositions,

[72] **RW**, I, §83, no. 2 (**BBGA** I.6/1, p. 239).

[73] The main published sources for Bolzano's metaphysics are Bolzano 1838, **PdU**, and Příhonský 1857. For a recent study of Bolzano's metaphysics, see Krause 2004.

[74] See Krause 2004, p. 212ff.

[75] In saying this, we do not by any means intend to suggest that Bolzano was even dimly aware of the higher infinities.

[76] See, e.g., **WL**, §574; **PdU**, §58.

[77] It is also clear, incidentally, that Bolzano had no inhibitions with respect to the "universe" of non-actual objects. See **WL**, §352 [III.405-406].

[78] **WL**, §133, §306; Bolzano 1841, 51.

especially in metaphysics.[79] And indeed, when he comes to argue that no two existing things are equal in all their inner attributes (properties), his argument is a merely probable one:

> I am quite inclined to think that such an inner difference must hold between any two objects that have actual existence. In other words, I think that there are no two actual objects that equal one another in all their internal attributes. [...] My reasons are as follows: Every finite substance is influenced by every other substance, no matter how far they are apart. Thus, even if we make the most extreme assumption, namely, that the *original* attributes of two substances, i.e., the attributes that stem from the Creator Himself, are completely equal, an undisturbed equality of the two substances can continue only so long as both are surrounded by equal substances acting upon them from the same distances, or if there is an inequality in one of these parts, then this difference must be of such a sort that its effects are the same for both substances. But both of these assumptions are infinitely improbable, because of the infinitely many different cases that have the same probability. It is certain that at least in *most* cases there is not only one, but many, nay infinitely many, external and internal differences that can be truly asserted of two objects. The more closely we compare two people, or two trees, or any other two actual objects, the more differences we discover between them.[80]

Thus it seems to us that the first part of Bolzano's argument is not as misguided as might appear at first glance. As he sees things, there is nothing methodologically unsound about using subjective considerations when arguing for a thesis about objective concepts.[81]

[79] See, e.g., **WL**, §532, note [IV.290 f.]. He was not alone in taking this approach. Cf. Crusius 1766, Vorrede zur ersten Auflage, (third unnumbered page): "In my metaphysics, I intend to deal only with necessary truths of reason, i.e., those concerning which it may be shown either demonstratively *or probably* that they must hold in every world" (emphasis added).

[80] **WL**, §114 [I. 532 f.]. Cf. §353 [III.407 f.]: "[W]ith the concept 'an even number which lies between 4 and 8', it is obvious that no other object than the number 6 meets this condition, and hence that the idea is singular. It is far more difficult to determine whether the idea has an object when the given idea is a pure concept whose objects (if it had any) would have to be actual. Apart from the concepts mentioned above [e.g., "The sum of all B"], where it lies in their *form* that they cannot have several objects, I can only claim with confidence that the concept of God (and concepts equivalent to it) has only one object. With ideas of this kind, only experience can tell us whether an object corresponds to them or not. But merely from the fact that experience has so far shown us no such objects, or only one, we are in no way justified in concluding that there are none or only one; rather, it is probable that if we have found *one*, there are in fact several of this kind."

[81] It is a different matter, of course, when it becomes a question of indicating the *objective grounds* of such theses. See **WL**, §§133, 221.1.

Textor has proposed a different interpretation of the arguments in §74.[82] He argues that they reveal that Bolzano's definition of necessary existence is in fact not aimed at capturing an objective property, but rather a subjective one related to the representational capabilities of human beings. On this interpretation of Bolzano's definition, an object exists necessarily if and only if it is uniquely represented by a *subjective* concept of some human being.[83] Textor supports his reading by claiming that, because Bolzano is committed to a certain version of the principle of the identity of indiscernibles, he is also thereby committed to there being for each existing object a pure concept in itself that uniquely represents it. Hence he would be committed to its necessary existence if we were to interpret his definition as aimed at capturing an objective notion. In order to avoid this "bizarre consequence", Textor rejects this interpretation and maintains Bolzano's use of subjective language in §74 is no accident.[84]

He appeals to a passage from §74 in which Bolzano endorses a modified version of Leibniz's principle:

> It is indeed false that there are even as many as two real things that are completely equal to one another in all their (inner) attributes.[85]

Textor now makes the additional assumption that this holds also for the smaller set of *conceptually representable* inner attributes,[86] and obtains the following principle:

$$(\dagger) \qquad (\forall x)(\forall y)((x \neq y) \rightarrow (\exists \Phi)(\Phi x \& \neg \Phi y))$$

where x, y range over actual objects and Φ ranges over conceptually representable inner attributes.[87]

He continues:

> It is easy to convince oneself that a surprising thesis follows from [this principle], namely:
>
> > For every actual object, there is a singular pure concept that represents it.

[82] Textor 1996, 293-299. Note that in a more recent paper Textor offers another interpretation (Textor 2013, 387.)

[83] Textor 1996, 298.

[84] Textor 1996, 297.

[85] **WL**, §74 [I.333]; cf. §79 [I.375].

[86] By this Textor, of course, means nothing else than attributes which are represented by pure concepts in themselves.

[87] Textor 1996, 295.

> If every actual object differs from every other in at least one inner attribute that is conceptually representable, then there is for every actual object a singular pure concept of the form [something which has Φ].[88]

To judge from what we read here, Textor's argument appears to be based upon the following form of inference:

$$\frac{(\forall x)(\forall y)(\exists \Phi)((x \neq y) \rightarrow (\Phi x \& \neg \Phi y))}{\therefore (\forall x)(\exists \Phi)(\forall y)((x \neq y) \rightarrow (\Phi x \& \neg \Phi y))}$$

But this form is invalid, as can be seen, e.g., by considering the distinction between pointwise and uniform continuity in analysis.[89] Moreover, Textor's assumption (†) is not supported by the textual evidence. Bolzano simply says that no two objects are equal in all their inner attributes. He does not add the qualification "conceptually representable". On the contrary, when discussing objects that are equal with respect to all of their inner, conceptually representable attributes (he calls such objects *mathematically similar*[90]), he clearly states that they may differ either in their outer attributes (relations) *or* in respect of inner attributes that are not conceptually representable.[91]

We are not convinced, then, by Textor's argument in support of the claim that Bolzano has to construe necessary existence subjectively, namely, in terms of the concepts *human beings* can form. On the contrary, we take him to be speaking of concepts *in themselves* in his definitions. In any case, a notion of necessity framed in terms of human cognitive capacities seems obviously at odds with central parts of Bolzano's metaphysics: if subjectivity were involved, we should surely expect it to be God's and not man's.

This being said, it seems fair, in light of the invalidity of the above argument form, to assume that Textor made some further assumption, even if it is not clear what this might have been. One possibility, suggested by a remark of Roderick Chisholm Textor quotes,[92] would be to suppose that whenever there is a collection (be it finite or infinite) of pure concepts representing certain attributes, there is also a conjunctive concept representing precisely those things that have each of

[88] Textor 1996, 295.

[89] For those unfamiliar with that distinction, here is another example. The decimal expansions of any two distinct real numbers differ in at least one place, but it does not follow that any given real number differs from all others in some particular decimal place.

[90] **WL**, §91.

[91] **WL**, §91, note [I.433]: "It is obvious that objects that agree in all their inner attributes which are representable by concepts can at most be distinguished by their *relations* to other objects, or by properties of which we can only form mixed ideas (i.e., ideas containing an intuition)."

[92] Textor 1996, 297.

those attributes.[93] In modern terms: if $\{\Phi_\alpha | \alpha \in I\}$ is the (indexed) set of the conceptually representable (inner) attributes of a given real object, then there is also a conjunctive concept:

[Something that has each of the attributes Φ_α, for $\alpha \in I$]

representing precisely those things that have each of the attributes Φ_α. If we were to accept this principle, along with the assumption that the identity of indiscernibles still holds when restricted to conceptually representable inner attributes, then we could indeed obtain individual concepts (haecceities) in this way, by simply conjoining the concepts of all the (conceptually representable) inner attributes of a given thing.

Although, as noted above, Bolzano seems not to have endorsed the stronger version of the principle of the identity of indiscernibles, his account nevertheless encounters a difficulty in light of the above observations. For if, as he seems to want to claim, no finite substance is necessary, the associated conjunctive concept for each of them would have to be general, i.e., for any finite substance, there would exist another that is mathematically similar to it (i.e., indistinguishable from it with respect to its conceptually representable inner attributes). This is a large assumption, which would constitute a violation of Leibniz's version of the identity of indiscernibles (i.e., no two actual objects are perfectly *similar*), and also seems to go far beyond the principle of plenitude as it is usually understood. Alternatively, one could accept, with Leibniz, that some (or all) such concepts were singular, and more (or all) objects consequently necessary. Finally, given their transfinite complexity, one might simply question whether there are such concepts—our assumption that the collection of conceptually representable properties of a given object is a set rather than a proper class might be rejected, for one thing, in which case it might seem quite plausible to deny that there are such conjunctive concepts.[94] Since to our knowledge Bolzano never addresses these points, we assume that he did not notice the above problem.

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Finally, we turn to the subject of necessary totalities. Recall that Bolzano was committed to the necessary existence of the universe. This is because it is an actual

[93] Textor's comment in a note seems to count against this, however: "In contrast to Chisholm, Bolzano did not require that the property that distinguishes an actual object from all others be a *conjunction* of conceptually representable attributes. The 'individuating' property can also be simple." (Textor 1996, 297, note 6.) It is not clear from the text what Textor takes the basis for this claim to be.

[94] What Bolzano says at **WL**, §101 [I.470] seems to count against this, however.

object and there is a pure concept that represents it uniquely, *viz.*, [the collection of everything actual, with the exception of God].[95] What is said here about the universe holds more generally, however. For if all the objects standing under a certain concept $[C]$ are actual, then the *totality* of these objects (the collection of all of them) will also be actual. Moreover, according to what Bolzano says in §68 of the *Theory of Science*, this totality will be a single object:

> There is another whole class of ideas that obviously have and can have only one object, namely, ideas of the form 'the totality of all things that have (the attribute) b', e.g., 'the universe', 'the entire human race', 'the collection of all truths', etc. It is the very form of these ideas that makes it impossible that they should represent more than one object (which is always composed of parts, and sometimes of infinitely many of them). The only exception arises if there are no things at all that have the attribute b. This is due to the fact that there can be only one collection of *all* objects that have a certain property b.[96]

It follows immediately from the above definition of necessary existence that each such totality exists necessarily. That is, if $[C]$ is an objectual concept and all the objects standing under $[C]$ are actual, then the totality of the C exists necessarily.

Textor has observed that, given the large number of pure concepts representing only actual objects, it follows that there are a staggering number of necessary totalities in the universe.[97] Judging from some of his remarks, Bolzano does not seem to have noticed this. Textor, for his part, thought that the existence of so many necessary totalities was "a bizarre consequence that should lead us to reject Bolzano's theory [of necessary existence]."[98] Once again, we find ourselves obliged to disagree with him. Much of the difference of opinion here is no doubt attributable to Textor's decision to examine Bolzano's theories as accounts of *metaphysical* necessity.[99] Given this premise, we agree wholeheartedly with him: finite rational beings, for example, did not *have to* exist, if metaphysical necessity is meant. However, we are sure that Bolzano himself would have agreed with this, and claimed that the necessity in this case is *moral*—had God not furnished the world just as he has (with respect to its conceptually determinable features), he would not have done what is best, and that is (morally) impossible. If, as Bolzano assumes, the purely conceptual truths undergird both metaphysical and moral necessity, then, in a certain sense, they constitute God's plan for the universe, the best of all (metaphysically) possible worlds. Hence:

[95] **WL**, §88 [I.414].
[96] **WL**, §68 [I.307 f.].
[97] Textor 1996, 330 ff.
[98] Textor 1996, 336.
[99] Textor 1996, 232.

> Only an existence which follows from purely conceptual truths (or the assertion of which is a purely conceptual truth) can be called necessary existence [...].[100]

This last claim of Bolzano's, by the way, might be taken to have wider scope than we claimed above, especially in light of his views on necessary totalities. For among the purely conceptual propositions asserting existence there are not only singular ones such as [God exists] or [The universe exists], but also general ones such as [Rational beings exist] or [Plants exist]. If we take Bolzano at his word in the above remark, it would seem to follow not only that God and the universe exist necessarily, but also that rational beings and plants do—and we can make sense of this even according to Bolzano's official definition by speaking of the *totality* of rational beings, etc. The only thing we cannot say, supposing what Bolzano says elsewhere about purely conceptual representations of individuals is true, is that some *particular* rational being or plant exists necessarily. In brief, the species would seem to be necessary, its members contingent.

The structure one observes in this case—the universe as a necessary existent, containing many necessary sub-totalities but no necessary individuals—seems to be of a piece with his views on necessary truth, where a dense network of conceptual truths nonetheless leaves infinitely many truths concerning individuals and their attributes undetermined.

We can see that this position on necessary totalities is consistent with the thesis that there are no necessary individuals in the universe by considering the following model. Let the domain be the set of real numbers between 0 and 1, and the set of concepts be conditions involving only the even decimal places of the (unique) non-terminating decimal representations of these real numbers. In this case there will be an infinite number of necessary (i.e., conceptually determined) totalities, including the universe (i.e., the set of all real numbers between 0 and 1), but no necessary individuals.

5 Contingency and free will

A complication in Bolzano's position involves his views on freedom. The reason why this question is important for the present purpose is that several of his remarks suggest that he thought that free action was the ultimate source of all contingency.

As we have seen, Bolzano did not think that God was free in the customary sense of being able to do the opposite of what he in fact does. With respect to human beings and other like creatures, however, he seems to have held different

[100] **WL**, §182, note. Clearly, when saying that the existence of something follows or results [*folgt*] from truths, Bolzano is speaking improperly (for, in the strict sense, only truths follow from truths). We thus take the parenthetical comment to be a more precise version of the first part of the sentence.

views at different points of his life. In the *Treatise of the Science of Religion*, he presents a position he calls *indeterminism* as his own. According to this theory, free actions, or more precisely resolutions, are not completely determined by a ground.[101] Behind this view is an account of the psychology of rational creatures who also are capable of forming wishes or desires for things they do not possess. In some cases, such creatures will find themselves in a situation where their wishes suggest one course of action, while reason, taking account of the highest moral law, suggests another. In such cases, what actually happens is indeterminate, i.e., not fully determined by the foregoing course of events.[102] Only some beings, however, are endowed both with reason and desires; others are not free in any respect. God is among the latter group, since, lacking nothing, He has nothing to wish for.[103]

Already in one of his earliest works, the 1810 *Contributions to a better grounded Presentation of Mathematics*, Bolzano suggests a strong connection between freedom and contingency. In the following passage he simply equates the necessary with the unfree:

> Everything that we think of as existing we must think of either as *necessary* or as *free* (i.e., not necessary).[104]

And in the *Treatise of the Science of Religion* he argues that if there were no freedom, all modal distinctions would collapse:

> If there were no freedom, then everything actual would also be *necessary* and everything that is *not actual* would also be *impossible*. The *possible*, the *actual*, and the *necessary* would then be three concepts with the same extension, which sounds very odd indeed.[105]

Based on these remarks and his broad conception of necessity, one would expect Bolzano's view to be that there is contingency in the universe if and only if some actions are free.[106] That Bolzano held that the existence of free actions yields contingency in the universe in general might have been a result of his assumption that all created substances stand in constant reciprocal interaction with each other:

[101] **RW** I, §15 [I.46f.].

[102] **RW** I, §15 [I.47]. Note, however, that Bolzano stresses that no action is *completely* indeterminate. (Cf. **RW** I, §26 [I.75] and Bolzano 1838, 184.) We will discuss this point in more depth below.

[103] **RW** I, §78, no. 3a [**BBGA**, I.6/1, p. 223 f.].

[104] Bolzano 1810 I, §13.

[105] **RW** I, §90 [I.252; **BBGA** I.6/1, 34]; cf. I, §76, note [I.194; **BBGA**, I.6/1, 221].

[106] This interpretation has been defended for the notions of contingent and necessary *truth* in Rusnock 2012. Given the close connection between necessary and contingent existence and truth, we take these arguments to be equally applicable to the notion of contingent existence. In the appendix to this paper we discuss Textor's recent critique of this interpretation.

> [I]t follows from the well known truth that God is the Creator and Governor of the whole world, and from the law of the universal reciprocal influence of created objects, that the complete cause of the existence and the attributes of [a single fully determinate actual object] can only be the totality of all existing objects. For each of them has some influence upon it, no matter how small, so if that other thing did not exist, our object would be different.[107]

Given this, we can see why he might have thought that the existence of even a single free being would result in the contingency of *all* created beings. For whenever a being acts freely, there arises a state of that being that might have been otherwise. By virtue of the cosmic nexus, this will give rise to effects in all other beings (free as well as unfree) that might have been otherwise than they are. But this means that every created being could be other than it is, and this would seem sufficient to justify calling them contingent.[108]

Note, however, that the *Treatise of the Science of Religion*, though published in 1834, was based on lecture notes from his courses at the Charles University, thus before his dismissal in 1819. The text was assembled without his knowledge, and he was not able to revise it in any systematic way. Thus it mostly reflects his views before 1820, and not necessarily those he held when writing the *Theory of Science*. In the meantime, he had published *Athanasia, or Grounds for the Immortality of the Soul*.[109] On the issue of freedom, Bolzano presents two different positions in *Athanasia*, the indeterminist theory sketched above and another, deterministic one, according to which there are no free actions or resolutions. His main concerns lying elsewhere, he makes no attempt to decide the question one way or another, instead arguing that on either theory the rest of his arguments still go through.[110]

The neutrality expressed in *Athanasia* may well not have accurately reflected Bolzano's own views at the time. In a letter to František Příhonský dated 30 August 1825,[111] he seems fairly strongly inclined towards the determinist position, a change of mind that also seems implicit in remarks in another letter to Michael Josef Fesl of 20 April, 1835.[112] This being said, there is no reason to suppose that Bolzano was anything less than fully candid when he wrote in the *Athanasia*

[107] **WL**, §379 [III.501].

[108] As attractive as this view may be, it seems to be in tension with Bolzano's commitment to the claim that the universe is necessary, even though its ultimate parts are contingent.

[109] Bolzano 1838; first edition, 1827. This work, aimed at consoling those who entertain doubts about immortality, was perhaps Bolzano's most successful publication, the only book of his issued in a second edition during his lifetime. Though not really a philosophical treatise, it is nonetheless one of the main sources for his metaphysics.

[110] Bolzano 1838, 178 ff.

[111] **BBGA** III.3/1, p. 64.

[112] Winter 1965, 107.

that he knew of no grounds capable of decisively settling the question one way or another.[113] However, in some later writings, in which Bolzano is concerned with the properties of time and space, he argues for theses that hardly seem to be compatible with the indeterministic position he defended in his earlier writings—albeit without explicitly pointing out what bearing these theses might have on the issue of determinism.[114] Together with the letters to Příhonský and Fesl, though, they make the assumption that Bolzano gave up on his earlier views on free will quite reasonable.[115]

In the *Athanasia* Bolzano describes indeterminism as the thesis "that our resolutions take place without any determining ground."[116] Note that in this context we can take the term 'ground' to be interchangeable with 'cause'.[117] This characterization is to a certain extent misleading, as it suggests that our resolutions have no ground at all according to the indeterministic position. In the course of his discussion, however, Bolzano remarks that even the most rigorous indeterminists should acknowledge that any given resolution is at least *partially* determined by grounds.[118] He holds in particular that God is a partial ground of every action.[119] Characteristically Bolzano spells out the notion of determination involved here precisely. In the *Theory of Science* we find it introduced as follows:

> [T]he sense of the locution that B is determined by A turns out to be this: There are

[113] Bolzano 1838, 178 f.

[114] It might very well be that Bolzano chose not to do so because he feared that the doctrine of determinism could have dangerous consequences when misunderstood by people who are not properly educated. (Cf. Bolzano 1838, note 63, p. 315 f.)

[115] That Bolzano converted from indeterminism to determinism is also argued by Eduard Winter (1932). Winter bases his observations mainly on Bolzano's letters to Fesl and Příhonský. He argues moreover that the arguments Bolzano puts forward in favour of determinism in the *Athanasia* are decisive, despite Bolzano's apparent neutrality. Before Winter, Hugo Bergman (1909, 154) came to the same conclusion on the basis of Bolzano's letter to Fesl. Mostly following Winter's arguments, Eljakim Weinberg (1938) argues that Bolzano is clearly a determinist as does Andrej Krause (2004, 293-4).

[116] Bolzano 1838, 179.

[117] In the **WL**, Bolzano introduces a distinction between the relation of causality that obtains between actual objects and the relation of *grounding* which is a relation between propositions. (Cf. **WL**, §201.) In his earlier writings (including the *Athanasia*) he does not clearly distinguish between those two relations, frequently calling actual objects the *grounds* for other actual objects. In the **WL** the notion of causation is defined in terms of the notion of grounding. According to this later account, an object x is the *cause* of an object y if and only if the proposition [x has actuality] is the *ground* for the proposition [y has actuality] (and the latter the *consequence* of the former). Grounds frequently consist of a collection of truths, each of which Bolzano calls *partial* grounds. If [x has actuality] is a partial ground of [y has actuality], Bolzano also calls x a *partial cause* of y. (Cf. **WL**, §168 [II.208].) For a more detailed treatment of Bolzano's notion of grounding see Tatzel 2002.

[118] Bolzano 1838, 184; cf. 182.

[119] Cf. **RW** I, §26 [I.75] and **RW** I, §15 [I.47].

> certain propositions that state attributes of B which stand in the relation of deducibility to certain other propositions that state attributes of A, all with respect to certain ideas which refer to attributes of A. As soon as these ideas are replaced by others in such a way that the statements about A become true, the statements about B must also become true. Thus we say that a cause determines its effect, if we want to indicate that from certain propositions concerning the character of the cause we can deduce propositions which describe the character of the corresponding effect.[120]

Indeterminism would on this account amount to the claim that human resolutions are partially underdetermined by their causes, i.e., that some of the attributes of a resolution of the human will are not determined by attributes of its partial causes. Accordingly, determinists argue that each actual object—and in particular each resolution of the human will—is not just partially, but *completely causally determined*, i.e., *every* attribute of a particular resolution of the human will is determined by attributes of its cause. In the posthumously published *Paradoxes of the Infinite* we find claims that seem to commit Bolzano to the latter position:

> Given any two instants α and β, no matter how close or far apart, we may regard the state of the world in the former as a cause and the state of the world in the latter as its (mediate) effect .... It follows that from the specification of the instants α and β, along with all the forces possessed by created substances at the instant α, the place where each was then located, and finally any divine actions on one or another of these substances in the interval $\alpha\beta$, it must be possible to deduce not only the forces these substances come to possess at the instant β but also their locations, in the same way that an effect (whether it be mediate or immediate) is deducible from its complete cause. This, again, requires that all the attributes of the effect must be deducible from the attributes of its cause by means of a major premise composed entirely of pure concepts of the form: Every cause with the attributes $u, u', u'', \ldots$ has an effect with the attributes $w, w', w'', \ldots$.[121]

From any all-encompassing description[122] of the state of the world at a given instant it is possible to derive a complete description of the state of the world at any subsequent instant "as an effect from its cause". According to Bolzano's definition of determination, this amounts to the claim that any state of the world causally

[120] **WL**, §180.1-2 [II.227]. We find a similar definition in Bolzano 1842, §4.

[121] **PdU**, §27, no. 3.

[122] Note that it is rather unlikely that Bolzano thought that any human being was capable of giving or even *grasping* such a specification. But this should not come as a surprise, for Bolzano did in fact hold that the causal explanations human beings are capable of giving are always partial (**WL**, §379 [III.501]). Note further that the divine actions Bolzano mentions would not introduce any indeterminacy, since, as we have seen, he maintained that God is not a freely acting being (cf. **RW**, I, §78 [**BBGA**, I.6/1, p. 223]; Bolzano 1838, 183).

determines all subsequent states completely. It is hard to see how Bolzano could still have allowed for indeterminism in his sense against the background of such claims.

One might doubt that this was already Bolzano's view by the time he published the *Theory of Science*. After all, we find occasional remarks in that work in which he speaks of human beings as *free* beings[123] and even of "the truth that we are free."[124] But there is a reading under which this is compatible with determinism. Already in the *Treatise of the Science of Religion* Bolzano argued that there is a certain sense in which one can speak of the freedom of human beings that is also acceptable for determinists:

> The wide diffusion of the system of determinism (which has far more adherents than indeterminism) already shows that people take the word *freedom* in a different sense [...]. Namely, it seems that under the *freedom* of a being we quite often represent nothing other than a kind of *independence* of its resolutions from *external objects*, where we allow that there may well be a ground of this resolution in the being itself.[125]

A thorough assessment of the Bolzano's later views on freedom and determinism goes far beyond the scope of this paper. In this context we will merely point out one consequence of the assumption that Bolzano indeed came to reject indeterminism that is crucial for the assessment of his account of necessary existence and his analysis of the modalities in general. As noted above, his assumptions that freedom exists and that it goes hand in hand with contingency permitted him to adopt a broader notion of necessity without occasioning the collapse of modalities Leibniz had warned of. If, however, he came to reject indeterminism by the time he wrote the *Theory of Science*, and was aware of the consequences, we have to assume that he also gave up his views on the connection of freedom and contingency. For Bolzano clearly states in the *Theory of Science* that there are objects which exist only contingently,[126] and an endorsement of determinism together with the thesis that there is contingency in the universe if and only if some actions are free would be inconsistent with this claim. The view we are left with is a combination of the thesis that every actual object is completely causally determined and the thesis that some actual objects exist contingently because they are not representable by pure concepts.

Since there does not seem to be any logical connection between Bolzano's definition of necessary existence as given in §182 of *Theory of Science* and his

[123] **WL**, §104, note 3 [I.488].
[124] **WL**, §315 [III.258].
[125] **RW** I, §78, no. 3a (**BBGA** I.6/1, 224).
[126] Cf. **WL**, §74 [I.333].

account of freedom, this position does not seem to be inconsistent. However, it would leave Bolzano's analysis of the modalities to a certain extent unmotivated. In particular, we would no longer have an answer to the question as to why objects that are not representable by pure concepts exist only contingently or with what right one should even use the term 'contingent' in this case.

6 Appendix: Further Remarks on Necessary Truth

In our interpretation of Bolzano's notion of necessary existence we pointed out several disagreements with the one offered in Textor's 1996 book *Bolzanos Propositionalismus*. In this we have been following Rusnock's interpretation of Bolzano's definition of necessary truth.[127] In a recent paper, Textor has defended his account against Rusnock's criticisms, in which context he also added further remarks on necessary existence (a topic not discussed in Rusnock's paper). Since Textor's arguments also pertain to what we have discussed in the present paper, we will consider the main points of disagreement in this appendix.

By our reckoning, there were three key differences of opinion between Textor (1996) and Rusnock (2012):

1. Textor took Bolzano's definitions to be aimed at the notion of *metaphysical* necessity.[128] Rusnock, by contrast, took Bolzano to be aiming at a much broader notion of necessity, which encompassed not only metaphysical but also moral necessities in Leibniz's sense[129]—a point for which we also argued above in section 3.

2. Textor thought that Bolzano's theory of necessary truth was based upon his theory of the objective grounds of truths. More specifically, he claimed that

   > The truth of a purely conceptual truth depends ultimately on conceptual basic truths, and the truth of the latter can only depend upon the concepts of which they consist. But if the truth of a proposition ultimately depends only on its components, then it is unthinkable that it is contingently true.[130]

   He then spelled out the dependence in question in terms of Bolzano's notion of the objective grounds of a truth. Rusnock pointed out that since the terms of the grounding relation are always truths, this gave rise to an infinite regress. He also adduced passages in which Bolzano appears to consider

[127] Rusnock 2012.
[128] Textor 1996, p. 232.
[129] Rusnock 2012, section 4.
[130] Textor 1996, 285.

precisely the interpretation Textor had proposed, only to reject it.[131] Textor has since developed a modified proposal, which we discuss below.

3. Rusnock pointed to several passages in which Bolzano connects contingency with freedom, suggesting that on Bolzano's view, "the truth or falsity of a proposition does not depend upon the arbitrary choice of any being if and only if it is purely conceptual."[132] Textor had mentioned no such connection in his book.

On metaphysical and moral necessities In his reply to Rusnock, Textor does not directly acknowledge the first point. There is no discussion of the scope of Bolzano's intentions in framing his definitions, nor is there any mention of the distinction between metaphysical and moral necessity. In the end, we are not sure where he stands on this question.

On Textor's dependence account of necessary truth The textual basis for Textor's interpretation consists of remarks like the following, from §42 of the *Theory of Science*:

> If [a] proposition [...] consists merely of *concepts*, as for example the proposition that virtue deserves respect, or that the sum of any two sides of a triangle is longer than the third, etc., then its truth and falsity will merely depend upon the nature [*Beschaffenheit*] of these concepts....[133]

Similar remarks may be found in the *Contributions to a more well-founded presentation of mathematics*, for example:

> That a certain predicate belongs to a certain subject depends as much on the subject as on the predicate and its properties. Now if the latter is a composite concept, then its properties depend on those individual concepts of which it is composed and on their properties, i.e., on those judgements which can be formed about those concepts. Therefore the truth of a judgment whose predicate is a composite concept depends on several other judgements and so ... it is clear that it cannot be an axiom [*Grundsatz*].[134]

Notice, however, that the dependence spoken of the second passage is said to consist in a relation between *judgments*, and that Bolzano explicitly claims that

[131] Rusnock 2012, section 3.
[132] Rusnock, 2012, p. 828.
[133] **WL**, §42 [I.180].
[134] Bolzano 1810, I, §20.

where there is such dependence, we do not have an axiom. By contraposition, then, there is no such dependence in the case of axioms.[135] We find similar remarks in the *Theory of Science* concerning what Bolzano calls basic truths (*Grundwahrheiten*).[136] Bolzano's occasional remarks on the dependence of the truth of a conceptual proposition on the nature of its constituents alone can thus be explained as a somewhat imprecise manner of speaking that was not intended to cover all cases (in particular, not meant to apply to basic truths), and thus could not be the basis of his general account of necessity. In his 2013 reply, Textor did not provide any new textual evidence bearing on this matter of interpretation. Instead, as we shall see below, he looks for resources elsewhere in Bolzano's philosophy that would help him flesh out an account along the lines he originally suggested. So we still do not see any compelling textual evidence in favour of Textor's reading.

Beyond this, given what we read in the *Theory of Science* about the nature of concepts in themselves, such an account would seem to be inadequate in ways that should have been obvious to Bolzano himself. Consider, for example, a proposition of the form 'A has b', where [A] and [b] are both simple concepts.[137] How would Textor's account apply to such a case? Let us say, as he suggests, that the truth or falsity of [A has b] depends only upon the attributes of its constituents, i.e., [A], [has], and [b]. At this point we need to ask what attributes these ideas might have according to Bolzano. When we consult the *Theory of Science*, however, we find that he has left the cupboard nearly bare. His ideas in themselves are nothing like the ideas or representations of his predecessors: they do not resemble their objects like copies taken from some original, and their parts correspond neither to the parts nor to the attributes of their objects.[138] In fact, in the case of simple ideas with objects like [A] and [b], the only attribute Bolzano recognizes is their *extension*.[139] Far from the mental pictures and suchlike of many early modern

[135] Cf. Rusnock 2012, p. 824, note 31.

[136] Cf. **WL**, §45 [I.208-9].

[137] In §132 of the **WL**, Bolzano calls these *simple propositions*; in Bolzano 1810, as just noted, all axioms are claimed to have simple subjects and predicates (II, §20–21).

[138] See, e.g., **WL**, §§52, 63, 64. It should be noted that Bolzano significantly changed his conceptual framework in the time between the *Beyträge* (1810) and the **WL** (1837). In the *Beyträge*, Bolzano still conceived of concepts—the notion in terms of which he defines necessary existence in the **WL**—in a quite subjective, broadly Kantian, way (cf., e.g., Bolzano 1810, I, §8; II, §5; and especially §§14-15 of the manuscript *Aetiologie* (in **BBGA**, 2A5) to which Textor also refers in his reply). His talk of the truth of a judgement depending on the nature of its constituent concepts makes a certain amount of sense in that earlier framework. (All the same, as documented above and below, he explicitly excluded axioms [*Grundsätze*] from the scope of such claims even in 1810.) As his understanding of propositions and concepts evolved, however, it became increasingly less plausible. With this in mind, we are inclined to regard the remarks on dependence in the *Theory of Science* as simple relics of the earlier usage.

[139] **WL**, §96, no. 3 [I.446]; cf. above p. 9.

philosophers, Bolzano's simple ideas are much more like the non-logical constants of an interpreted first-order language: simple, abstract objects with extensions.

Given this, what would an application of the dependence thesis look like? We might say that [A], [has], and [b] have attributes which render them apt to serve as subject, copula, and predicate in a proposition. Beyond, this, we might appeal to the extensions of [A] and [b]. But that is all: Bolzano simply doesn't give us any other attributes to work with. In the end, then, our appeal to the attributes of the constituent concepts of the proposition [A has b] might at best look something like this:

> [A], [has], and [b] are three concepts which can be combined to form a proposition [A has b], and every object represented by [A] has one of the attributes represented by [b].

But this is just to say, according to Bolzano's definition,[140] that [A has b] is a true proposition. It is obvious that considerations of this sort can provide no explanation of the *necessity* of [A has b], since the same explanation would apply equally well to any such proposition, even one in which [A] is an intuition. Nor can it even provide an explanation of the *truth* of [A has b]. On the contrary, [A has b] is the ground of the truth [[A has b] has truth] according to Bolzano,[141] so the explanation runs in the opposite direction.

In our opinion, Bolzano already saw this in 1810. As he wrote in the manuscript "Allgemeine mathesis,"

> With genuine axioms [*Grundsätze*], no ground is thought why the predicate belongs to the subject. For this ground would have to be another judgment. Now one might well counter that the ground of why the predicate belongs to the subject may lie in the subject and predicate themselves. But with a little reflection one will easily recognize that if this ground does not lie in one or several new judgments, the expression 'the ground lies in the subject or the predicate' just says: it's that way because that's the way it is, or the ground why this predicate belongs to this subject lies in the fact that this predicate belongs to this subject, i.e., it is grounded in itself, i.e., in other words, it has no ground.[142]

[140] **WL**, §28 [I.124]; cf. §131 [II.26-27], and Bolzano's letter to Exner of 18 December, 1834 (**MM-EX**, p. 167): "A proposition is true when it attributes to a subject a predicate that it possesses, or (in other words) when every object that stands under the subject concept of the proposition has an attribute that stands under the predicate concept."

[141] **WL**, §214 [I.374].

[142] "Allgemeine mathesis," I, §13 (**BBGA** 2A5, p. 25). This text was originally intended to follow the first instalment of the *Beyträge*. It too dates from 1810. Cf. the similar remarks at **WL**, §45 [I.208-209].

Nonetheless, it is clear that Textor still wants to develop a bolzanian account of necessity in terms of the dependence of the truth of purely conceptual propositions on the nature of their constituent concepts alone. However, acknowledging the problem of an infinite regress on his original interpretation, which appealed only to the relation of ground to consequence [*Abfolge*], he now suggests that we consider *conditions* as well as grounds as playing a role in Bolzano's account of necessity.[143] He further suggests that the necessity of basic truths can be explained precisely by the fact that they are neither grounded in nor conditioned by other truths.[144]

We see several problems with this suggestion. To begin with, if we follow Textor in characterizing a condition of x as "something that *has to* exist for x to exist,"[145] then it would seem to be circular to define necessity in terms of conditions.

Second, if we have understood him correctly, Textor thinks that Bolzano sought to *define* necessity in the strict sense (i.e., necessary existence) in terms of conditions, more precisely, that he held that a being is necessary if and only if unconditioned.[146] However, while one can certainly find Bolzanian arguments in favour of the claim that an unconditioned being is necessary,[147] it is quite clear that he did not accept the converse, as would seem to be required for the sort of definition Textor has in mind. For Bolzano clearly seems committed to the necessity of conditioned objects: for example, the universe, which has God's existence as a condition for its own, and attributes of God such as omniscience and omnipotence, which, as adherences, have the existence of a substance (namely, God) to which they belong as a condition of their own existence.[148]

Third, Textor's account requires us to look upon conceptual *truths* as conditions, as for example when he says that "God is the only real being whose conditions are only conceptual *truths*."[149] This does not sit well with what Bolzano says about conditions in the *Theory of Science*. For, according to the definition we read in §168, no. 4, a condition, in the strict sense, is an actual object. But truths (truths

[143]Textor 2013, *passim*

[144]Textor 2013, p. 391.

[145]Textor, 2013, p. 386; cf. Bolzano, *Phil. Tageb. 1817-1827*, **BBGA** 2B17, p. 67: "A condition is that which must exist in order that something else can exist. . . ." As we document below, this is not Bolzano's only conception of a condition.

[146]Textor 2013, p. 387.

[147]Textor (2013) quotes one of these on p. 387.

[148]In **WL**, §74 [I.333], Bolzano states that the universe is uniquely representable by a pure concept, as are God and certain of his powers and attributes; thus, according to his definition, these objects are necessary. In **RW**, I, §81, no. 3, note (**BBGA** I.6/1, p. 231), he states that the world is dependent upon God. Finally, **RW**, I, §70, no. 3 (**BBGA** I.6/1, p. 211) states that the existence of a substance is a condition for the existence of an adherence.

[149]Textor 2013, p. 389.

in themselves, that is), as he tells us right at the start of the *Theory of Science*, are nothing actual.[150] Now it is true that in the *Treatise of the Science of Religion*, Bolzano does allow that truths may be conditions.[151] But adopting this understanding of a condition creates difficulties for Textor's interpretive approach. For why should this part of the *Treatise* be considered germane to Bolzano's understanding of necessity, while pronouncements in the same text on moral necessities and the connection between freedom and contingency are discounted (especially given that the former requires us to disregard explicit remarks in the *Theory of Science* while the latter do not)?

Finally, Textor's idea[152] that *all* non-basic conceptual truths are dependent (i.e., grounded in or conditional on) solely on truths about the concepts of which they are composed seems to be clearly at odds with Bolzano's views on grounding. Consider one of his stock examples for the relation of grounding obtaining among conceptual truths. In *Elements* I, 1, Euclid infers the existence of a point c equidistant from two given points a and b from the existence of a point of intersection of two circles, one centred on a, the other on b, both with radius $= ab$. Bolzano insists that Euclid has things backwards, that instead the ground of the truth that the circles intersect lies in the truth that there is a point c lying equidistant from a and b.[153] But is the latter proposition really about the *concepts* that occur in *Elements*, Prop. I.1? Further, Bolzano argues that a proposition of the form [A has b and c] is grounded in the two propositions [A has b] and [A has c].[154] Again, are the latter two propositions claims about the *concepts* of which the former is constituted? This hardly seems credible given Bolzano's constant attention to the distinction between concepts and the objects that stand under them. Rather, as he tells us, the proposition [A has b] is about the *objects* that stand under [A].[155]

On the whole, then, we are not persuaded that Textor's new interpretation is viable.

On freedom and contingency With respect to the third point, Textor writes that he "remains unconvinced" by Rusnock's contentions concerning a connection between freedom and contingency in Bolzano's thought. This requires him to dis-

[150] **WL**, §25.

[151] In §222 of the **WL** [II.389], too, Bolzano allows that truths may be called conditions in a wider sense. But in this wider sense, conditions are a special kind of grounds, and Textor has already acknowledged that an account of dependence in terms of grounds will not work for basic truths.

[152] 2013, p. 391.

[153] "On the mathematical method," §13 (**MM-EX**, p. 70); cf. **WL**, §525, note [IV.262-263].

[154] **WL**, §221, no. 7.

[155] **WL**, §130. Examples like this could easily be multiplied. Consider, e.g., Bolzano's discussion of the ground of the highest moral law in **WL**, §200, or his remarks on the grounds of the intermediate value theorem.

count passages such as the ones quoted above (pp. 30f.) where Bolzano is quite explicit on this connection.

His reason for doing so is that "Bolzano's treatment of necessity (contingency) in the *Wissenschaftslehre* does not mention indeterminate choice: the text is all about conceptual and intuitive truths."[156] And this is certainly true. However, an examination of Bolzano's other texts is often helpful in elucidating difficult passages in the *Theory of Science*. Textor's own example shows that he finds this practice acceptable, since he draws on a number of other texts from various periods in his own discussion. Given this, we would expect him to provide some particular reason to discount the remarks on the connection between contingency and freedom while using others from the same texts in the construction of his new interpretation. Yet, as far as we can tell, none is indicated.

A further reason Textor cites for discounting such passages is that:

> Rusnock only secures conceptual truth a place in his reconstruction by ascribing to Bolzano the view that the truth (falsity) of a proposition P does not depend upon the arbitrary choice of any being if and only if P is purely conceptual. But this view raises a question very similar to the one Bolzano was supposed to have answered: Why does the truth of a conceptual truth not depend upon the arbitrary choice of any being? Bolzano can hardly have failed to notice this problem. To say, as Rusnock does, that Bolzano made the fundamental assumption that God cannot interfere with conceptual truths only labels the problem.[157]

It seems to us that Bolzano himself provides a response to this objection. In a manuscript where he discusses important differences of opinion with Leibniz, we read:

> When Leibniz says that the so-called fate, which binds even the divinity, is nothing other than God's own *nature*, His own *understanding*, I say, on the contrary, that the purely conceptual truths are this fate, insofar as they express not God's holiness, but other things.[158]

But if conceptual truths not expressing God's holiness (we think it reasonable to identify these with what Leibniz called *metaphysically necessary truths*) are God's *fate*, then it seems fair to say that they are in some sense prior even to God (not in the realm of being, since they do not exist, but in the sense that they are simply *there*[159]). If we now assume, as Bolzano appears to, that the realm of truths

[156] Textor 2013, p. 389.

[157] Textor, 2013, p. 389

[158] **BBGA**, IIB.18/2, p. 46.

[159] Bolzano even says (**BBGA**, IIB.18/2, p. 45) that if there were no God, there would still be truths in themselves.

is where all explanation comes to an end (i.e., that there is no stepping outside of the realm of truths once we reach the basic truths), then it is not simply labelling a problem to say that they are God's fate, as *there is no problem*, i.e., nothing further to explain.[160] (The remaining purely conceptual truths, the *moral necessities*, would have their necessity explained as sketched above, namely, because God does not act freely in creating the universe). We think something like this may in fact have been Bolzano's view. This is not to say that we think it is correct or that our readers will leap to embrace it. In case any reminder is needed, our goal is to interpret, not to defend, Bolzano's remarks.

[160]Cf. Rusnock and Šebest´ík, 2013, p. [7] ff.

Abbreviations

BBGA Bolzano, B. 1969–. *Bernard Bolzano-Gesamtausgabe*, ed. E. Winter, J. Berg, F. Kambartel, J. Loužil, B. van Rootselaar. Stuttgart-Bad Cannstatt.

RW Bolzano, B. 1834. *Lehrbuch der Religionswissenschaft.* Sulzbach. New edition by J. Loužil in the **BBGA**, Series 1, Vols. 6/1-8/4.

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