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Uwe Meixner

Knots of Thoughts

University of Augsburg 2026

Of making many books there is no end.

Ecclesiastes 12:12

Icicles filled the long window
With barbaric glass.
The shadow of the blackbird
Crossed it, to and fro.
The mood
Traced in the shadow
An indecipherable cause.

Wallace Stevens, *Thirteen Way of Looking at a Blackbird*, VI

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Preface and introduction

Before addressing the content of this monograph, let me first point out some external "peculiarities" of it. They may irritate some readers (and they certainly irritate almost all publishers of academic books).

There are no footnotes and no endnotes in this book. *Notes* are integrated into the main text, in blocks of smaller print. The reason for this unusual layout is that many of the notes are too important – in their context – for figuring as endnotes, and that many of them are too long for figuring as footnotes. In contrast to this conspicuous "aberration" in the treatment of notes, it is perhaps hardly noticed that, contrary to prevailing typographical rules, a closing quotation mark [simple or double] that meets a point or comma is always followed (in the order of reading) by point or comma, and never follows them – *unless*, of course, point or comma are part of what is being *quoted*. (It seems logical to me that quotation marks should only enclose what is being quoted, and not more than what is being quoted.)

The preceding and the present paragraph compactly illustrate the typographical devices that are *very extensively* made use of in this book: italics, round brackets, square brackets. *Italics* are usually used for indicating *increased* informational prominence: "emphasis" (but italics are also used for highlighting other kinds of linguistic contrast). *Brackets* are usually used for indicating the *decreased* informational prominence of "side-information", *smaller* decrease: *round* brackets (but round brackets come in for other uses as well), *greater* decrease: s*quare* brackets (but square brackets are also used, say, for presenting insertions by the [present] author into quotations, or for presenting alternative expositions right beside those that were first and primarily offered, or for *explicitly* presenting qualifications – bringing them to mind – that are usually left *implicit* for brevity's sake, but are essential for the concept taken to be verbalized by this or that expression).

Frequently in this book, I take note of other thinkers, identifying them by their name (cf. the index of personal names at the end of this book), positioning myself vis-à-vis some view they put forward. Yet, though sometimes I mention the work containing the view I address, I never give a page-number and never bibliographically pinpoint any edition of the work: with editor(s), publisher, year and place of publication. Indeed, there is no bibliography in this book – and none is needed: Thanks to the Internet and AI, given the clues I provide, each addressed item of thought can easily be located in the works of the thinker who is re-

sponsible for it – together with any desired amount of bibliographical data on relevant secondary literature.

The philosophical topics that are treated in this book can be gathered from its table of contents. There is a large, sometimes huge, amount of older and newer scholarly literature on each of those topics (just consider *causation*, or *knowledge*). The aim of this book, however, precludes any extensive engagement with that literature; for the aim of this book – and here I move from its outward "peculiarities" to its philosophical substance – is to pose and try to answer some fundamental philosophical questions, *on my own* and *without distractions* (distractions being inevitably produced by interpreting and discussing, in detail, the opinions of others). In fact, this book is meant to breathe the same self-reliant philosophical spirit as, say, Descartes's *Meditations on First Philosophy*.

Moving forward with the bracing impetus of making "a new, unfettered beginning" [this is a *generic* quote!] does not mean that one is starting from scratch. Descartes was not starting from scratch, nor am I. I am philosophizing in an analytic way (in the way I learned long ago): presenting and examining concepts and principles, using, for this, the tools of logic (not excluding *formal* logic). I am following the analytic method; it is the method that informs and, indeed, *forms* this book. Qualifications need to be added: In contrast to most other analytic philosophers, I have a strong penchant for systematic theory-building and for metaphysics, and I do think that much can be learned from the history of philosophy; these aspects, too, are manifest in this book.

Unlike Descartes's *Meditations*, this book is not epistemologically optimistic. It is, in a sense, a work of skepticism. In fourteen different ways, this book is meant to demonstrate the following:

When we endeavor to answer certain fundamental philosophical questions *without* taking anything *implicitly* for granted, but, on the contrary, *explicitly* choosing the very concepts we are going to employ, the very intuitions and aims we are going to be guided by, there emerges a multiplicity of possible paths of thought that we might follow, and therewith a multiplicity of rationally underdetermined but *unavoidable* decisions: decisions that we must make *if* we are to give an answer to those fundamental questions. Hardly anything in that endeavor is perfectly clear; hardly anything we favor in that endeavor lacks an alternative that, in some respect or other, is, to our reason, *just as attractive*. Indeed, in that endeavor, rationality itself is rendered uncertain: Are there not several rationalities, all on equal terms?

What has been described in the foregoing paragraph is the labyrinth of thought. It quickly confronts us with *knots of thoughts*: multifarious clarities tangling into unclarities. But unlike other labyrinths, the labyrinth of thought has many exit-ways. No matter which of the fourteen fundamental philosophical question treated in this book entices us to enter the labyrinth, some reputable thinker – myself not excluded – will present, for the question concerned, a way out of the labyrinth. The trouble is that another reputable thinker will present, for the same question, a different way out of the labyrinth, a way leading to a different exit. At the exit of each exit-way, there is *not* manifest to us the prize we sought – *the truth* in a fundamental philosophical issue – and there does *not* come about the much-desired feeling of liberation, like the one felt when emerging from darkness into light; there are only *theories* there, at discrepant positions, each theory bearing a tantalizing subtitle: "I might be the truth, and I might be not."

Is philosophy, then, what Ambrose Bierce defined it to be under the entry "philosophy" in *The Devil's Dictionary*, "a route of many roads leading from nowhere to nothing"? – Now, starting from insecure premises is not a *starting from nowhere*, and coming to conclusions that are hardly less insecure than the premises one started out from is not a *coming to nothing*. Theories that are consistent in themselves but make incompatible assertions about the same matter are *not* nothing, least of all if they are clearly stated and if the matter they deal with is indeed a fundamental philosophical question (a question like the questions that serve as the titles of the fourteen chapters of this book). It is not forbidden – not irrational – to believe in one of those theories, *firmly* even (*trusting* it), *if* the accompanying epistemic attitude is the attitude which is appropriate here and truly philosophical: the attitude of being well acquainted with doubt, and of remaining true to the possibility of doubt even while keeping one's distance to doubt – *the* attitude that needs to be maintained if we are to be philosophers, no matter on which side the inevitable instigation to *dogmatism* (naturalistic scientism *not* excluded) may arise. Regarding philosophy's own proper field: regarding what is *fundamental* in *existence*, in *knowledge*, in *what ought to be*, hardly any assertion is true *unquestionably*.

Uwe Meixner October 2026

1 Must the actual world be *this* world?

Let "@" be an abbreviation of the definite description "the actual world", or fully explicitly: "the possible world which is actual". The condition of normalcy of this definite description is fulfilled: *there is exactly one possible world which is actual*, and therefore (by the logic of definite descriptions), *the actual [and possible] world* – i.e., @ – is, indeed, an actual possible world. (This may seem trivial, but it would not be true if the condition of normalcy for "the actual world" were not fulfilled: if more than one possible world were actual, or none – and if definite descriptions lacking a referent that fits their meaning are given some out-of-the-way referent, just to have them refer to *something*, as is required by classical logic.)

Let the singular term "w_0" *rigidly* designate the possible world that actually is the actual world, in other words: let it *rigidly* designate the possible world that is *this* world. Moreover, "possible world" will be abbreviated by "PW". Then, using well-known logical symbols and the syntax of first-order predicate logic, three principles that are quite indubitable – no matter what is their precise interpretation – can be expressed in the following way: (A) $@ = w_0$ ["The actual world is identical with w_0"; in view of what is said in the first paragraph of this chapter, "w_0 is an actual possible world" is an immediate consequence of (A)]; (B) $\exists y \Box(w_0 = y)$ ["There is something with which w_0 is necessarily identical"]; (C) $\Box PW(w_0)$ ["w_0 is necessarily a possible world"]. What is, however, the question here (and what is, howsoever it is decided, *not* indubitable) is this:

Is $\Box(@ = w_0)$ true, *or* is $\neg\Box(@ = w_0)$ true? ["$\neg$": "not"]

Because of (A), an equivalent formulation of this question is this:

Is $\Box(@ = w_0)$ true, *or* is $@ = w_0 \wedge \neg\Box(@ = w_0)$ true? ["$\wedge$": "and"]

In other words:

Is the actual word necessarily w_0, or is the actual world w_0, but not necessarily?

Or to put it differently again:

Is it necessary that the actual world is w_0, or is it *contingent*?

If it were necessary that the actual world is w_0, then this would establish an especially simple and strong form of *determinism* – *how strong* depends on the nature of the necessity involved; it would be strongest if the necessity involved is *strictest* necessity: if w_0 is, say, *in virtue of [total] essence* ["logically", one says] the actual world. Correspondingly, if it were *contingent* that the actual world is w_0, then this would establish a form of *indeterminism*,

which, no matter what is the stringency of the necessity involved (this necessity now being *negated*), would always leave room for this intriguing question: "*Why* is w_0 the actual world *although* it is not necessary that it is?"

There is a theory of (alethic, ontic) modality which, if true, makes $\neg\Box(@ = w_0)$ come out true, and which thus, in view of (A), vindicates the "contingency of the world" (that is, the truth of $@ = w_0 \wedge \neg\Box(@ = w_0)$). This theory may be called "the Indexical Theory of World-Actuality" – in short: the ITWA; it encompasses, the following postulates [in addition to (A), (B), and (C)], all of them (prima facie) plausible:

(I) There are possible worlds other than the possible world w_0.
(II) It is *necessary* that σ [i.e., $\Box\sigma$] if, and only if, at every possible world it is true that σ. ("σ" can be replaced by any [English] sentence that is bivalent – i.e., either true or false – at least in the context of utterance.)
(III) At every possible world *w* it is true that the actual world is *w*.
(IV) At every possible world *w*, for all *x*, *y*, and *z*: if it is true at *w* that *x* = *y*, and true at *w* that *x* = *z*, then it is true at *w* that *y* = *z*.
(V) There are no possible worlds *w* and *w´´* such that $w \neq w''$ and at some possible world it is true that $w = w''$.

From these postulates – hence from the ITWA – $\neg\Box(@ = w_0)$ can be logically deduced:

[Deduction 1.1]
(1) Assume for *reductio (ad absurdum)*: $\Box(@ = w_0)$.
(2) Therefore with (II): At every possible world it is true that $@ = w_0$.
(3) According to (I), w_0 is a possible world, and there is a possible world *w´* different from w_0 [$w' \neq w_0$].
(4) Therefore with (III): At *w´* it is true that $@ = w'$.
(5) As a logical consequence of (3) and (2) we have: At *w´* it is true that $@ = w_0$.
(6) As a logical consequence of (IV) and (3), (4), and (5), we have: At *w´* it is true that $w' = w_0$.
(7) However, as a logical consequence of (V) and (3) we have: At *w´* it is *not* true that $w' = w_0$.

Since, in this logical deduction, step (7) contradicts step (6), it follows that the negation of the deduction's assumption for *reductio* follows logically from the postulates (I) – (V), hence from the ITWA. In other words, $\neg\Box(@ = w_0)$ is a theorem of the ITWA. In fact, for obtaining this result, already one of the two logical halves of (II) – namely, "It is necessary that σ *only if* at every possible world it is true that σ" – is sufficient (as can be gathered by looking at the deductive transition from (1) to (2)).

Which postulate in (I) – (V) is *centrally constitutive* for the ITWA? Clearly, it is (III). The other four postulates [and (A), (B), and (C), and their logical consequences] are, so to speak, *subservient* to the ITWA; they are not specifically "indexical". However, some of the "service" they render to the ITWA is, indeed, such that the ITWA cannot do without it: the indexicality of world-actuality emerges from the ITWA *only if* (I) is a logical part of it. Note that by assuming, instead of postulate (I), the postulate *Anti*-(I): "There is no possible world other than the possible world w_0" (or in other words: "w_0 is the only possible world"), leaving everything else as it is, one can logically deduce $\Box(@ = w_0)$, making $\Box(@ = w_0)$ a theorem of an especially radical *anti*-indexical theory of world-actuality, *even while* still maintaining (III), the *centrally constitutive* postulate of the ITWA:

[Deduction 1.2]
(1´) With *Anti*-(I) and (III): At possible world w_0 it is true that $@ = w_0$.
(2´) With *Anti*-(I) trivially: At every possible world *w* different from w_0 it is true that $@ = w_0$.
(3´) As a logical consequence of (1´) and (2´) we have: At every possible world it is true that $@ = w_0$.
(4´) As a logical consequence of (3´) and (II) we have: It is necessary that $@ = w_0$, i.e., $\Box(@ = w_0)$.

Now, there is good reason to be dissatisfied both with the ITWA *and* with its radical antagonist that differs from it only by having *Anti*-(I) instead of (I), which antagonist is the Trivializing Theory of World-Actuality, in short: the TTWA.

Concerning the ITWA: While $\neg\Box(@ = w_0)$ is a theorem of the ITWA, so that – in view of (A) – the "contingency of the world" is established by the ITWA, it appears that this vindication of its contingency (i.e., the contingency of its actuality) is unacceptably *facile*. When it turns out to be contingent that the actual world is *this* world, is w_0, it seems right and proper

(for us philosophers and for every human being who enjoys philosophical moments) to have a deep feeling of (philosophical, metaphysical) wonder about the actuality of w_0; it seems that the question that ought to come to mind immediately here is this: "But *why* is the actual world *this* world? After all, it does not need to be *this* world." The ITWA, however, leaves no room for this feeling of wonder and for a fittingly profound *why*-question connected to it. According to the ITWA, that feeling can only be delusional; for, according to the ITWA, the "contingency of the world" is nothing to wonder at or about; it is simply a matter of (logical) course.

Concerning the TTWA: While $\Box(@ = w_0)$ is a theorem of the TTWA, so that the "necessity of the world" is established by the TTWA, it appears that this vindication of world-necessity is unacceptably *facile*. Even under the assumption that there is just one possible world, w_0, as proposed by *Anti*-(I), it still seems that the TTWA does not establish that it is *in the truly relevant sense* necessary that w_0 is actual. (Could not the sole possible world w_0 be non-actual in spite of its being – according to the TTWA – the sole possible world?) And if it does not establish in the truly relevant sense that it is necessary that w_0 is actual, then, of course, it does not establish in the truly relevant sense that it is necessary that $@ = w_0$.

One can put the just-described dissatisfaction with the ITWA and the TTWA also in the following unified way: The ITWA establishes $\neg\Box(@ = w_0)$, interpreting "$\Box$" along the lines of (II) [making use, in Deduction 1.1, only of (IIb): "It is necessary that σ *only if* at every possible world it is true that σ"]; however, it does not establish $\neg\Box^*(@ = w_0)$, where "$\Box^*$" expresses the *intuitively relevant* concept of necessity: necessity*, such that $@ = w_0 \wedge \neg\Box^*(@ = w_0)$ expresses the *intuitively relevant "*contingency of the world" (the question *truly in point* being whether $@ = w_0 \wedge \neg\Box^*(@ = w_0)$ is true, *not* whether $@ = w_0 \wedge \neg\Box(@ = w_0)$ is true). The TTWA, in contrast, establishes $\Box(@ = w_0)$, once again interpreting "$\Box$" along the lines of (II) [but making use, in Deduction 1.2, only of (IIa): "It is necessary that σ *if* at every possible world it is true that σ"]; however, it does not establish $\Box^*(@ = w_0)$, where "$\Box^*$" again expresses the *intuitively relevant* concept of necessity: necessity*, such that $\Box^*(@ = w_0)$ expresses the *intuitively relevant "*necessity of the world" (the question *truly in point* being whether $\Box^*(@ = w_0)$ is true, *not* whether $\Box(@ = w_0)$ is true).

The unsatisfactory nature both of the ITWA and the TTWA vis-à-vis the question "world-contingency or world-necessity?" is highlighted by the following fact: From (II), (III), (IV), (V)

and the truth that w_0 is a possible world – let this truth be designated by "(F)" [the reason for this nomenclature will become apparent in note **14**, near the end of Chapter 2; (F) is a logical consequence of (C), and also of (I), and also of *Anti*-(I), but neither (C) nor (I) nor *Anti*-(I) will be used in the upcoming deduction] – the following can be logically deduced:

$\Box(@ = w_0)$ if, and only if, there is no possible world other than the possible world w_0.

[Deduction 1.3]

(1´´) Assume: There is no possible world other than the possible world w_0.

(2´´) With (1´´) and (III): At possible world w_0 it is true that $@ = w_0$.

(3´´) With (1´´) trivially: At every possible world *w* different from w_0 it is true that $@ = w_0$.

(4´´) As a logical consequence of (2´´) and (3´´) we have: At every possible world it is true that $@ = w_0$.

(5´´) With (4´´) and (II) [specifically, (IIa)]: It is necessary that $@ = w_0$, i.e., $\Box(@ = w_0)$.

(6´´) Assume: $\Box(@ = w_0)$.

(7´´) With (6´´) and (II) [specifically, (IIb)]: At every possible world it is true that $@ = w_0$.

(8´´) With (III): At every possible world *w* it is true that $@ = w$.

(9´´) As a logical consequence of (8´´), (7´´), and (IV) we have: At every possible world *w* it is true that $w = w_0$ [that is: For all possible worlds *w*: it is true at *w* that $w = w_0$, and the following is easily seen to be a *corollary of* (9´´): For all possible worlds *w*: at some possible world it is true that $w = w_0$].

(10´´) A logically equivalent formulation of (V) is this: For all possible worlds *w* and *w´*: if at some possible world it is true that $w = w´$, then $w = w´$.

(11´´) As a logical consequence of (10´´) and (F) we have: For all possible worlds *w*: if at some possible world it is true that $w = w_0$, then $w = w_0$.

(12´´) As a logical consequence of (9´´) [more nearly: of the above-indicated *corollary of* (9´´)] and (11´´) we have: For all possible worlds *w*: $w = w_0$ [in other words: Every possible world is identical with w_0].

(13´´) As a logical consequence of (12´´) and (F) we have: There is no possible world other than the possible world w_0.

Deduction 1.3, in the part reaching from (1´´) to (5´´), establishes:

If there is no possible world other than the possible world w_0, then $\Box(@ = w_0)$.

Deduction 1.3, in the part reaching from (6´´) to (13´´), also establishes the converse, which is:

If $\Box(@ = w_0)$, then there is no possible world other than the possible world w_0.

Together, both parts of Deduction 1.3 deliver what was asserted to be deducible from (II), (III), (IV), (V), and (F). The first part of Deduction 1.3 makes use only of (II) and (III); the second part of Deduction 1.3 makes use of (II), (III), (IV), (V), and (F).

It has now become clear that principles the ITWA and the TTWA have in common – i.e., (II) and (III), and also (IV) and (V) [(V) being a trivial consequence of *Anti*-(I) in the TTWA] – *together* with a presupposition both theories share – i.e., (F), a consequence of (C) [which the ITWA and the TTWA share along with (A) and (B)] – make the question whether $\Box(@ = w_0)$ is true, or on the contrary $\neg\Box(@ = w_0)$, simply a question of whether or not there is no possible world other than the possible world w_0.

1. What, precisely, is asserted by "There is no possible world other than the possible world w_0"? In fact, two different propositions may be asserted by it, and they are not even logically equivalent: (a) $\neg\exists y(\mathrm{PW}(y) \wedge \mathrm{PW}(w_0) \wedge y \neq w_0)$; (b) $\mathrm{PW}(w_0) \wedge \neg\exists y(\mathrm{PW}(y) \wedge y \neq w_0)$. Only (b) fits the interpretation of "There is no possible world other than the possible world w_0" which is being used here: the interpretation which has that sentence assert the same proposition as "w_0 is the only possible world". Note that (a) and (b), though they are not logically equivalent [(a) follows logically from (b), *but not vice versa*], are nevertheless *demonstrably equivalent* (because of (F), which is as indubitable as (C) is).

The result of Deduction 1.3 – the biconditional "$\Box(@ = w_0)$ if, and only if, there is no possible world other than the possible world w_0" – is incompatible with the following "narrative":

The intuitive picture

There is a plurality of possible worlds. All possible worlds are in the same way necessarily possible worlds as all natural numbers are necessarily natural numbers. Precisely one possible world is actual: namely, the possible world which is named just as rigidly by "w_0" as the number *One* is rigidly named by "1". The here-intended *singular actuality-as-a-possible-world* of w_0 is not something which is relative to possible worlds, neither *implicitly*, as *being a possible world which is singularly actual* is if it is *world-indexically* understood, nor *explicitly*, as is, obviously, *being a possible world which is singularly actual at a possible world w* (with which we have: w_0 is a singularly actual possible world at w_0, while for every other possible world *w´*, *w´* is a singularly actual possible world at *w´*; in other words: w_0 is the only possible world which is actual at w_0, while for every other possible world *w´, w´* is the only possible world which is actual at *w´*). Rather, the here-intended singular actuality-as-a-possible-world of w_0 is *world-absolute* (*not* world-relative). The statement "@ = w_0" ["the possible world which is actual is identical with w_0", "the actual world is identical with w_0"] is *world-absolutely* true – true at every possible world, and not merely true at w_0 while not true at some other possible world. *Nevertheless*, one can still ask meaningfully: Is it *necessary* that @ = w_0, or is it *not necessary* that @ = w_0? This question is not already decided by what has been said so far in description of *the intuitive picture*. In particular, it is not already decided by there being other possible worlds than the possible world w_0.

The intuitive picture eliminates the TTWA by the very first sentence of its description. The ITWA, however, can, indeed, be maintained *in a modified form* alongside *the intuitive picture*, complementing it – *provided*, (a), one replaces "necessary" (or "❐") *in the original* ITWA [in (I) – (V) and in all analytical consequences of these principles] with "world-absolute"; *and provided*, (b), one replaces *in the original* ITWA the term "actual", if used without explicit world-relativization [i.e., if *not* used as it is used in "is actual at world *w*"; note that "For every possible world *w*: *w*, and no other possible world, is actual at *w*" is an analytical equivalent of (III)], with "indexically actual" (in short: "actual^{Ind}"). In the light of *the intuitive picture*, what is wrong with the original, the *naïve* ITWA is this: The *naïve* ITWA, by the way it is formulated, is implicitly committed to denying that "necessary" may have a meaning, relevant for the question at issue [which is: whether ❐(@ = w_0) is true, or ¬❐(@ = w_0) is true], that is *other* than the meaning of "world-absolute"; and the *naïve* ITWA, by the way it is formulated, is implicitly committed to denying that "actual", if used without explicit world-relativization,

may have a meaning, relevant for the question at issue, that is *other* than the meaning of "indexically actual". Both denials are wrong from the point of view of *the intuitive picture*.

For the sake of obtaining a view which is as clear as possible, consider the following table of comparison between the ITWA in its original, "brash" formulation, and the ITWA in the just-indicated reformulation, in which it is perfectly compatible with *the intuitive picture*, complementing it, rounding it off.

The (original) ITWA:

(A) @ = w_0

(B) $\exists y \Box(w_0 = y)$

(C) $\Box PW(w_0)$

[(F) $PW(w_0)$; (F) is logically included in (C); it also follows from (I)]

(I) There are possible worlds other than the possible world w_0.

(II) It is *necessary* that σ [i.e., $\Box\sigma$] if, and only if, at every possible world it is true that σ.

(III) At every possible world *w* it is true that the actual world is *w*.

(IV) At every possible world *w*, for all *x*, *y*, and *z*: if it is true at *w* that *x* = *y*, and true at *w* that *x* = *z*, then it is true at *w* that *y* = *z*.

(V) There are no possible worlds *w* and *w´* such that $w \neq w'$ and at some possible world it is true that *w* = *w´*.

Two of the theorems of this theory: (a) $\Box(@ = w_0)$ if, and only if, there is no possible world other than the possible world w_0; (b) $\neg\Box(@ = w_0)$.

The reformulated and reformed ITWA:

"*Abs*" is short for "world-absolute" [*Abs* functions syntactically – and in all matters of S5-modal logic – just like $\Box$: "necessary"]; "$@^{Ind}$" is short for "the actual^{Ind} world" ["the possible world which is actual^{Ind}"].

(A´) $@^{Ind} = w_0$

(B´) $\exists y Abs(w_0 = y)$

(C´) $Abs PW(w_0)$

[(F´) $PW(w_0)$; (F´) is logically included in (C´); it also follows from (I´)]

(I´) There are possible worlds other than the possible world w_0.

(II´) It is *world-absolute* that σ[i.e., *Abs*σ] if, and only if, at every possible world it is true that σ.

(III´) At every possible world *w* it is true that the actual^{Ind} world is *w*.

(IV´) At every possible world *w*, for all *x*, *y*, and *z*: if it is true at *w* that *x* = *y*, and true at *w* that *x* = *z*, then it is true at *w* that *y* = *z*.

(V´) There are no possible worlds *w* and *w´* such that *w* ≠ *w´* and at some possible world it is true that *w* = *w´*.

Two of the theorems of this other theory: (a´) *Abs*(@^{Ind} = w_0) if, and only if, there is no possible world other than the possible world w_0; (b´) ¬*Abs*(@^{Ind} = w_0). [Note that (a´) is provable without making use of (I´) – completely analogous to the way in which "❒(@ = w_0) if, and only if, there is no possible world other than the possible world w_0" is provable in the original ITWA without making use of (I).]

Moreover, *Abs*(@ = w_0) [in which "@" – "the actual world" – is used, and *not* "@^{Ind}" – "the indexically actual world"!] is a theorem that becomes, via (II´), provable alongside ¬*Abs*(@^{Ind} = w_0) if *the reformulated and reformed* ITWA is united with [what is pronounced true according to] *the intuitive picture*. No contradiction is produced by this step.

Nobody, of course, can be rationally forced to abandon the ITWA as originally formulated and understood – or even the TTWA, if somebody should happen to believe in it – and accept *the intuitive picture*; yet, *the intuitive picture* is certainly more *natural* to our understanding than the ITWA as originally formulated and understood. If one accepts *the intuitive picture united with the reformulated and reformed* ITWA – in short: *united with the* ITWA$_{RR}$ –, then it is perfectly clear that the ITWA$_{RR}$-demonstrable truth of ¬*Abs*(@^{Ind} = w_0) does not decide whether or not ¬❒(@ = w_0) is true [if ¬❒(@ = w_0) were not true, then ❒(@ = w_0) would be true, since either ¬❒(@ = w_0) or ❒(@ = w_0) must be true!] – where "*Abs*", "@^{Ind}", "❒", and "@" have the meanings that fit *the intuitive picture in union with the* ITWA$_{RR}$. And it is, then, perfectly clear, too, that the truth of *Abs*(@ = w_0), emerging as provable – via (II´) – from *the intuitive picture united with the* ITWA$_{RR}$, does not decide whether or not ❒(@ = w_0) is true [if ❒(@ = w_0) were not true, ¬❒(@ = w_0) would be true, since either ❒(@ = w_0) or ¬❒(@ = w_0) must be true!] – where "*Abs*", "❒", and "@" have the meanings that fit *the intuitive picture in union with the* ITWA$_{RR}$.

2. According to the notions of necessity and actuality employed in *the intuitive picture united with the* ITWA$_{RR}$, $\neg$*Abs*(@^{Ind} = w_0) does not analytically [broadly logically] entail $\neg\Box$(@ = w_0). Moreover, according to the notions of necessity and actuality employed in *the intuitive picture united with the* ITWA$_{RR}$, *Abs*(@ = w_0) does not analytically entail $\Box$(@ = w_0). *However*, according to the notions of necessity and actuality employed in *the reformulated but unreformed* ITWA, $\neg$*Abs*(@^{Ind} = w_0) – as well as $\neg$*Abs*(@ = w_0) – analytically entails $\neg\Box$(@ = w_0), and *Abs*(@^{Ind} = w_0) – as well as *Abs*(@ = w_0) – analytically entails $\Box$(@ = w_0); for according to *the reformulated but unreformed* ITWA, "$\Box$" is a synonym of "*Abs*", and "@" a synonym of "@^{Ind}".

But now, returning to the notions of necessity and actuality employed in *the intuitive picture united with the reformulated and reformed* ITWA – i.e., *united with the* ITWA$_{RR}$ –, is it also the case that *Abs*(@^{Ind} = w_0) does not analytically entail $\Box$(@ = w_0)? And, according to the notions of necessity and actuality employed in *the intuitive picture united with the* ITWA$_{RR}$, is it also the case that $\neg$*Abs*(@ = w_0) does not analytically entail $\neg\Box$(@ = w_0)? – These two questions can seem otiose from the point of view of *the intuitive picture united with the* ITWA$_{RR}$, because from the point of view of that system there are *obvious answers in the negative* to two similar but, no doubt, different questions: Since both $\neg$*Abs*(@^{Ind} = w_0) and *Abs*(@ = w_0) are provable in *the intuitive picture united with the* ITWA$_{RR}$, both *Abs*(@^{Ind} = w_0) $\supset$ $\Box$(@ = w_0) and $\neg$*Abs*(@ = w_0) $\supset$ $\neg\Box$(@ = w_0) are (trivially) *provable in that system* ("$\supset$" standing for the so-called *material implication*, which is the logical concept that underlies every classical notion of entailment). But omit (I´) from that system, just provisionally, and suppose: *Abs*(@^{Ind} = w_0); hence (it is *non*-trivially logically deducible in that reduced system, as we have seen): there is no possible world other than the possible world w_0; yet, intuitively, nothing forbids that w_0, the only possible world, is not actual, and that, therefore, "@" – this abbreviation of the definite description "the actual world", or fully explicitly: "the possible world which is actual" – designates the number 0 (for example), in view of its designating nothing which is in accordance with its meaning, and that, therefore, it is not true that @ = w_0, and therefore not true that $\Box$(@ = w_0). Thus (considered *thus*: along the lines of thought just presented), *Abs*(@^{Ind} = w_0) does indeed *not* analytically entail $\Box$(@ = w_0).

In contrast, a case can be made for $\neg$*Abs*(@ = w_0) analytically entailing $\neg\Box$(@ = w_0). Not allowing us to be confused by the fact that *Abs*(@ = w_0) is provable – logically deducible (from basic principles) – in *the intuitive picture united with the* ITWA$_{RR}$, *suppose* $\neg$*Abs*(@ = w_0) analytically entails *Abs*(@ $\neq$ w_0), which, in turn, analytically entails @ $\neq$ w_0, which, in turn, analytically entails $\neg\Box$(@ = w_0). No step in this deductive sequence is implausible; not even the initial assumption – *the supposition* – is implausible (considering that "@" – in contrast to "@^{Ind}" – is *not* an indexical term in *the intuitive picture united with the* ITWA$_{RR}$).

If one gives credit to *the intuitive picture*, then, contrary to what is suggested by standard modal theory, "necessary" ($\Box$) is not a synonym of "world-absolute" (*Abs*) [if it were a synonym, this would make (II) and (II´) assert the very same logical law], in other words: *necessity* is not the same as *truth-in-every-possible-world*. Moreover, if one gives credit to *the intuitive*

picture, then, contrary to what is suggested by standard modal theory, "actual", if used without explicit world-relativization, is not a synonym of "actual^{Ind}"; in other words, *actuality* is not the same as *(world-)indexical actuality*. However, the trouble with *the intuitive picture* is that it is a *picture*, not a full-blown theory: While conforming to our intuitions and being natural to our understanding, *the intuitive picture* uses notions of necessity and actuality that it does not at all explain – in very noticeable contrast to the original (*the unreformulated and unreformed*) ITWA: see (II) and (III).

It is unclear how *necessity* and *actuality* as invoked in *the intuitive picture* might be sufficiently explicated. Likely enough, they must be accepted as primitive if *the intuitive picture* is accepted as true. What is certain is that the conceptual resources of standard modal theory do not suffice to give a satisfactory answer to the question "world-necessity or world-contingency?" (this question meaning what it has been explained to mean) – a question forcefully posed by *the intuitive picture*. A satisfactory answer must, first of all, do justice to the *profundity* of the question.

Note that S5-modal first-order predicate logic does not suggest that the question "world-necessity or world-contingency?" is profound; but neither does it suggest that it is *not* profound. In that logic, the following two inferences are demonstrably logically valid:

(i) $@ = w_0, \exists y\Box(w_0 = y), \exists y\Box(@ = y) \rightarrow \Box(@ = w_0)$

(ii) $\exists y\Box(w_0 = y), \neg\exists y\Box(@ = y) \rightarrow \neg\Box(@ = w_0)$

(ii) is a logical transformation of the logical law $\exists y\Box(w_0 = y), \Box(@ = w_0) \rightarrow \exists y\Box(@ = y)$. And (i) can be deduced from well-established logical laws as follows:

[Deduction 1.4]

(1´´´) $\Box(c = b), \Box(w_0 = b), \Box(@ = c) \rightarrow \Box(@ = w_0)$ [a logical law]

(2´´´) $@ = w_0 \rightarrow \Diamond(@ = w_0)$ [another logical law]

(3´´´) $\Diamond(@ = w_0), \Box(w_0 = b), \Box(@ = c) \rightarrow \Diamond(c = b)$ [another logical law]

(4´´´) $@ = w_0, \Box(w_0 = b), \Box(@ = c) \rightarrow \Diamond(c = b)$ [3´´´, 2´´´; by *logical cut*]

(5´´´) $\Diamond(c = b) \rightarrow \Box(c = b)$ [a logical law for the *logically rigid* designators "b" and "c"]

(6´´´) $@ = w_0, \Box(w_0 = b), \Box(@ = c) \rightarrow \Box(c = b)$ [4´´´, 5´´´; by logical cut]

(7´´´) @ = w_0, ❐(w_0 = b), ❐(@ = c) → ❐(@ = w_0) [6´´´, 1´´´; by logical cut]

(8´´´) @ = w_0, ∃*y*❐(w_0 = *y*), ∃*y*❐(@ = *y*) → ❐(@ = w_0) [7´´´; by *existential generalization in the antecedent*, which is admissible for *logically rigid* designators, "b" and "c" being such designators]

Thus, since the premises @ = w_0 and ∃*y*❐(w_0 = y) are taken for granted (not only in the ITWA but also) *in the intuitive picture* [in addition to $@^{Ind}$ = w_0 and ∃*yAbs*(w_0 = *y*) being taken for granted in *the reformulated and reformed* ITWA: see (A´) and (B´)], all that remains to be decided (cognitively) in *the intuitive picture united with the* $ITWA_{RR}$, in order to obtain an answer to the question of "world-necessity or world-contingency?", is the question whether ∃*y*❐(@ = *y*) is true or, on the contrary, ¬∃*y*❐(@ = *y*). That may seem easy to decide; but, since one refrains from *the unreformulated and unreformed*, the original ITWA (and, from the point of view of *intuition*, one *is* doing well to refrain from it), it is not easy to decide. In fact, it is perfectly unknown according to *the intuitive picture united with the* $ITWA_{RR}$, whether ∃*y*❐(@ = *y*) is true or, on the contrary, ¬∃*y*❐(@ = *y*) – just as it is perfectly unknown whether ❐(@ = w_0) is true or, on the contrary, ¬❐(@ = w_0). It may seem that we have a sufficient understanding at least of *logical necessity* safely to conclude that ¬❐(@ = w_0) and ¬∃*y*❐(@ = *y*) are true, where "❐" is standing for *logical necessity*. But do we really have such an understanding? The very *easiness* of coming to the conclusion in question should give us pause: it's an *unseeing*, a *blind* easiness, not doing justice to the profundity of the issue.

3. On the other hand, if *the reformulated and reformed* ITWA is true (which is a very plausible assumption, one might even say *that it is known to be true*), then not only ¬*Abs*($@^{Ind}$ = w_0) but also ¬∃*yAbs*($@^{Ind}$ = *y*) is true. This is already clear for ¬*Abs*($@^{Ind}$ = w_0), since ¬*Abs*($@^{Ind}$ = w_0) is logically deducible in that theory: *the reformulated and reformed* ITWA: Replace "❐" with "*Abs*" and "@" with "$@^{Ind}$" everywhere in Deduction 1.1. and use (I´) – (V´) instead of (I) – (V). Concerning ¬∃*yAbs*($@^{Ind}$ = *y*), suppose for *reductio* in the $ITWA_{RR}$: ∃*yAbs*($@^{Ind}$ = *y*); hence [S5-logically]: ∃*y*($@^{Ind}$ = *y* ∧ *Abs*($@^{Ind}$ = *y*)), and by (A´) and (I´): ∃*y*($@^{Ind}$ = *y* ∧ $@^{Ind}$ = w_0 ∧ PW(w_0) ∧ *Abs*($@^{Ind}$ = *y*)), hence: ∃*y*(PW(*y*) ∧ *Abs*($@^{Ind}$ = *y*)), hence by (II´) [σ may also be a so-called *open sentence*: it may contain a free variable]: ∃*y*(PW(*y*) ∧ at every possible world it is true that $@^{Ind}$ = *y*). Now, according to (I´), there is a possible world *w* that is *not identical* with the possible world w_0, and according to (III´), it is true at *w* that $@^{Ind}$ = *w*, and true at w_0 that $@^{Ind}$ = w_0. However, by what has already been deduced, we also have: ∃*y*(PW(*y*) ∧ it is true at *w* that $@^{Ind}$ = *y* ∧ it is true at w_0 that $@^{Ind}$ = *y*). Therefore by (IV´): ∃*y*(PW(*y*) ∧ it is true at *w* that *w* = *y* ∧ it is

true at w_0 that $w_0 = y$, and therefore by (V´) [w, w_0, and y being possible worlds, as already deduced]: $w = y$ and $w_0 = y$, hence: $w = w_0$ – *contradicting* what has already been deduced (namely, $w \neq w_0$).

However, as has been noted in before, there is no concluding $\neg\Box(@ = w_0)$, from the ITWA$_{RR}$-theorem $\neg Abs(@^{Ind} = w_0)$; and there is also no concluding of $\neg\exists y\Box(@ = y)$ from the ITWA$_{RR}$-theorem $\neg\exists y Abs(@^{Ind} = y)$.

A question arises regarding so-called *rigid designators*: It was said (in this chapter) that "w_0" is a rigid designator like "1"; but does that mean that $\exists y\Box(w_0 = y)$ and $\exists y\Box(1 = y)$ are true, or does it mean that $\exists y Abs(w_0 = y)$ and $\exists y Abs(1 = y)$ are true? – It means, first of all, that neither "w_0" nor "1" are world-indexical singular terms: singular terms that are, regarding their reference (or "extension"), *implicitly* relative to possible worlds. Now, if this is true of "w_0" and "1" (and it certainly is), then this can be expressed in the object-language by the true statements $\exists y Abs(w_0 = y)$ and $\exists y Abs(1 = y)$. The statements $\exists y\Box(w_0 = y)$ and $\exists y\Box(1 = y)$, in turn, do seem to be logically stronger statements than $\exists y Abs(w_0 = y)$ and $\exists y Abs(1 = y)$: it seems $\exists y\Box(w_0 = y)$ logically implies $\exists y Abs(w_0 = y)$, but not vice versa, and it seems $\exists y\Box(1 = y)$ logically implies $\exists y Abs(1 = y)$, but not vice versa. These logical relationships, if they really obtain, are perfectly in line with the last paragraph of note **2**, where a highly plausible argument is given for $\neg Abs(@ = w_0)$'s analytically entailing [logically implying] $\neg\Box(@ = w_0)$, or in other words: for $\Box(@ = w_0)$'s analytically entailing $Abs(@ = w_0)$, *whereas* at the same time (as also noted in note **2**), according to *the intuitive picture united with the* ITWA$_{RR}$, $Abs(@ = w_0)$ does not analytically entail [logically imply] $\Box(@ = w_0)$. Generalizing from these "phenomena", the following inference-schema seems logically valid: $\Box\sigma \rightarrow Abs\sigma$, while the converse of this schema is *not* logically valid [i.e., not logically valid for each permissible substitution for "σ"]. It can easily be checked that from admitting the logical validity of $\Box\sigma \rightarrow Abs\sigma$ there arises no conflict with the following diagram, which puts together central findings – central for the theme of this chapter – reached under the guidance of *the intuitive picture united with the* ITWA$_{RR}$:

$Abs(@^{Ind} = w_0)$ [**F**]	**n**$\rightarrow$	$\Box(@ = w_0)$	["**n**$\rightarrow$": "does not logically/analytically entail"]		
$\neg Abs(@^{Ind} = w_0)$ [**T**]	**n**$\rightarrow$	$\neg\Box(@ = w_0)$	["$\rightarrow$": "logically/analytically entails"]		
$Abs(@ = w_0)$ [**T**]	**n**$\rightarrow$	$\Box(@ = w_0)$			
$\neg Abs(@ = w_0)$ [**F**]	$\rightarrow$	$\neg\Box(@ = w_0)$	$\Box(@ = w_0)$	$\rightarrow$	Abs$(@ = w_0)$ [**T**]

Note, finally, that with the – rather plausible – inference-schema $\Box\sigma \rightarrow Abs\sigma$ available for use, one can conclude from the ITWA$_{RR}$-theorem $\neg Abs(@^{Ind} = w_0)$ this: $\neg\Box(@^{Ind} = w_0)$. But the truth of this statement is, of course, not the truth that radically inquiring philosophers are looking for; they are looking for the truth of $\neg\Box(@ = w_0)$, *or* for the truth of $\Box(@ = w_0)$, where "$\Box$" not only expresses the *necessity* that fits the profundity of the issue, but "@" ["the actual world", "the possible world which is actual"] is also *not* world-indexical (*unlike* "$@^{Ind}$") – fitting the profundity of the issue. With $\neg\Box(@ = w_0)$ and $\Box(@ = w_0)$ being taken "in the [relevant] profound sense", they are looking for *the certainty* of the truth of $\neg\Box(@ = w_0)$, *or* of $\Box(@ = w_0)$, ideally *the manifestness* of the truth of $\neg\Box(@ = w_0)$, *or* of $\Box(@ = w_0)$. But neither the truth of $\neg\Box(@ = w_0)$ "in the pro-

found sense" nor the truth of $\Box(@ = w_0)$ "in the profound sense" seems to be within our rational – purely rational – reach, so as to be rationally *manifest* to us, so as to be rationally at least *certain* to us.

2 What are the origins of actuality in actual beings?

There are entities that are merely possible – possible but not actual – *already if* there is a plurality of possible worlds; this can be gathered from the foregoing chapter. But the question whether *indeed* there are entities that are merely possible, perhaps even entities that are impossible, is *not here* the question. Consider, rather, all the entities that are actual (hence not merely possible). There certainly are such entities. What are the origins of their actuality? (What is, perhaps, *the sole origin* of the actuality of each of them?)

The actuality of an actual entity may be original to it, or it may be derived from the actuality of another entity (which may consist of several, or even many, actual entit*ies*). In any case, it is true of *every* actual entity that *either* its actuality is original to it, *or* it is derived from the actuality of another entity: It is a requirement of logic (in other words: of the conceptual framework employed) that the actuality of every actual entity be original to it *or* derived from the actuality of another entity, and the *exclusiveness* of the "*or*" (wherewith it is logically equivalent to "*either _, or _*") is due to this: if the actuality of an actual entity is original to it, then this logically excludes that it is derived from the actuality of another entity [and vice versa: if the actuality of an actual entity is derived from the actuality of another entity, then this logically excludes that it is original to it].

4. *Nota bene*: If the actuality of an actual entity is original to it, then this does not exclude that its actuality has *no origin*. That the actuality of an actual entity is original to it merely means that its actuality does not come to it from another actual entity. If it does not come to it from another actual entity, then it still may be the case that its actuality has an origin (namely, by being necessary to the entity *in itself*); but it also may be the case that its actuality has *no origin* (and thus is *without origin* original to the entity).

Could it be – is it consistently thinkable – that the actuality of *every* actual entity is derived from the actuality of another actual entity? – This is, indeed, consistently thinkable: Suppose there are infinitely many actual entities, forming a *downwards-infinite*, a *bottomless*, hierarchy of actuality-derivation, such that the actuality of entities on a higher level is invariably derived from the actuality of entities on lower levels (or on *a* lower level). The hierarchy of actuality-derivation may also be – it is consistently thinkable – *upwards-infinite*, or: *topless*; but this is not required by the mere idea that the actuality of every actual entity is derived from the actuality of another actual entity.

Though this idea is consistently thinkable, it is quite another question whether it is true. Moreover, the idea itself is very vague as long as the nature of actuality-derivation – i.e., that the actuality of a given actual entity *y* is derived from the actuality of *another* actual entity *x* – has not been explained. Two relational predicates come to mind in this connection: [a] *x*, being actual, makes *y* actual (there is no need to add "but not vice versa", since the relational concept expressed by [a] is already, qua expressed by [a], *asymmetric* – as actuality-*derivation* must logically be – and hence also *irreflexive*, as actuality-derivation must logically be); [b] *x*, being actual, necessitates the actuality of *y*, but not *vice versa* [where "*y*" is being put in the place of "*x*", and "*x*" in the place of "*y*"]. It is tempting to explicate [a] in terms of [b], such that [a] is merely a more vivid reformulation of [b]. However, the attractiveness of this step is greatly diminished as soon as one fully takes to mind one of the few indubitable insights of philosophy; it can be put in a slogan: *There is no other [true, objective] necessity than strictest necessity, and David Hume is its prophet*. And so-called *logical* necessity – that is, *broadly* logical necessity, analytical necessity, conceptual necessity – is certainly a species of *strictest necessity*, that is: of *the one and only* genus of [true, objective] necessity. *Some* may refrain from identifying logical necessity and strictest necessity, even from letting the former be a species of the latter, because they take logical necessity, in contrast to strictest necessity, to be in *all* of its instances indissolubly bound up with human language and with the human mind; *but I* strongly recommend thinking *non*-anthropocentrically of so-called "logical" necessity. When *using* "necessary" and "necessity" in this book for descriptive purposes, sometimes with a qualifier attached, I, as a rule, have in mind some species of logical necessity – which itself is a species of strictest necessity.

5. If *F* is a species of *H* and *H* a species of G, then, with logical necessity, every instance of *F* is an instance of *H*, and, with logical necessity, every instance of *H* is an instance of *G*. And therefore [it follows logically]: with logical necessity, also every instance of *F* is an instance of *G*. Thus, not only all the instances of logical necessity but also all the instances of every species of logical necessity are instances of *strictest necessity*.

My own reason for refraining from simply identifying logical necessity and strictest necessity – the former being already taken by me to be a species of the latter – is that there *might* be, outside of logical necessity, "dark necessity" – a [true, objective] necessity as strict as logical necessity, but a necessity whose existence (i.e., the existence of instances of it) is (*rationally*) unknowable (to *us*) and which is inscrutable in all of its alleged instances; it is clear why I call it "dark". Our forebears – but certainly not David Hume – firmly believed in the existence of this necessity, calling it "inexorable", and they had names for it: "fate", "destiny", "doom".

If, in the light of (the accepted truth of) the above slogan – the *Humean Confession* – one looks at so many instances where, *prima facie*, *x* – being actual – necessitates the actuality of *y*, but not vice versa, one is likely to be overcome with doubt; the supposed necessitation does not appear to be strict, let alone as strict as possible: *strictest*. Instead, one receives the impression that there is *no necessitation at all* in those instances. Thus, one had better *not* interpret [a] in terms of [b]; one had better take [b] – with "necessary" interpreted *in the strictest sense* [in the only true, objective sense of "necessary] – as a special case of [a], while [a] is taken to express the concept of *causation* in the widest, most comprehensive sense. Indeed, all *causation* is the making-actual of something by something actual; and all making actual of something by something actual is – *causation*; and the conceptual width of *causation* / *making actual* is to be large enough not only to have what is expressed by [b] as a special case, but also what is expressed by "*y* is a freely willed deliberate action of [actual] *x*".

6. Note that for a freely willed action to be *deliberate* it is sufficient (in this book) that it be "not blind": that it be guided by intellection (which need not involve ratiocination, and not *deliberation* as it is usually conceived of: as something that takes time). Note also that it is, strictly speaking, unnecessary to carry "*x* is actual" *explicitly* along with "*x* makes *y* actual", as in "*x*, being actual, makes *y* actual", or *explicitly* along with "*y* is a freely willed deliberate action of *x*", as in "*y* is a freely willed deliberate action of *x*, *x* being actual" – *just* as it is unnecessary to carry "*x* is actual" explicitly along with "*x* causes / is a cause of *y*" (and in this latter case, it is perfectly customary to leave "x is actual" *implied but not said*); for the shorter predicates require – *just* like "*x* causes / is a cause of *y*" – by their very meaning that *x* be actual. Yet, carrying "*x* is actual" explicitly along with "*x* makes *y* actual" makes it easier to see that [b] expresses a special case of [a].

The idea that the actuality of every actual entity is derived from the actuality of *another* actual entity has now become somewhat less vague, amounting now to the idea that every actual entity *is made actual – is caused* – by another [actual] entity. Unfortunately, the idea is not likely to become any clearer and more substantial (in adequate content) than this, notwithstanding the immense efforts that have been put into explicating *causation*. (If, in the idea in question, one replaces "is made actual" with "is given actuality", then this, of course, neither improves nor worsens the status quo. In addition to this chapter, the next two chapters are dedicated to the examination, exploration of causation / making actual.)

It is perfectly unknown whether or not the actuality of *every* actual entity is derived from the actuality of *another* actual entity (what is perfectly known, however, is that no actual entity *derives* its actuality from its own actuality, i.e., from itself: actuality-*derivation* is con-

ceptually *irreflexive*). True, it is a principle of rationality that *infinite regresses in causal explanation must be avoided*; but we do not know whether *reality* is in accordance with principles of rationality that are not purely logical [or in other words: whether principles of rationality that are not purely logical are in accordance with *reality*] – and the principle in question is *not* a purely logical one. The well-known fact that *another* principle of rationality – not a purely logical one, either – is directly opposed to the principle that infinite regresses in causal explanation must be avoided – namely, the principle that *for everything actual a sufficient cause of its actuality must be sought* – does certainly not help believing that reality is in accordance with principles of rationality that are not purely logical. It does seem likely that the actuality of *some* actual entities is derived from the actuality of other actual entities; the origin of the actuality of *those* actual entities would be, in each case, *another* actual entity. However, that this much *seems likely* does not mean that we *know* even this much.

Just as we do not know whether or not the actuality of every actual entity is derived from the actuality of another actual entity, so we do not know whether or not the actuality of *some* actual entity is *not derived* from the actuality of another actual entity; this is a consequence that follows because of the logical law expressed by "It is not known whether [or not] σ if, and only if, it is not known whether [or not] non-σ" ["σ" can be replaced by any bivalent – either true or false – English sentence; for example, by the sentence "the actuality of every actual entity is derived from the actuality of another actual entity"]. But suppose, just suppose, there are actual entities the actuality of which is not derived from the actuality of another entity – *primary-actual* entities – besides the *secondary-actual* entities (these latter, it has just been said, are likely to exist; together, the secondary-actual and the primary-actual entities are *the actual entities*).

Now, what is the origin of the actuality of a primary-actual entity? – There are only two possibilities (for thought): *Either* the entity is in itself necessarily actual, which means, presupposing the truth of the *Humean Confession*, that it is intrinsically-to-the-entity-itself *in the strictest sense necessary* that it is actual; *or* its actuality has no origin, which means that the entity is actual though there is no necessity of its actuality in the entity itself, and no derivation (in a broad sense "causal") of its actuality from the actuality of another actual entity. In other words, a primary-actual entity is either *fortuitously* actual – which is repugnant to reason because reason demands an origin of the entity's actuality – or the entity is *intrinsically-to-itself in the strictest sense necessarily* actual.

The juxtaposition of the two alternatives may seem too stark. It may seem that there is something (in fact, a lot) in between fortuitousness and necessity: necessity of percentage X, where *X* is greater than 0 and less than 100. However, even if the gradation of necessity – i.e., of *strictest* necessity – were to be conceptually allowed under the *Humean Confession* (we would then have a necessity which is, *in another sense of* "strict", the *strictest* strictest necessity and necessities which are, in that other sense, *less strict* strictest necessities), yet the fact remains: if the actuality of a primary-actual entity is less than 100 percent necessary (in other words, if it is not fully necessary), then its actuality is, so far, *without origin* – even if it were, say, 99.99 percent necessary; for, from its being less than 100 percent necessary, no matter how little less than 100 percent, it just does not follow that the entity in question (a primary-actual one) is actual. Thus, its actuality is in no way accounted for by being less than 100 percent necessary, and since its actuality is also not accounted for by being (causally) derived from the actuality of another actual entity, it follows that its actuality has *no origin* and that the entity in question is, indeed, fortuitously actual.

Which of the entities might be actual entities that are such that their actuality is intrinsically-to-them in the strictest sense necessary? If one accepts that *numbers* are actual entities, then it seems no audacious further step also to accept that their actuality is intrinsically-to-them in the strictest sense necessary. And if one accepts that *God* is an actual entity, then, again, it seems no audacious further step also to accept that His actuality is intrinsically-to-Him in the strictest sense necessary. But, of course, it is an utterly controversial question whether God is an actual entity, or whether numbers are actual entities.

Is an actual entity which is such that its actuality is (in the strictest sense) necessary, "automatically" a primary-actual entity, i.e., an entity whose actuality is not derived from the actuality of another entity? – No. Consider the possibility that *y* is necessarily made actual by a necessarily actual entity *x*.

7. This, by the way, is a correct characterization of the relationship between w_0 (*this* world, for Leibniz: "the best of all possible worlds") and God in Leibnizian metaphysics.

In such a scenario, *y* is not only actual but also *necessarily* actual. Yet the actuality of *y* is derived from the actuality of another entity: from the actuality of *x*, and thus *y* is not a primary-actual entity: it is an entity that is secondary-actual; the mere necessity of its being actual

does not suffice for its being a primary-actual entity; for its being a primary-actual entity, the necessity of its being actual needs to be *intrinsic to it*.

The mention of numbers and God provides the ideal occasion for introducing another dichotomous distinction among the actual entities, a distinction orthogonal to the dichotomous distinction between primary-actual and secondary-actual entities. It is the distinction between *causing and non-causing* actual entities. A causing actual entity is an actual entity that makes something (something *else*) actual; a non-causing actual entity is an actual entity that makes nothing actual. Numbers (and other "abstract" entities) are the traditional *prima facie* examples of *primary-actual non-causing* entities (but if it turned out that they are *not* actual entities, then, after all, they would not be examples of that category). God, in contrast, is the traditional *prima facie* example of a *primary-actual causing* entity: of an "uncaused cause", a "first cause" (but if it turned out that He is *not* an actual entity, then, after all, He would not be an example of that category). Intuitively, there are countless "indubitable" examples of *secondary-actual causing* entities. In contrast, examples of *secondary-actual non-causing* entities – so-called *epiphenomena* – seem hard to come by; perhaps *certain* (certainly not all) mental events are plausible examples of that (fourth and last) category.

From the point of view of logic, each one of the four origination-categories of actual entities – (C-I) *primary-actual causing*, (C-II) *primary-actual non-causing*, (C-III) *secondary-actual causing*, (C-IV) *secondary-actual non-causing* – can be empty; but it is logically impossible that *all four together* are empty *given* that there is at least one actual entity (and, like Descartes, I cannot help believing that there is at least one actual entity: *me*). Note that – with logical necessity – if (C-I) is non-empty, (C-III) or (C-IV) is non-empty (and therefore: if both (C-III) and (C-IV) are empty, (C-I) is empty, too). (C-III) is the most likely of the four categories to be non-empty – or so the appearances we associate with causing and being caused strongly suggest. But, for all we *know* (*really* know), (C-III) might yet be empty. Indeed, it is not logically excluded – though not likely, judging from the appearances we associate with causing and being caused – that all actual entities belong to category (C-II). If it were so, a strange – but not absurd – metaphysics would be true, namely, the metaphysics of *causal nihilism* (which is often – with some justification – associated with David Hume): "There are actual entities, but there is no causation", "There are actual entities, but the actuality of no actual entity is derived from the actuality of another actual entity", "There are actual entities, but no actual entity is made actual – is caused – by another actual entity".

8. Or to put it more briefly: "There are actual entities, but the actuality of no actual entity *is derivative*", "There are actual entities, but no actual entity *is made actual / is caused*". The abbreviation is possible because whosoever grasps the sense – the intended sense – of the just-mentioned two sentences *also* grasps that "… *is derivative*" means the same as "… is derived from the actuality of *another* actual entity [and this entity, note, may be a *group* of actual entit*ies*: a group that comprises actual entit*ies* from which *collectively* – from the *collective* actuality of which – the actuality of *y* is derived]"; and *also* grasps that "… *is made actual / is caused*" means the same as "… is made actual – is caused – by *another* actual entity [possibly a *group* that comprises actual entities by which, *collectively*, *y* is caused / made actual]".

In view of the given definition of causal nihilism *in the passive voice*, note that the definition might as well – logically equivalently – have been formulated *in the active voice*; for "no actual entity *is made actual / is caused*" is logically equivalent to "no actual entity *makes actual / causes*". (Suppose no actual entity *is caused*, but some actual entity *causes*; hence there is an actual entity that is caused [made actual] by it, hence *some* actual entity *is caused* – in contradiction to the supposition. Suppose, for obtaining the converse, no actual entity *causes*, but some actual entity *is caused*; hence there is an actual entity [perhaps a group of actual entit*ies* working together] that causes it [makes it actual], hence *some* actual entity *causes* – in contradiction to the supposition.)

Under causal nihilism, some actual entities *may*, perhaps, be [in the strictest sense] necessarily actual intrinsically-to-themselves [i.e., may themselves be the origin of their actuality]; but, under causal nihilism, the actuality of *all the other* actual entities – not unlikely: the actuality of *all* actual entities (the just-mentioned exceptions are, after all, very uncertain) – is *fortuitous*: is *without origin*. Thus, with some justification, causal nihilism might also be called "tychism" (from the Greek word *tychē* for "accidental happening", "chance", "happenstance").

Which of the four origination-categories is the one that *I*, the author, belong to? It seems to me decidedly – no doubt, as an upshot of my total experience – that it is *not* (in the strictest sense) necessary intrinsically-to-me that I am an actual being (though, since the existence of "dark necessity" is not entirely ruled out, I may be mistaken). At the same time, it also seems decidedly to me that my actuality is *not* without origin. If these two views of mine are correct, I am not a primary-actual entity, hence belong neither to (C-I) nor to (C-II). Moreover, it seems to me decidedly – again as an upshot of my total experience – that I have made actual some items (while of other actual items, vastly more, it seems to me that I did not make them actual), and in some cases, I am glad of my (apparent) actual-making, in other cases, I am not. If this further view of mine is correct, I do not belong to (C-IV). Thus, if the

stated three views of mine about my origination are correct, I belong to (C-III). But *are* these views, all three of them, correct? Some philosophers tell me that natural science has *proven* that human persons do not make anything actual; other philosophers tell me that only God can make an item actual. If the former philosophers or the latter are correct (and perhaps they are *both* correct!), then I do not belong to (C-III) after all, but to (C-IV) – *provided* my other two views about my origination, i.e., the first and the second view, are correct (they, at least, are good candidates for general acceptance and not prone to being controversial).

Lifting my mental eyes from *me*, who is in a certain sense (not the ontological sense) the center of *the World* (for me), to *the World* itself, the question arises: Which of the four origination-categories is the one that *the World* belongs to? *The World* is the actual world [i.e., the *one* possible world that is actual], which world is identical to *this* world, to w_0 – to a rather special actual entity (see the foregoing chapter; note that "the world" *in its normal use as a singular term*, and *only* in this normal use, is a synonym of "the World"). Thus, for many purposes (*not* for all purposes), discussion of the World is discussion of w_0, in its role of being the actual world. (For some purposes, however, discussion of the World is discussion of the actual world *whichever possible world it may turn out to be*.)

In addressing the question "Which of the four origination-categories is the one that w_0 [the World] belongs to?", the relationship between w_0 and all the other actual entities is the first thing that needs clarification. We have as logically necessary truths [and not only for w_0 but for every possible world *w*, though *here* the focus is on w_0]: (i*) If w_0 is actual, then every entity is actual that is actual at w_0; (ii*) if w_0 is actual, then every actual entity is actual at w_0. *Or in sum*: (iii*) If w_0 is actual, then an entity is actual if, and only if, it is actual at w_0.

9. It is also true with logical necessity: (iii´) If w_0 is actual^{Ind}, then an entity is actual^{Ind} if, and only if, it is actual at w_0. However, the actuality that is being talked about in this chapter is not indexical actuality (i.e., actuality^{Ind}), it is the non-indexical actuality distinguished in the foregoing chapter from indexical actuality. Concerning the monadic predicate "*x* is actual" in the sense of "*x* is actual^{Ind}", concerning [the typographically identical predicate] "*x* is actual" *with non-indexical meaning*, and concerning the dyadic predicate "*x* is actual at possible world *w*", see the foregoing chapter. Note that in a context which is ruled by the possible world *w* "*x* is actual^{Ind}" is an elliptical expression for "*x* is actual at *w*", while in a context which is ruled by the possible world *w´*, with $w' \neq w$, "*x* is actual^{Ind}" is an elliptical expression for "*x* is actual at *w´*".

Consider, then, the following definition:

(D1) w_0, being actual, makes *y* actual $=_{Def}$ w_0 is actual, $y \neq w_0$, and *y* is actual at w_0.

And it is a good occasion for pointing out another logically necessary truth: (iv*) For all *x*: *x* is actual at w_0 if, *and only if*, it is logically necessary that *x* is actual at w_0. [Just like (i*), (ii*), and (iii*), (iv*), too, is true with logical necessity of, indeed, *every* possible world *w*, and not only of w_0; *here*, however, the focus is on w_0.]

10. Does (D1) fulfill the two *formal* requirements for being a definition of "w_0, being actual, makes *y* actual" [or in other words: of "w_0 *causes / is a cause* of *y*"]? It does. *First*, according to (D1) [and logical principles], "w_0 is actual" and "*y* is actual" follows from "w_0, being actual, makes *y* actual" *as defined by* (D1): According to (D1), we obviously get "w_0 is actual" and "*y* is actual at w_0" from "w_0, being actual, makes *y* actual"; and from the just-mentioned two consequences of it we get by (i*): "*y* is actual". Thus, the *causation*-formal requirement *that only what is actual causes, and that what is caused is actual* is fulfilled by (D1). *Second*, "w_0, being actual, makes *y* actual" *as defined by* (D1) is an *asymmetric* (and therefore *irreflexive*) predicate [or precisely speaking: the monadic analog of such a predicate, since only dyadic predicates are *quite literally* asymmetric]: Assume (for *reductio*) that *y* is actual, $w_0 \neq y$, and that w_0 is actual at *y*, *along with* the assumption that w_0 is actual, $y \neq w_0$, and that *y* is actual at w_0 [which, according to D1, is the meaning of "w_0, being actual, makes *y* actual", in other words: "w_0 causes *y*"]. Since "… is actual at …" is meant to be logically equivalent to "… is actual at *possible world* …", it follows from the assumptions that both w_0 and *y* are possible worlds. Consequently, w_0 must be identical with *y*, because, at *possible world y*, of all possible worlds *only y* is actual, and because w_0 is a possible world that, according to assumptions, is actual at *y*. However, the identity of w_0 and *y*, just deduced, contradicts the assumptions (where we find "$w_0 \neq y$" and "$y \neq w_0$"). – Thus, also the *causation*-formal requirement *that what causes is not caused by what it causes* is fulfilled by (D1).

With (D1) in place, it can be shown that the actuality of every actual entity other than w_0 is derived from the actuality of w_0; in other words, that w_0, being actual, makes actual every other actual entity.

[Deduction 2.1]

(1) w_0 is actual [which is true, since "w_0" is taken to name the actual world]

(2) *y* is actual [assumption]

(3) $y \neq w_0$ [assumption]

(4) *y* is actual at w_0 [from (1), (2), and (ii*)]

(5) w_0, being actual, makes *y* actual [with (D1) from (1), (3), and (4)]

Given that (ii*) and "w_0 is actual" are true, and *given* we proceed on the basis of (D1), Deduction 2.1 shows that "For all *y*: if *y* is actual and $y \neq w_0$, then w_0, being actual, makes *y* actual" is true; in other words, it shows that w_0, being actual, makes actual every other actual entity.

What must here be *the question* is, of course, whether (D1) is an *adequate* – not only *formally* adequate – definition of "w_0, being actual, makes *y* actual". *Can* a possible world, at least if it is the actual world, as is w_0, *make something actual*, truly – in an adequate sense – *make something actual*, i.e., *cause it*? It can be legitimately doubted that it can; but, for the moment, let (D1) be accepted as an *adequate* (and not only formally adequate) definition of "w_0, being actual, makes *y* actual". Let it, therefore, be accepted, for the moment, *that* w_0, being actual, [truly] makes actual every other actual entity (as has just been deduced); *that*, in other words, the actuality of every actual entity other than w_0 is derived from the actuality of w_0; *that* the origin of the actuality of every actual entity other than w_0 is (the actuality of) w_0.

And what, then, is the origin of the actuality of w_0, *the World*? The actual world w_0 cannot make itself actual; for, its self-made actuality would violate the irreflexivity of the making-actual relation; and w_0 cannot be made actual by anything actual that is different from w_0; for, if something actual that is different from w_0 made w_0 actual, then this would violate the asymmetry of the making-actual relation, since it has already been determined (for the moment) that w_0, being actual, makes actual every *other* actual entity. Thus, w_0 is not made actual, whereas it makes actual other actual entities [for there certainly are actual entities other than w_0]; and thus, w_0 belongs to the first origination-category, (C-I): *primary-actual causing*, and it is a very prominent – indeed *the sole* – member of that category since it causes / makes actual *every other actual entity* [hence the actuality of every other actual entity is derived from the actuality of w_0; hence every actual entity different from w_0 is *not* primary-actual]: w_0 is *the* first cause, *the* uncaused cause.

It has now become manifest: Under the auspices of the definition (D1), the World, w_0, occupies a role that is traditionally – in a very familiar theological tradition – accorded to God. Already before reaching this consequence, (D1) did seem problematic (regarding adequacy of content); now, after having reached the consequence that w_0 is *the first cause*, *the uncaused cause*, (D1) may seem problematic even to the point of being perfectly unacceptable. Yet,

taking w_0, *this* world, as the first cause, the uncaused cause, is certainly a metaphysical option – a possibility of thought – that one might embrace, not reject. If, in embracing that option, one identifies w_0 with God, then one arrives at a particularly clear form of (impersonal) pantheism – at the pantheism that can be taken to be proclaimed by the following famous fragment of the writings of Heraclitus: "This [ordered] world, the same for all beings, neither one of the gods nor of men [human beings] has made, but it was always, and is, and will be an ever-living fire, kindled in measures and extinguished in measures."

11. The ancient Greek original of my translation into English can be found in the standard Diels/Kranz edition of the writings of the pre-Socratics.

If, however, in embracing that option – the option that w_0 is the first cause – one does not identify w_0 with God, but nevertheless allows that God is something actual, then God is – metaphysically unspectacularly – one of the countless entities whose actuality is derived from the actuality of w_0.

Whether or not w_0, in accepting that it is the first cause, is identified with God, if w_0 is the first cause, then there are only two possibilities regarding the origin of the actuality of w_0 (and the same, of course, is true of God if God is the first cause: replace "w_0" with "God" and "its" with "His", "itself" with "Himself" in the two "either_or_"-assertions that follow): *Either* w_0 is in itself necessarily actual, which means, presupposing the truth of the *Humean Confession*, that it is *intrinsically-to*-w_0 *in the strictest sense necessary* that w_0 is actual; *or* its actuality has no origin, which means that w_0 is actual even though there is no necessity of its actuality in w_0 itself and no (causal) derivation of its actuality from other actual entities. In other words, w_0 is either *fortuitously* actual – which is repugnant to reason because reason demands an origin of w_0's actuality – or w_0 is *intrinsically-to-itself in the strictest sense necessarily* actual.

12. These two (equivalent) "either_or_"-assertions are the straightforward result of applying to w_0 – taken to be a primary-actual entity (and w_0 must be so taken, once it is taken to be the first cause) – *what* has been asserted above for *all* primary-actual entities.

It is unknown which of the two alternatives for the actuality of w_0, exclusive of each other, is true – which of the two alternatives is true that result if w_0 is accepted to be a primary-

actual entity (what it *must* be under definition (D1)). That w_0 is fortuitously actual is repugnant to *reason*; that w_0 is intrinsically-to-itself in the strictest sense necessarily actual is repugnant to *intuition*. Yet, one of the two alternatives must be true if w_0 is accepted to be a primary-actual entity, we just do not know which one of the two is true.

13. We have no "helpers to knowledge" here. Our glaring prima facie intuition that w_0 is *not* intrinsically-to-itself in the strictest sense necessarily actual *fades* once we take into account that there might be *dark necessity*, inscrutable in all of its instances. (The idea of dark necessity was introduced earlier in this chapter: in note **5**.) And the trust in reason that would make the fortuitousness of the actuality of w_0 repugnant *to us* (and not just repugnant to reason) left us a long time ago (at the very latest, it started to leave us around the time of the Great Lisbon Earthquake in 1755, during the heyday of the Enlightenment – which is an irony of the history of ideas).

Thus, the central question of the preceding chapter – whether the actual world, which *in fact* is w_0, is *necessarily* w_0, *or not necessarily* w_0 – is still open even if w_0 turned out to be the only primary-actual entity there is, and the [only] first cause, the [only] uncaused cause: *If* w_0 is fortuitously actual, then it is not necessary that the actual world is w_0; *if* w_0 is intrinsically-to-itself necessarily actual, then the actual world *is* necessarily w_0 (taking into account that it is necessary that no two possible worlds are both actual).

14. *For a better grasp of the truth of the second conditional*: From $\mathrm{Act}(w_0)$, $\mathrm{PW}(w_0)$, and $\forall x \forall y(\mathrm{PW}(x) \wedge \mathrm{PW}(y) \wedge x \neq y \supset \neg\mathrm{Act}(x) \vee \neg\mathrm{Act}(y))$ it follows logically [by *formal* logic]: $\iota x(\mathrm{Act}(x) \wedge \mathrm{PW}(x)) = w_0$. Therefore (logically): From $\Box\mathrm{Act}(w_0)$, $\Box\mathrm{PW}(w_0)$, and $\Box\forall x \forall y(\mathrm{PW}(x) \wedge \mathrm{PW}(y) \wedge x \neq y \supset \neg\mathrm{Act}(x) \vee \neg\mathrm{Act}(y))$ it follows logically [by *formal* logic]: $\Box(\iota x(\mathrm{Act}(x) \wedge \mathrm{PW}(x)) = w_0)$. In other words: From "$w_0$ is *necessarily* actual", "w_0 is *necessarily* a possible world", and "It is *necessary* that no two possible worlds are both actual" it follows logically [by *formal* logic]: "the actual [and possible] world is *necessarily* w_0". And this establishes the truth of "If w_0 is intrinsically-to-itself necessarily actual, then the actual world is necessarily w_0", since "It is necessary that no two possible worlds are both actual" and "w_0 is necessarily a possible world" [cf. (C) in the previous chapter] are indubitably true, and "w_0 is intrinsically-to-itself necessarily actual" indubitably entails "w_0 is necessarily actual". [$\exists y(\mathrm{PW}(y) \wedge \mathrm{Act}(y))$ and $\Box\forall x \forall y(\mathrm{PW}(x) \wedge \mathrm{PW}(y) \wedge x \neq y \supset \neg\mathrm{Act}(x) \vee \neg\mathrm{Act}(y))$ can be – should be – appended as (D) and (E) to the principles (A), (B), and (C) which were set up as quite indubitable, no matter what is their precise interpretation, at the beginning of the previous chapter.]

But we just do not know *which one* of the *antecedents* of those two conditionals – i.e., of the two conditionals asserted immediately before note **14** – is true.

In this connection, one should keep in mind that it might be necessary [in the strictest sense] that the actual world is w_0 even if it is not necessary *intrinsically-to*-w_0 that w_0 is actual: Think of Leibnizian metaphysics (and compare note **7** and what immediately precedes it) which accords to w_0 – and to no other possible world – a *derivative* [nevertheless perfectly strict] necessity of its actuality, one that follows with logical necessity from the God-*intrinsic* necessity of the actuality of God defined as *the perfect being (ens perfectissimum)*. But this Leibnizian approach requires degrading w_0 from being a primary-actual entity to being a secondary-actual entity, and it thus requires that definition (D1) be discarded [since based on (D1) it can be shown that w_0 is a primary-actual entity]. Moreover, *perhaps* one should not speak at all of w_0's – of the actual world's – making anything actual, not in the sense proposed by (D1), nor in any other sense; *perhaps* w_0, though actual and *actualized* [made actual, Leibnizian-wise or otherwise], is constitutionally – qua *world* – unable to *actualize* [make actual] anything, and thus must be put in origination category (C-IV), not in origination-category (C-I) [or (C-II), or (C-III)].

The question which serves as the title of this chapter has not been answered in this chapter, though perhaps it is now better understood. At the same time, it has begun to seem doubtful (has it not?) that this question can be answered – in its ultimate metaphysical depth – with a qualitatively higher certainty of speaking the truth than merely *personal* certainty.

3 What (in the given context) is the metaphysical scenario most pleasing to human reason?

Two metaphysical features that w_0 assumes under definition (D1) (see the preceding chapter) are – *as attributed to God* – familiar from rational theology: *one* from mainstream rational theology – when (following (D1) and treating as the same concept *making actual*, *causing*, and *being a [sufficient] cause*; etc.) w_0 turns out to be *the [only] uncaused cause*, in other words: *the [only] first cause*; and *the other* from a rational theology that is somewhat deviating from mainstream rational theology – when (again following (D1) and treating as the same concept *making actual*, *causing*, and *being a cause*; etc.) w_0 turns out to cause every other actual entity (the attribution of omnicausality [excluding self-causality] to *God* can be found in the writings of *absolutist* monotheists; according to them, God is, for example, causally responsible for everything *that happens* [i.e., for everything *that is an actual event*]: *He* makes it *happen* and, thus, become a part of *History*, the sum of actual events).

15. Suppose *y* is an actual entity different from w_0. Since *y* is an actual entity and w_0 is actual (since w_0 is designated by the definite description "the actual [and possible] world" that perfectly fulfills its condition of normalcy), we have via (ii*): *y* is actual at w_0. Since w_0 is actual, $y \neq w_0$, and *y* is actual at w_0, we have via (D1): w_0 [being actual] makes *y* actual, in other words: w_0 causes *y*.

That w_0 causes every other actual entity does not *mean* – does not imply in the given (*now* given) theoretical framework – that w_0 is, of every other actual entity, the *sole* cause; forbidding causal overdetermination would, however, suffice to make the given theoretical framework render also this stronger assertion. In contrast, the proposition that w_0*, and no other entity*, causes every actual entity that is different from itself is already provable in the given theoretical framework: Suppose [for *reductio*] *x*, different from w_0, causes, *just like* w_0, every actual entity that is different from itself; hence, since w_0 is actual and different from *x*, *x* causes w_0. However, *x*, in causing w_0, must be an actual entity, and therefore, being different from w_0, *x* is caused by w_0 (according to supposition) – contradicting the asymmetry of causation.

Since w_0 causes every actual entity different from itself, and since there are, of course, actual entities different from w_0 (*myself*, for example), w_0 *is a cause* [of something]. Moreover, w_0 *has no cause*: if it had a cause, *x*, *x* [qua being a cause] would have to be actual, and, since w_0 causes every actual entity, w_0 would have to cause *x*, and thus *x* and w_0 would cause each other – contradicting the asymmetry of causation. Finally, w_0 is the *only* entity that is a cause but has no cause. Suppose [for *reductio*] another entity, *z*, *besides* w_0 is a cause without having a cause; hence *z* would have to be actual [qua being a cause], and therefore w_0 would have to cause *z*, since w_0 causes every actual entity different from itself – contradicting the supposition [according to which *z* has no cause].

Nevertheless, these consequences of (D1) (in cooperation with (ii*)) certainly constitute a form of *ontological naturalism* – a naturalism that can be harmonized with *broadly conceived* theism: either by identifying w_0 with God, or by allowing that God is one of the secondary-actual entities (this latter move can be profitably compared with Epicurus's treatment of the gods; as is well known, Epicurus's naturalism is *not* atheistic). But, of course, one can also consistently combine (D1)-*naturalism* with *the atheistic belief* that God is not an actual entity: that He is, *at best*, a non-actual *possibile*, more likely, however, nothing at all.

16. Between the status of [actual or non-actual] *possibile* and the status of being nothing at all, there is the status of being an incomplete consistent Meinongian object. If there are fictional objects, then they have precisely this latter status (provided the fictions to which they belong are consistent). However, the vast majority of metaphysicians deny that there are incomplete consistent Meinongian objects, their denial being due to the *logically necessary non-actuality* of such objects. Indeed, not a few metaphysicians even deny that there are *non-actual possibilia* – whose non-actuality is *not* logically necessary (because they are, after all, *possibilia*). (Note that these latter metaphysicians, by denying that there are non-actual *possibilia*, also deny that there are non-actual possible worlds.) Evidently, beings that are presumed to be *non-actual* are for many metaphysicians hard to stomach: hard to accept in their *non-actuality*. More on this subject can be found in Chapter 10.

The option of identifying w_0 with God becomes live if one takes (D1)-naturalism to be true along with broadly conceived theism. It is, however, not likely that anybody will take (D1)-naturalism to be true. Yes, definition (D1) is not only formally adequate, it is also perspicuous, it has clarity; this is the great advantage of (D1). But, as far as *adequacy of content* is concerned, (D1) seems unfit to serve as a definition of "w_0, being actual, makes *y* actual".

Now, how may "w_0, being actual, makes *y* actual" be explicated better, regarding adequacy of content, than it is explicated by (D1)? – how, it seems best, in such a way that w_0, though actual, turns out to make *nothing whatsoever* actual? Quite generally, how may "*x*, being actual, makes *y* actual" be *adequately* explicated? As was in effect stated already in the preceding chapter: Notwithstanding the immense efforts that have been put (in the course of the history of ideas) into (fully) explicating *causation*, or: *making actual*, progress regarding the question just posed is not likely. *Here*, *causation* – instead of attempting yet again to explicate it in full – will be considered in the light of a particular metaphysical scenario: the one *which is most pleasing to human reason* (which fact – that the scenario is most pleasing to human reason – does of course not entail that the scenario is true!), focusing exclusively

on the concept of causation *which is an indispensable part of that scenario.* While we ought to feel – from our reason's point of view – more at ease with "*x*, being actual, makes *y* actual" expressing *the concept of causation which is an indispensable part of the metaphysical scenario most pleasing to human reason* – rather more at ease than with "w_0, being actual, makes *y* actual" in its (D1)-meaning –, severe problems will become manifest also for this "favorite" concept of causation.

Human reason, desiring explanation, requires that every actual entity (and indubitably there are such entities) have an origin of its actuality – and *an* origin of its actuality is very often in human reason's perspective (in fact, *always*, as will soon emerge) *the* origin of its actuality (though *the* origin may still have more than one constitutive factor). At the same time, human reason assumes that not every actual entity is itself an origin of its actuality; if asked to give an example, *I*, speaking very reasonably on behalf of human reason, would present *myself* as an example, but countless other entities would serve just as well – just as *reasonably*. Consequently, *in reason*, some actual entity [i.e., *I*] is caused / made actual by another actual entity [i.e., *my* actuality is derived from the actuality of another entity]. Now, human reason, desiring *ultimate* explanation, explanation that comes to a definite resting-point, requires that every causal chain – there is at least one causal chain as soon as some entity *x* causes some entity *y* [causal chains *may* have just one *link*] – have a beginning: a first member that is actual and makes actual another actual being, but is not made actual by any actual being, or in a slightly smaller number of words (since *making actual* conceptually demands that what makes actual *is, ipso facto, actual*, and that what is made actual *is, ipso facto, actual*): a first member that makes actual [causes] another being, but is not made actual [caused] by any being [not by any *other* being, and, logically, not by *itself*].

Thus, if things are as human reason would like them to be, origination-category (C-I) is populated by at least one actual entity [namely, by the entity which is at the beginning of a certain causal chain that ends with *me*]; moreover, if things are as human reason would like them to be, the actuality of *every* entity in that category is not fortuitous, but has an origin, which origin, since it is not *another* actual entity, is the entity itself: every entity in (C-I) is intrinsically-to-itself necessarily actual.

Consequently, *since* I am not myself an origin of my actuality, as is only reasonable to believe (it would amount to a peculiar type of megalomania – *metaphysical* megalomania – if I claimed that I am intrinsically-to-myself necessarily actual), *I* do not belong to (C-I) – not only

because *I am caused*, but already because *I am not an origin of my actuality* [*the latter* does not logically entail *the former*]. But God, as He is traditionally conceived of, belongs to (C-I), with *all* entities in (C-I) being considered in themselves necessarily actual (as human reason would have it); after all, God is traditionally conceived of, (a), as *a first cause – an uncaused cause* – (a Thomasic version of the so-called "Cosmological Argument [for the existence of God]" pivots on the idea that God is *an uncaused cause*) and, (b), as *intrinsically-to-Himself necessarily actual* (an Anselmian version of the so-called "Ontological Argument [for the existence of God]" amounts to an attempt to prove that God is *intrinsically-to-Himself necessarily actual*).

In fact, *monotheism* is found to be part and parcel of the metaphysical scenario *which is most pleasing to human reason – as follows*: In effect, it has just [in the second-to-last paragraph] been concluded that it is part and parcel of *that* metaphysical scenario that there is *at least one* actual entity that makes actual without being made actual, *and* that *every* such entity is intrinsically-to-itself necessarily actual. Now, this much already achieved, the metaphysical scenario *which is most pleasing to human reason* emerges yet further if one adds to it that there is *no more than one* actual entity that, being in itself necessarily actual, makes actual without being made actual; this addition is pleasing to human reason because it serves ontological economy and – what is more important – because it removes all problems of coordination in the making-actual of whatever is *fundamentally* (i.e., by an uncaused cause) made actual. Therefore, according to the metaphysical scenario *which is most pleasing to human reason*, the singular term "the entity that intrinsically-to-itself is necessarily actual and makes actual without being made actual", or in short: "the *in se* necessarily actual first cause", is a definite description that refers to a unique entity just as it is *meant* to refer: to the *one and only* entity veridically described in accordance with the definite description's *given* meaning – an entity, now, that without taint of arbitrariness can be taken to be *the only god*, in short: *God*, where the singular term "God" is *defined* by the definite description [and singular term] "the only god".

We need not enter here into the question of how, in turn, the general term "god" is to be *defined*. Even without answering this question, *monotheism* is indeed found to be an aspect of the metaphysical scenario *which is most pleasing to human reason* (readers are reminded: the fact that the scenario *pleases human reason* does not mean that the scenario *is true*!). Monotheism, therefore, can be founded without referring to any revelations (as reported in

the Bible or in other holy books); all one needs to attend to, for founding it, are certain highly general cognitive interests of *human reason*: explanation-theoretic interests – manifest in principles of human reason – regarding origination and causation. (But note: though those interests are cherished by human reason and though the principles that serve those interests are, accordingly, favorites of human reason, they – the principles – are not beyond all reasonable doubt.)

Is it also an aspect of the metaphysical scenario which is most pleasing to human reason that the *in se* necessarily actual first cause – God – *causes / makes actual every other actual entity* (as some theists believed and, no doubt, some still believe, and as is true of w_0 under (D1)-naturalism)? – Hardly. It would, indeed, follow (logically) that God causes every other actual entity if every actual entity different from God were caused, and if *causation* / *making actual* were a *transitive* relation; for then (and in consideration of all that has already been pointed out as belonging to the metaphysical scenario which is most pleasing to human reason), from every actual entity different from God, a chain of causation – with at least two members – would run back to God, the first cause (*and* also the beginning, the first member of the chain): a chain of causation that, due to the presumed transitivity of causation, can always be compressed – if it consists of more than two members – into a (direct) causing of the entity by God. However, human reason does not require that every actual entity different from God *be caused*; it merely requires that the actuality of every actual entity (God not excluded) *have an origin* (cf. above); and it is thinkable (without being displeasing to human reason) that also actual entities that are different from God have an origin of their actuality *without* being caused [by anything]: they may be in themselves necessarily actual (just as God *is*, according to the scenario most pleasing to human reason). The so-called *abstract* entities, numbers and other items, are prima-facie-examples of such entities – only prima-facie-examples, because some thinkers deny, and many doubt, that there are abstract entities. But other examples of entities that are in themselves necessarily actual are the purely logical facts, for example, the fact that every entity is self-identical; one can hardly deny or doubt that there are purely logical facts (or, in any case, *one* purely logical fact, multifariously stated by countless sentences): states of affairs that obtain – are *actual* – already in virtue of their logical constitution alone.

But even if every actual entity different from God were caused, it would not follow that God causes it; for the relation of *causation* / *making actual* is *not* transitive: Consider a par-

ticular sinner and his sin; God, being actual, makes actual the sinner (this is plausible); the sinner, being actual, makes actual the sin. If *making actual* were transitive, it would follow that God, being actual, makes actual the sin; but, of course, this *does not* follow.

Thus, human reason certainly does not require that God (the *in se* necessarily actual first cause) cause every other actual entity. Rather, what is suggested to us by experience, *honored* (and not ignored) by our reason, is that there are, besides the one and only *primary cause*, innumerable *secondary causes* which, as secondary causes, are *such* that they – these entities in their *actuality* – are caused and, in turn, cause, and do so in such a manner that *what causes them* does not also cause *what they cause*.

Indeed, what human reason – desiring economy, simplicity, clarity – *does* require is that no cause be supernumerary, i.e., that there be no instance of causal overdetermination: no instance of the situation that two different entities, each being actual, *each* make actual the very same entity. (A situation where an entity is *made actual* [i.e., by something else] in addition to its being itself the origin of its actuality [by being intrinsically-to-itself necessarily actual] might be considered to be an instance of *more broadly conceived* causal overdetermination; but note that this maximally absurd "causal overdetermination" is already and definitely excluded by *logic alone*, is excluded *purely conceptually*; there is no need to defer, for accepting its exclusion, to demands of human reason that are based on what *pleases* human reason over and above logic.)

17. How does human reason handle apparent instances of causal overdetermination that cannot be resolved by pointing out some asymmetry that disqualifies one of the two apparent (sufficient) causes of an entity from being a cause of it? – Thus: If it seems that *in perfect symmetry* x_1 causes – makes actual – y, and also that x_2, different from x_1, causes – makes actual – y, then, in reality, neither x_1 nor x_2 causes y, but the *collective* consisting of x_1 *and* x_2 causes y – *provided* y does have a cause, and nothing different from x_1, from x_2, and from the collective consisting of x_1 and x_2 seems to cause y. In general, entit*ies* – two or more – that each seem *in perfect symmetry* to cause an entity y, do not do so in reality, but their *collective* causes y – *provided* y does have a cause, and nothing different from each of the entities and from their collective seems to cause y.

In turn, the metaphysical scenario *which is most pleasing to human reason* had better not exclude *collective causation*, where two or more entities, each of them actual, *together* make actual another entity. In fact, in the metaphysical scenario which is most pleasing to human

reason, w_0, the actual world, is made actual by a *collective* of actual entities (as will be argued below).

18. A *collective* is an entity defined by the individual entities that are its members, of which there are at least two. A collective is actual if, and only if, every member of it is actual. A collective is made actual if, and only if, every member of it is made actual. A collective *x*, being actual, makes *y* actual if, and only if, the members of *x*, being actual, *together* make *y* actual. In the metaphysical scenario which is most pleasing to human reason, collective causation, like all causation, always takes place without causal overdetermination. (Thus, if collective x_1 of actual entities comprises collective x_2 of actual entities, x_2 being different from x_1, and x_2 makes *y* actual, then x_1 does not make *y* actual. The same is true, of course, if x_2 is not a collective of actual entities but just an individual actual entity.)

It is not unimportant to point out here that the word "individual" [and its ontological synonym "particular"] has a non-categorial sense and a categorial sense. In the categorial sense, it is used as a substantive; in the non-categorial sense, it is used as an adjective. In the categorial sense, "individual" [or: "particular"] designates an ontological *category* among other ontological categories (like "property", "state of affairs", etc.); all *substances* (as spoken of in metaphysics) are individuals in the categorial sense (but not all individuals in this sense are substances). In the non-categorial sense, "individual" [or: "particular"] means the same as "single"; the two occurrences of "individual" in the first paragraph of this note have this non-categorial meaning. Note that every individual is an individual entity, but not every individual entity is an individual. Note also that no collective is an individual, but, like all entities, collectives are *single* entities: *individual* entities (after all, every entity is *an* entity, *a single – individual* – entity; as the medieval philosopher-theologians would put it: *ens et unum convertuntur*).

According to the present way of thinking – in complete harmony with the metaphysical scenario which is most pleasing to human reason, but in sharp contrast to a very different line of thought (which was followed in the preceding chapter) –, it will turn out that w_0 – being *caused* [by something] – does not belong to origination-category (C-I), and not to origination-category (C-II) either. It will, moreover, turn out according to the metaphysical scenario which is most pleasing to human reason that w_0 is a *causal end*, and *only* a causal end, and not also – by *causing* [something] – an absolute or relative causal beginning. The only origination-category remaining for w_0 – the actual world, the World – under the metaphysical scenario which is most pleasing to human reason is, therefore, (C-IV).

For the conclusion, within the metaphysical scenario which is most pleasing to human reason, that w_0 is caused / made actual, there is the following brief argument: w_0 *is actual*, and "taking to heart" all that is, *therefore*, actual (because it is [logically necessarily] actual *at*

w_0 – reasoning here on the basis of (i*) [and (iv*)]), it is to human reason (which demands *explanation*) in union with by-reason-not-ignorable human intuition (which just cannot forgo *the contingency of [the actuality of]* w_0) *neither* acceptable that w_0 be fortuitously actual *nor* that w_0 be intrinsically-to-itself necessarily actual. Rather, human reason in union with by-reason-not-ignorable human intuition desires and takes to be true *that* w_0 *be caused / made actual*; *this* is the only logically remaining option of origination for w_0 *if* the other two options are excluded – and they *are* excluded (as indicated) by human reason in combination with by-reason-not-ignorable human intuition.

19. It can seem that a cause, *x*, of the World, of w_0, is bound to make actual every actual entity that is *different from x* [different from *x*: for, according to the logic of making-actual, *x* cannot make itself actual]. But, actually, from *x*'s making actual w_0, it just does not follow that *x* makes actual every actual entity that is different from *x*. *True*, we have as a logical necessity (see the preceding chapter): (ii*) if w_0 is actual, then every actual entity is actual at w_0; from which the following logical necessity (logically) follows [since making-actual logically entails the actuality of what is made actual]: (v*) if w_0 is made actual by *x*, then every actual entity is actual at w_0. *And* if we also had as a logical necessity: (??*) if w_0 is made actual by *x*, then every entity that is actual at w_0 and different from *x* is made actual by *x*; then we could deduce [from (v*) and (??*)] as a logical necessity: (?*) if w_0 is made actual by *x*, then every entity that is actual and different from *x* is made actual by *x*. But (??*) does not seem to be a logical necessity. (Suppose the number 1 is an actual entity at w_0, and suppose *x*, not being the number 1, makes w_0 actual. Is it a logical consequence of these suppositions that *x* makes 1 actual? – It seems not.) Nor, indeed, does (?*) seem to be a logical necessity. (Suppose the number 1 is an actual entity, and suppose *x*, not being the number 1, makes w_0 actual. Is it a logical consequence of these suppositions that *x* makes 1 actual? – It seems not.)

Now, still moving within the metaphysical scenario which is most pleasing to human reason, what is it that can be said in favor of *the* cause/actualizer of the World – call it "Ω" – being a *collective*, and what is it, then, that can be said about the *composition* of the collective Ω that makes w_0 actual? (Why is it that, granting that there is *a* cause of the World (as has been argued for), there are not *two or more* [sufficient] causes of the World? Why can we simply speak of *the* cause of the World? – This is due to the ban, favored by human reason, on causal overdetermination.)

Above, monotheism was found to be an aspect of the metaphysical scenario which is most pleasing to human reason – a monotheism, however, which emerged as *dry* as it can possibly be in the *religious* regard. According to it, God, the only god, is the *in se* necessarily

actual first cause; nothing else transpired in the theological regard, and thus – so far – the monotheism of the metaphysical scenario which is most pleasing to human reason is purely "formal", as one might term it. In this purely formal monotheism, there is no indication that God is a person, with intellect and free will, and no indication that God is to be revered because of His supreme power in union with supreme wisdom and benevolence; but neither, indeed, is there any indication *to the contrary* in it.

One might leave it at that; but, doing so, one would not follow to the end the metaphysical scenario which is most pleasing to human reason. *For* human reason desires that every entity that makes something actual does not do so blindly and does so with free will; for human reason is dedicated – in the first place, before anything else – to guiding and watching the making-actual, the causing that consists in free, consciousness-informed human action.

Many readers will protest that *this*, after all, is *not* what human reason desires, at least not the human reason which is manifest in the sciences ("But isn't that the only human reason there is?"). Many will hold that the metaphysical scenario which is most pleasing to human reason does entirely without freely willed causing guided by the intellect. However, they confuse the metaphysical scenario which is *in itself* [i.e., without robust consideration of anything not in favor of it] most pleasing to human reason – most pleasing to it due to human reason's own nature – *with* a contrary metaphysical scenario that they have put in its place, in the role of being most pleasing to human reason, *after* the (objective) truth of the metaphysical scenario which is *in itself* most pleasing to human reason has become – at least in the part now at issue – so doubtful to them that, in the end, they have given up entirely the belief in its truth, and now firmly believe that it is *false*.

It *is* an aspect of the metaphysical scenario which is most pleasing – i.e., which is *in itself* most pleasing – to human reason that the *in se* necessarily actual first cause, God, is a *person*, endowed with intellect and free will – the possession of intellect and free will *by an individual* [or: *particular*] being precisely what the concept of *person* is defined by. And there are the following possibilities of thought regarding the relationship between God (the *in se* necessarily actual first cause – a person) *and* Ω (the cause of the World, the entity that makes w_0 actual):

(GΩ-11) God is in Ω and identical with Ω;

(GΩ-12) God is in Ω and not identical with Ω;

(GΩ-21) God is not in Ω but identical with Ω;

(GΩ-22) God is not in Ω and not identical with Ω.

Since "*x* is identical with *y*" logically entails "*x* is in *y*" [from the logical truth "*y* is in *y*" and "*x* is identical with *y*" we get by *substitution of identicals*: "*x* is in *y*"], and therefore "*x* is not in *y*" logically entails "*x* is not identical with *y*", those four prima-facie-possibilities are (obviously) reducible to the following three [two of which are formulated more briefly than before]:

(GΩ-11) God is identical with Ω;

(GΩ-12) God is in Ω and not identical with Ω;

(GΩ-22) God is not in Ω.

Now, did God all by Himself make w_0 actual [possibility (GΩ-11)]? Or is God, on the contrary, not directly involved in the causing of w_0 [possibility (GΩ-22)]? Or is God directly involved in the causing of w_0, even though He did not all by Himself make w_0 actual [possibility (GΩ-12)]? Human reason would find it very difficult even to determine which one of these three possibilities it *prefers to be the truth*, leaving quite aside the question which one of the three possibilities *is the truth*, *if* human reason had no recourse to *experience* – to experiential knowledge, as far as it goes, of (the content of) w_0 – and to deeply entrenched rational *likings*. Yet, human reason *has* recourse to these aids, and it is rationally allowed to do so.

In the eyes of human reason, the end of all causation is the achieving of the *one* actual world; it would, therefore, be metaphysically weird if the root and, no doubt, purpose-setter of all causation – God – were not directly involved in the causing of w_0. On the other hand, the disharmonious, often violently discordant content of w_0 – to the extent it is known to us (so far) – suggests that God is not the only actual entity directly involved in the causing of w_0. This is *also* suggested by the fact that actual human beings (for example, you and I) feel that they are, by making this or that comparatively small item actual, directly contributing to the actualization of a particular possible world.

20. The singular terms "w_0", "*this* world" "the actual^{Ind} world", "the actual world", "the World" – they all designate (in different ways) the same possible world, although *which world it is* is only partly known – and can be only partly known – to any actual human being who uses these singular terms. The reason for this situation is

not only the (for us human beings) staggering extent in space and time of the entity in question, and what might be called its – equally staggering – *depth* of complexity; the reason is also that knowledge of the entity in question cannot really reach beyond the point of *now*. It is even likely (indeed, more than likely) that the five singular terms adduced designate the entity in question only "in anticipation", the entity being, as yet, not really *there* in such a manner as to be designated by them "in completion".

The situation is not as unusual as it may seem. Consider the singular term "the period of the life of UM". This singular term designates a certain period of time, although *which period of time it is* can, at present, be only partly known to any actual human being (including myself). It is even likely (indeed, more than likely) that the singular term designates the entity in question only "in anticipation", the entity being, as yet, not really *there* in such a manner as to be designated by it "in completion".

Therefore, following the promptings in the paragraph before note **20** (though, like all the other promptings that form the metaphysical scenario which is most pleasing to human reason, they *very well* may make human reason stray from the truth), human reason accepts (GΩ-12) [what (GΩ-12) *says* and not merely the possibility of what it says] as part and parcel of the metaphysically scenario which is most pleasing to human reason (and therefore taken to be true by it – *until further notice*): According to this scenario, Ω – the cause of the World – is a collective, comprising, *at least*, God and some other actual beings, among them actual *human* beings.

And *in reason* one should say: comprising *all* actual human beings (not only you and me). Moreover, to human reason, it seems arbitrary to allow an empty gap within Ω – the (collective) cause of the World – regarding exemplified secondary-causal personhood, namely, between the person in Ω who is God, the *in se* necessarily actual first cause, and the persons in Ω who are the actual human beings, *certain* secondary-causal persons. It seems likewise arbitrary not to extend the reach of exemplified secondary-causal personhood within Ω below the human level. Personhood – the possession of intellect and free will by an individual – has many degrees in the actual beings that, belonging to Ω, directly contribute by making this or that actual (be it as the first or as a *second* cause, be it a small item that is made actual or a greater one) to the actualization of a particular possible world: from the highest degree – in God – through the degrees of angels and humans to the very low degree that personhood has in those nonhuman animals whose intellect amounts to phenomenal consciousness with very few differentiations and whose free will has very few, and very small, real choices – *but* who still make a contribution to the actualization of w_0 by making some small item, usually an event, *actual* (thus belonging to Ω).

21. *Intellect* is not only the ability to reason and understand, but also the ability to *perceive* relationships, differences, qualities, etc. With the degree of personhood in nonhuman animals becoming lower, the degree of intellect, too, becomes lower – which does not preclude that, *locally* (for perceiving certain relationships, qualities, differences), it may be higher than in *human* animals. Note that this can be the case even on levels of personhood where the intellect consists no longer of any ability to reason and understand, but only of an ability to perceive.

As was said above: human reason desires that every entity that makes something actual does not do so blindly and does so with free will. We have now seen that it is most pleasing to human reason that Ω, the cause of the World, has, so to speak, *many* seeing eyes and *many* acting free wills; hence, pleasing to human reason, Ω, in making w_0 actual, does not do this blindly and does this with free will [namely, via each of its members making, not blindly and with free will, some great or small thing actual, be it as the first cause, or be it as a second cause]. Still, Ω, *being a collective*, is not an individual, and therefore not a person, and the unity of causal action that can be expected from a person as being only natural cannot be expected, without backup, as something natural from Ω: Ω needs a coordinator of its causal action, a *single* coordinator (if there were more than one, a coordinator of the coordinator*s* would be needed). *The Coordinator* sets up actual, hence effective, laws for collective causation, and where these laws do not suffice, or for some deep reason need to be put momentarily out of effect, *there* the Coordinator coordinates causation "personally", so to speak. In bare metaphysical principle, the actual laws for collective causation could be without origin and fortuitous in their actuality, or could themselves be the origin of their actuality, that is: be intrinsically-to-themselves necessarily ["necessary" in the strictest sense] actual; but, no doubt, in the metaphysical scenario which is – not at all arbitrarily – most pleasing to human reason, *the Coordinator* makes them actual, puts them into effect. And *who* is this coordinator? There is only one candidate for this role in the metaphysical scenario which is most pleasing to human reason: the *in se* necessarily actual first cause – God.

The metaphysical scenario which, regarding causation, emerged in this chapter is, perhaps, not the way things really *are*, but it is certainly the way things, regarding causation, are *if human reason has* "its way". Not all of this complex metaphysical preference of human reason is founded on *a-priori*-predilections in theory-making that are rooted more or less deeply in human nature: in its ratiocinative and intuitive constitution; some parts of it derive

from very general and basic human experience, to which human reason *listens*, so to speak, and is, no doubt, rationally allowed to listen. It will, however, be seen in the second-to-next chapter in what way human reason, when listening to human experience still more than has been pointed out so far, can become confused in its attempt to answer the question *which* metaphysical scenario is most pleasing to it. (But let me emphasize: the confusion, if it comes about, is human reason's own fault, not that of human experience.)

4 How is it that an entity is made actual?

Near the beginning of the preceding chapter, the following was said: "While we ought to feel – from our reason's point of view – more at ease with '*x*, being actual, makes *y* actual' expressing *the concept of causation which is an indispensable part of the metaphysical scenario most pleasing to human reason* – rather more at ease than with 'w_0, being actual, makes *y* actual' in its (D1)-meaning –, severe problems will become manifest also for this 'favorite' concept of causation." It is time to turn to those problems – to consider them while focusing on the metaphysical scenario which is most pleasing to human reason.

Of all the formally correct interpretations of "*x*, being actual, makes *y* actual" – or more briefly: of "*x* makes *y* actual", "*x* causes *y*", "*x* is a cause of *y*" – that have *some* adequacy of content [the interpretation transported by definition (D1), though formally correct, is far away from such adequacy!] only the following interpretation is – comparatively speaking – *perfectly* comprehensible, *perfectly* intelligible, to the human understanding: "*x* is actual, and *y* is not in itself with logical necessity actual, and it is *logically necessary*: if *x* is actual, then *y* is actual; but *not* vice versa" [vice versa: where "*y*" is put in the place of "*x*", and "*x*" in the place of "*y*"], or logically equivalently: "*x* is actual, and *y* is not in itself with logical necessity actual, and it is *logically impossible* that *x* is actual while *y* is not; but *not* vice versa". However, this – comparatively speaking – *perfectly* perspicuous interpretation could fit, if adopted, only very few instances of alleged causation, and, usually, uninteresting instances at that (as when one says that the collision of the Titanic with the iceberg made actual / caused the touching of the Titanic and the iceberg); it is evident, moreover, that the interpretation in question is not in general fit to serve as the interpretation of "*x*, being actual, makes *y* actual" in instances of causation where *x* is actual *and a person* – an individual with intellect and free will – and *y* is a freely willed deliberate action of *x*.

In the previous chapter, it was found that human reason desires that every entity that makes something actual does not do so blindly and does so with free will. Thus, if human reason has "its way", *all* causations are free and deliberate causations, either by an individual person, or by a collective of persons, and there is no *impersonal causation*. It is, indeed, true that the vast majority of thinkers today are convinced of quite the opposite: that there is *no* free and deliberate causation, none by a person, none by a collective of persons; that all causation is impersonal. This fact, however, is not a manifestation of these thinkers having

attained to the *true nature* of human reason; rather, it shows their *spurning* of (part of) the straight – first, more or less *a priori* – preferences that human reason has regarding *guidance to truth* (which spurning, though induced by reason-external factors, many of them end up taking to be the inner, inevitable mandate of human reason itself, which one must *gladly* follow if one is not *blind to truth*; *more* on this can be found in the next chapter).

In any case, *if* – sticking to the metaphysical scenario which is most pleasing to human reason: the metaphysical scenario which is true if human reason has "its way", *believing* that scenario to be true – one holds that all causation is free and deliberate causation, then, of course, the instances that *others* subsume under the heading "impersonal causation" do not go away; one must accommodate them. What *are* they, then? – They are not instances of causation; they are instances of *actuality-prolongation*. The actuality-prolongations of something, *x*, that is actual are the instances of being actual that are *logically* ["automatically"] *consequent* to the actuality of *x* – *provided* they are different from *x* and not in themselves necessary as actualities – *on the basis* ["with the underlying premise"] of *the nomological structure* [of the World], different from *x*, *enhanced* by the actuality of *whatever else* [different from *x* and *the nomological structure*] is *already* ["to date"] given as actual [and, note, according to the metaphysical scenario which is most pleasing to human reason, the nomological structure *is caused*, and whatever else is *already* given as actual *is caused* – with the exception, of course, of the *in se* necessarily actual first cause, and of all the other in themselves necessarily actual, but non-causing, entities there may be].

22. Note that *y* being an actuality-prolongation of *x* is never revoked if *y* is *at some time* an actuality-prolongation of *x*; for (according to the metaphysical scenario which is most pleasing to human reason) *the nomological structure* is constant, it never changes; and the sum of entities, different from *x* and the nomological structure, that are *already* actual merely becomes larger and larger, it never changes in any other way.

If one holds that all causation is free and deliberate causation, "*y* makes *z* actual" [to be called: "*the first*"] does certainly not follow from "*z* is an actuality-prolongation of *y*" [to be called: "*the second*"]. And, having second thoughts now about the (parenthetical) example in the second paragraph of this chapter, the one involving the Titanic and the iceberg, one should now seriously consider that even if one does *not* hold that all causation is free and deliberate causation – that even then *the first* just does not follow from *the second*.

23. Consider: The sentence "The touching of the Titanic and the iceberg is an actuality-prolongation of the [actual] collision of the Titanic with the iceberg" is true, rather indubitably, whereas the sentence "The [actual] collision of the Titanic with the iceberg makes actual / causes the touching of the Titanic and the iceberg" is certainly not indubitably true (though it is true under the "perfectly perspicuous" – but rather *peculiar* – interpretation of causation considered in connection with that sentence in the second paragraph of this chapter).

Does, at least, *the second* follow from *the first*? No, and clearly *not so* if all causation is free and deliberate causation. Nevertheless, quite a few philosophers have held – within the framework of the so-called "nomological" theory of causality – that causation *is* actuality-prolongation (in the above-explicated sense), or at least consists in one or more special kinds of it; they ignored – or did not ignore but did not honor in its proper nature – free and deliberate causation.

It is tempting to assume that the following conceptual relationship obtains (with logical necessity) between causation and actuality-prolongation: "For all *x*, *y*, and *z*: if *x* makes *y* actual and *z* is an actuality-prolongation of *y*, then *x* makes *z* actual." However, if one *does* assume this – call it "the prolongation-law" –, then one will rather likely be afflicted by non-negligible difficulties (at least by worries), as follows:

Causal overdetermination is contrary to human reason (it is absurd that something be made actual twice over). But the danger of *apparently* encountering causal overdetermination is immensely increased if the prolongation-law is taken to be true. The apparent encounter with causal overdetermination, in other words: the encounter with apparent instances of this type of causal absurdity, may become just about unavoidable – and the pressure to accept the apparent instances of causal overdetermination as real instances of it may become irresistible.

In reaction to this, one may, very reasonably, suggest the following *amended* version of the prolongation-law: "For all *x*, *y*, and *z*: if *x* makes *y* actual and *z* is an actuality-prolongation of *y* and *z* is not made actual by any *u* that is different from *x*, then *x* makes *z* actual." This may seem to help, and to some extent it *does* help; but to some extent it also does not help. Consider the following situation:

> *x* makes *y* actual, and *z* is an actuality-prolongation of *y*; *x´*, different from *x*, makes *y´*, different from *y*, actual, and *z* is an actuality-prolongation also of *y´*; no entity different from both *x* and *x´* makes *z* actual.

True to how human reason would have it, the actuality of *z* has an origin. The described situation determines that the actuality of *z* has no origin in *z* itself, since *z* – being an actuality-prolongation – is not in itself necessarily actual (which is the only way in which the actuality of *z* could have an origin in *z* itself). Therefore, the origin of the actuality of *z* is in an actual entity other than *z*: some actual entity makes *z* actual. It follows with the help of the situation-description that this entity is *x* or *x´*. But *which* of the two is it? Or is *z* made actual by *x*, and also made actual by *x´*? The perfect symmetry of the described situation strongly suggests this, and with the prolongation-law it would, indeed, follow: *we are confronted with a case of causal overdetermination*; the way out, in accordance with note **17**, namely, to have *z* made actual by *x*-and-*x´*, not by *x*, and not by *x´*, is blocked by the situation-description which explicitly says that no entity different from both *x* and *x´* makes *z* actual [and *x*-and-*x´ is* different from both *x* and *x´*].

In contrast, with the *amended* prolongation-law alone (nothing further is needed) it can be concluded from the situation-description that it is *x* that makes *z* actual if it is not *x´*, and that it is *x´* that makes *z* actual if it is not *x*; but nothing further can be concluded.

24. Suppose *x´* does not make *z* actual. From the situation-description together with the *amended* prolongation-law, it follows that *z* is made actual by some *u* that is different from *x´*. Due to the situation-description, such a *u* must be identical with *x*. Therefore: *x* makes *z* actual. – The argumentation proceeds *mutatis mutandis* if the supposition is "*x* does not make *z* actual" and the conclusion is "*x´* makes *z* actual".

Thus, under the *amended* prolongation-law, there may arise the situation that an entity is made actual and yet it is impossible to determine exactly *by what*: two different entities may have perfectly equal rights to be the one that makes the entity actual, it being excluded that the entity is made actual by each of the two entities or by anything different from both of them. However, if such a situation arises, then it is only a *minor* injury to the interests of human reason. It would constitute a *major* injury to the interests of human reason if the above situation-description were true *with* "and neither *x* nor *x´* makes *z* actual" added to it; for the so-enriched situation-description would not only truthfully describe two counterexamples to the (unamended) prolongation-law (one with *x*, *y*, and *z*, the other with *x´*, *y´*, and *z*), it would also break with the principle of human reason that every actual entity that is not actual by inner [and strictest] necessity – i.e., is not in itself necessarily actual – is made actual by

something [i.e., by something *actual*, *different* from it]. (Note that the addition of "and neither *x* nor *x´* makes *z* actual" to the situation-description would also refute the *amended* prolongation-law, not just the prolongation-laws. With the *amended* prolongation-law and *the addition* we get: *z* is made actual by some *u* that is different from *x*, and *z* is made actual by some *u* that is different from *x´*; but we already have [as part of the situation-description]: no entity different from both *x* and *x´* makes *z* actual. It follows logically that *z* is made actual *both* by *x* and by *x´* – contradicting *the addition*.)

Let, therefore, the *amended* law of actuality-prolongation – in short: "the *amended* prolongation-law" – be accepted (while the original, unamended law of actuality-prolongation – "the prolongation-law" – is not accepted) in the face of the rationally upheld exclusion of causal overdetermination. There are much greater problems waiting for free and deliberate causation than those that can be brought about by the *amended* prolongation-law.

If *x* makes *y* actual, freely and deliberately (and is, therefore, an individual with intellect and free will: a *person* – of the highest kind, or of the lowest kind, or of a kind somewhere in between the highest and the lowest), then undeniably there is, if *y* is a freely willed deliberate *immediate* action of *x* (which is the kind of causation that *all* free and deliberate causation ultimately springs from via actuality-prolongation), *a conceptual gap* between the actuality of *x* and the actuality of *y*: the actuality of *y* is not – not in any sense – *a consequence* of the actuality of *x*.

First, *what* is it, precisely, that *y is* if it is a freely willed deliberate *immediate* action of *x*? It is, then, *the actual act of will itself* of *x*, made actual by *x* freely and deliberately; what it is *certainly not* is this: an instance of being actual that is *logically* ["automatically"] *consequent* to the actuality of *x* – *provided* it is different from *x* and not in itself necessary as an actuality – *on the basis* ["with the underlying premise"] of *the nomological structure* [of the World], different from *x*, *enhanced* by the actuality of *whatever else* [different from *x* and *the nomological structure*] is *already* ["to date"] given as actual. In other words, it, *y*, is *certainly not* an actuality-prolongation of *x*.

A conceptual gap between the actuality of *x* and the actuality of *y* is *undeniably* there if *y* is a freely willed deliberate *immediate* action of *x*, i.e., if *y* is *the actual act of will itself* of *x*, made actual by *x* freely and deliberately – *not* a gap in *wording*, of course; for *y*, being actual, is explicitly said *to be made actual by x*, *x* being itself actual. And this conceptual gap cannot really be *closed*; further analysis merely makes the gap emerge more sharply. Here is further

analysis: If *y* is a freely willed deliberate immediate action of *x*, then *y* is, *first of all*, constantly very shortly before time *t*, a mere possibility among mutually actuality-exclusive mere possibilities *in the power of x* (who is an actual person): a merely possible *act of will* among other merely possible *alternative* acts of will in the power of *x*; and *second*, at time *t*, *x* – using its power, guided (*not* determined!) by its intellect [be it dim, fairly luminous, or bright, be it great in scope or small; and, note, *x*'s intellect may say "I have no preferences. Be arbitrary!"] – "deliberately", i.e., not blindly, makes actual *y*, and not any of its "fellows in possibility", freely choosing to do so. (And then, as a rule, there are further consequences: actuality-prolongations of *y*.)

Now, in view of what has just been said, the conceptual gap between the actuality of *x* and the actuality of *y* may briefly seem to be *not there* after all: *y*, an immediate action of *x*, *is made actual by x* in the specified manner [which fits the action's *immediacy* and is a "free and deliberate" manner]. However, critics may hold against this that "*x* makes *y* actual" is just a phrase with no substantial meaning here, just a "magical" phrase, which, since there is no magic in philosophy, does not magically succeed in establishing as being there, in the end, what is not there: *a causal connection*; what is there is the actuality of *x*, and what is also there is the actuality of *y*; but the latter is quite accidental to the former, since it has been excluded that *y* be an actuality-prolongation of *x*. In some weak sense, critics may say, *y* could be taken to be a freely willed deliberate immediate action of *x* (though this would require a considerable correction of "the naïve causal idea" of *free will*), but it is certainly not, they will say, in a strong, *causal* sense a freely willed deliberate immediate action of *x*; for, if it were freely willed *in that sense* by *x*, then it would not be what, *in fact*, it is: accidental to the actuality of *x*.

In reply, one may point out that the critics do not appreciate what is implied by *the fact* that *y*, along with its "fellows in possibility", is *in the power of x*: the very real ability of *x* to choose to make actual (or not to make actual) one thing, or another, out of a certain range of alternative mere possibilities (in the limiting case, it may be just one such possibility) – which ability is *not* to be separated from the ability of *x* to make actual whatever it is, there, that *x* chooses to make actual (for *x*'s choosing to make actual *is inseparable from x*'s making actual whatever it is that *x* chooses to make actual). To which reply the critics in turn reply, presumably, that there is no such power, no such ability, and hence no such *fact*; *y*, being actual, but being – as is highly plausible – not in itself necessarily actual and not actual fortuitously (that

is: actual "by chance"), is made actual / is caused, they may say, by *whatever* it is caused / made actual by; but it is certainly not made actual by *x*; which does not preclude, they may add, that *y* could still *count* as a freely willed deliberate immediate action of *x*: in a noncausal sense, a sense *not* intended by *the proponent* (in this dispute) .

The proponent may insist that *there is* the ability, the power of *x* to make actual whatever *x* chooses to make actual out of a certain range of alternative mere possibilities: the ones that are, constantly very shortly before "the moment of action", *in the power of x*, one of these possibilities being *y*, the particular act of will that *x* does make actual; – may insist on this against *opponents* who may perhaps, with David Hume, even deny that there are any *powers* (of anything) at all, in any sense that comprises more than just logical possibility [i.e., "power" in the weakest conceivable proper sense, so weak as to be almost not a proper sense]. The metaphysical dispute seems to end in a standoff – and it does, indeed, end in a standoff (other thinkers will disagree, of course). *But* even if there is the ability, power of *x* to make actual whatever *x* chooses to make actual out of a certain range of alternative mere possibilities, one of these possibilities being *y*, which *x* does make actual – the conceptual gap between the actuality of *x* and the actuality of *y* is still there; the gap reveals itself in the following two questions: How come *x* chooses to make *y* actual? How come *x* actually makes *y* actual? Given that *y* is a freely willed deliberate immediate action of *x* – *the* act of will *x* freely and deliberately actualizes out of the set of merely possible mutually actuality-exclusive acts of will in its power – the answer to both questions can be nothing more than this: "The actuality of *y* lies entirely in the causal sovereignty of *x*." To many thinkers, however, this answer seems just "words, words". Looking at the proffered analysis of "*y* is a freely willed deliberate immediate action of *x*" – that is, at "*y* is *the* act of will *x* freely and deliberately actualizes / makes actual / causes out of the set of merely possible mutually actuality-exclusive acts of will in its power" – all *they* can see in this analysis is its ultimate *shame* (so to speak), concealed in vain: "According to *this*, the actuality of *y* is not in any comprehensible way removed from having no origin, from being fortuitous." And their ensuing triumph has been very loud (in recent years): "The whole idea that free will, freedom, essentially includes choosing to actualize an item from a set of alternative, so far non-actual possibilities is reduced to absurdity. It is fundamentally mistaken."

Is it likely that competent thinkers who intend to say that the actuality of something is *due to some person's causal sovereignty* end up saying what they do not want to say at all: that it

is *fortuitous*? – It is *not* likely that they do so, *not* likely that they do so *methodically*, as is their way of treating the matter, and certainly *not* likely *once* one fully appreciates that "*x* causally *determines y* to be actual" is another – so far not mentioned – formulation of precisely that which is already taken to be expressed by "*x* actualizes *y*", "*x* makes *y* actual", "*x* causes *y*", "*x* is a cause of *y*" – a new formulation which leaves no foothold for suspecting that, if the variable "*x*" is taken to stand for a *person*, some persons will deceive themselves about its meaning, indeed about its having any clear, comprehensible meaning at all.

What we really have before us in this dispute is a situation that allows, *irreducibly* and involving *no confusions*, two metaphysical interpretations (and though human reason has its *prima facie* preference here, *ultima facie* it may have a different one – or may not know what to prefer). One of the issues is *the initiation of causation* in case *y appears* to be a freely willed deliberate immediate action of *x*. In this case, the actuality of *x* does not seem to lead all by itself to the actuality of *y*; in this case, when *x* causes *y*, it first *goes into causing y*. And is *this going into causing*, too, made actual by *x*? *Or* does the going into causing *come over x*, so to speak – be it fortuitously ("by chance"), or be it caused by something else than *x*, or be it intrinsically necessary to *x* [which is very unlikely; not entirely, however, if *x* happens to be God – the *in se* necessarily actual first cause]? Clearly, *y* is – after all – *not* freely willed (in the intended sense) by *x* – contrary to appearances – *if* the *second* of the two *main* alternatives just described [and marked by "?": formulated as questions] is true and consequently the going into causing *comes over x*. However, there is no saying *in general and with certainty* which of those two alternatives is true [though human reason certainly has a *first, penultimate* preference for the *first* alternative, which is *that the going into causing is made actual by x*, a *second, ultimate* preference for the *second* alternative – which is *that the going into causing comes over x* – may supplant it, and in many people the second preference has, in fact, supplanted the first], not even in relation to a – any – seemingly freely willed deliberate immediate action *y* of a *nonhuman actual animal x* (for example, of Micky or Tiger, cats I am acquainted with, who, by the way, are far from being so-called "supernatural" beings). We, the actual human beings, do not know enough for that, and never will.

Leaving quite aside the issue of *the initiation of causation*, it must be admitted that the nature of the intended *determination* resists analysis if *y* is *causally determined* to be actual by *x* – or in other words: is made actual by *x*, is caused by *x* – *as* [i.e., *as to be*] a freely willed deliberate immediate action of *x*. It is tempting to interpret this determination as *necessita-*

tion. But if an actual human being, *x* (let alone an actual person of a lower kind, say, a cat), makes actual *y as* a freely willed deliberate immediate action of *x*, does it then *necessitate y*? The necessitation would have to be *strictest* necessitation, for there is, following the (in this book accepted) *Humean Confession*, no other [true, objective] necessitation than *strictest* necessitation – of which the only known and (fairly) understood highest species is *logical* necessitation. Now, if I freely and deliberately move my little finger (perhaps to signal assent), which action is a result – via actuality-prolongation (in accordance with the amended law of actuality-prolongation) – of a freely willed deliberate *immediate* action of mine: of the act of will I freely (*choosing*-ly) and deliberately (*not* blindly) *causally determine* to be actual – make actual – out of the set of merely possible mutually actuality-exclusive acts of will that are in my power ("at the ready" right before the time of action); *do* I then (truly and objectively, in the strictest manner) *necessitate* the actuality of that act of will – *logically* necessitate it since the necessitation in question is not to be (to human reason) as dark as *doom*, as inscrutable, as incomprehensible as *fate*? The answer seems to be "no". We do not even know what it would *mean* that a freely and deliberately acting agent – like me – *logically* necessitates an act of will, even though we *do* know what it means that a proposition / state of affairs – which, of course, I am *not* – logically necessitates a proposition / state of affairs.

25. Based on *logical necessity*, *logical necessitation* between propositions / states of affairs can be defined as follows: *p* logically necessitates *q* if, and only if, it is logically necessary that *p* is not true or *q* true / that *p* does not obtain or *q* obtains. Moreover, logical necessity can be used to define logical necessitation between other types of entities, say, between properties. Thus, property *F* logically necessitates property *G* if, and only if, it is logically necessary that everything that exemplifies *F* also exemplifies *G*. It is, however, not to be seen how logical necessity might be used to define *personal-agential* logical necessitation – logical necessitation *by the relevant agent-person* – of a free and deliberate act of will; it seems there is, for me or any other agent-person, no statement *S*, *centrally and properly involving the agent* [in what it *states*], so that it is logically necessary: non-*S*, or *wact* is actual [*wact* being the relevant act of will that is freely and deliberately made actual – determined to be actual – by the agent], and so that one could *without circularity properly* say that the agent "logically necessitates" *wact* in virtue of the truth of *S* being in conjunction with the truth of "It is logically necessary: non-*S*, or *wact* is actual". (And of course it is *not* logically necessary – not *simpliciter* logically necessary – that *wact* is actual; after all, *wact* is *freely and deliberately* made actual / determined to be actual by the agent; if this making-actual is to be "logical necessitation", it can only be logical necessitation *relative* to a logically contingent "trigger": the state of affairs *stated* by the statement *S*.)

Indeed, if I freely and deliberately *causally determine to be actual – make actual, cause – any* act of will out of *any* set of merely possible mutually actuality-exclusive acts of will that are "ready" in my power, I do not seem to logically or otherwise *necessitate* – truly and objectively, in the strictest manner, *and in a well-understood way* – that act of will. What I do – in making it actual, causing it, causally determining it to be actual – is, doubtless, *give actuality* to it: to an entity which, antecedently, is merely possible (and *only subsequently* actual; the analytically true postulate, central to causation, *that what is caused is actual* refers to the status of what is caused *after* it is caused). In fact, "*x* [being actual] gives actuality to *y*" is a *synonym* of "*x* [being actual] makes actual *y*" (in addition to the several other synonyms of it that have already been presented). But analysis comes to a stop here. However, *supposing* that the metaphysical scenario which is most pleasing to human reason is true, the recalcitrant *fact* remains: I freely and deliberately give actuality to this act of will which is in my power (and thereby *definitely withhold* actuality from all the other merely possible acts of will also in my power at the relevant time: the time of action, since the merely possible acts of will in my power are all *mutually actuality-exclusive*: the [state of] actuality of each *implies* the [state of] non-actuality of all the others *logically on the basis* ["with the underlying premise"] of *the nomological structure* of the World *enhanced* by the actuality of *whatever else* is already ["to date"] given as actual). And even if, perhaps, I give actuality to "the chosen one" *only* with the help (the support) of God, I still give actuality to it *in my causal sovereignty*. Put lapidarily: *Choosing is a causing without a cause other than the chooser.*

To others, however, matters have seemed, and do seem, *otherwise*. For them, the stalling of the relevant analysis – far from being merely an indication of conceptual primitiveness – is a sign that there is simply no such *fact*.

5 Why is the World like *this*?

In this chapter no full answer, of course, is given to the question which is its title. A *merely partial*, because in the main *merely structural*, metaphysical answer – one best-liked by human reason – was given in Chapter 3 and further elaborated in Chapter 4. The aim of this chapter is to obviate an all too easy-seeming rejection of that answer, often beginning with "*Why* is the World like *this*?" being asked in an indignant, even outraged tone of voice, a rejection that is taken to the point of *branding* that answer as *not true* and, therefore, as not liked by human reason at all – *after all*.

The desire for truth is the paramount factor in human reason's assessment of which metaphysical scenario is most pleasing to it, to such an extent that the *ultimately intended* – or: *second-intended* – answer to the question "Which metaphysical scenario is most pleasing to human reason?" is this: "The one which is true, of course." The *penultimately intended* – or: *first-intended* – answer to that question is, however, this: "The one which is true if human reason has *its way* [in other words: if the truth-intentions which are essential or at least congenial to human reason are fulfilled in the formation of reality]." Obviously, the two answers can be at variance: *objectively* if, and only if, the metaphysical scenario which is *true* is not the metaphysical scenario which is true if human reason has *its way*; *subjectively* [or rather: *intersubjectively*] if, and only if, the metaphysical scenario which is *believed [rationally, they say] to be true* is not the metaphysical scenario which is true if human reason has *its way*. It serves clarity to keep the *two* answers strictly apart as far as their *meaning* is concerned, and to keep in mind that, while having different *meanings*, they may yet *refer* to the same item [so that the metaphysical scenario which is true if human reason has it way *is in fact* the metaphysical scenario which is true] – even if it is expected according to the lay of the land, even firmly believed, that they refer to different items.

In disregard of this admonition, it is, in particular cases, not just an occasional error that the second-intended answer to the question "Which metaphysical scenario is [in this particular case] most pleasing to human reason?" – an answer after "second thoughts" – is *nevertheless* taken to be *in meaning* (and therefore *necessarily* also in reference) identical with the first-intended answer to that question, so that there is seen no real difference at all between the two answers and really no reason to speak of *second-intended* answer and *first-intended* answer (since the latter is taken to be the former *in the end*, the different wording having no

significance) – even if, actually, the second-intended answer is *content-incompatible* with the first-intended one.

26. Here both answers are to be taken as linguistic entities (in fact, as singular terms), as the *summary* (not yet detailed) answers as which they have just been formulated: "The one [i.e., the metaphysical scenario] which is true if human reason has *its way*", "The one [i.e., the metaphysical scenario] which is true". Note that a content-incompatibility of the two answers (which will become manifest once details are given) does not preclude their being both true *as* answers to the question asked: *as* the first-intended answer and *as* the second-intended answer to the question "Which metaphysical scenario is most pleasing to human reason?". If the two answers are content-incompatible, then the metaphysical scenario which is true is [truth-]incompatible with the metaphysical scenario which is true if human reason has *its way*; nevertheless, the answer "The metaphysical scenario which is true if human reason has *its way*" is still true *as* the first-intended summary answer to the question "Which metaphysical scenario is most pleasing to human reason?", and "The metaphysical scenario which is true" is still true *as* the second-intended summary answer to that question.

In what follows, I present an example of the just-described error (which error generates the illusion that human reason is *automatically* [by an inbuilt mechanism, as it were] in perfect harmony with whatever is true – which, *in effect*, turns out to be the belief that human reason *automatically* agrees with whatever propositional content those who happen to be acknowledged as the knowing elite of humankind *consider to be true*, that content being *automatically* taken to be just as pleasing to human reason as it is, allegedly, true). In Chapter 3, a substantial *first-intended* answer was given to the question: "Which metaphysical scenario is, regarding causation, most pleasing to human reason?" However, many thinkers will hold against that answer that, in reality and truth and "from the beginning", the metaphysical scenario which is most pleasing to human reason is not only entirely without freely willed causation guided by (broadly conceived) intellect, but is also without any god, angel, or soul whatsoever; according to those thinkers, human reason *abhors* (so to speak) the assumption, as actualities, of "supernatural" persons, indeed the assumption, as actualities, of *any* persons: of *any* individuals endowed with *intellect and free will* – *intellect* that guides them, but does not determine them, in their respective power: in their *free will* to *choose to actualize* something that is possible but not yet actual [thereby, on the other hand, rendering any "competing" –"[incompatibly] alternative" – non-actual but possible item for their actualizing at the relevant time *definitely non-actual*].

But human reason, certainly, does not "abhor" this assumption "from the beginning", *a priori*, in other words: already when – and as long as – it sticks exclusively to the instigations of its own nature (which, by the way, *favors* sensitivity to experience). *Quite on the contrary*. Yet, *a posteriori* it may indeed "abhor" it, and indeed, human reason may experience difficulties not to "abhor" it *a posteriori*: after taking to mind the disturbing documentary that human experience, if it is fairly comprehensive, presents of *what the World is like*. There is a word for what the World is like: *horrible* (which, of course, doesn't mean that the World is *only* horrible). The amount in the World – in w_0, the actual world – of meaningless suffering, killing, waste, futility, error, blind folly, blind fury, blind destruction, and, last but not least, of moral depravity, darkest moral evil, is staggering – staggering to human reason – and it is growing exorbitantly every day. And this tsunami of evils may seem *automatic*, may seem to be simply *the law* – an impersonal law of nature – for the World forever. How, then, can there be *persons* (in the defined sense), let alone "supernatural" persons – as *actual* entities, of course (not as mere possibilia, and not as incomplete yet consistent Meinongian objects)? This question may force itself irresistibly on human reason, mutating into a rhetorical question that not merely suggests but *clamors* for the negative answer: "There are none."

The further reaction of human reason *cannot reasonably* be that the *first-intended* answer to the question "Which metaphysical scenario is, regarding causation, most pleasing to human reason?" – "The scenario which is true if human reason has *its way*" – is false *as a description* of the metaphysical scenario which is most pleasing to human reason (be that scenario *itself* – the detailed scenario meant in the description – true, or be it false). That answer remains as true as it ever was (whether it is *summary*, as presented, or is *spelled out in detail*). The further reaction of human reason *can reasonably* only be that the *second-intended*, *ultimate* answer to that question – "The scenario which is true" – is, "when truth is being given its due", at variance *in content*, is *content-incompatible* with the *first-intended*, *penultimate* answer, namely, in the respect just referred to: the existence-in-actuality of persons, and prominently of so-called "supernatural" persons, and is, therefore, *far* from meaning the same as the first-intended answer – *contrary* to what many thinkers will not fail to believe (falling prey to the above-mentioned *error*).

But, on a closer look, there is, after all, no cogent reason as yet for letting the second-intended answer be at variance in content with the first-intended one. True, according to the first-intended answer to the question "Which metaphysical scenario is, regarding causation,

most pleasing to human reason?", Ω, the (collective) cause of the World, comprises also actual individuals with intellect and free will that are, regarding intellect and free will, even *higher* than the actual human beings (all of which are included in Ω). But there is no indication in that answer that the individuals in Ω are morally perfect, good, or even basically benevolent; as far as that answer goes, they – some, many, or all of them – may be *such* beings as is strongly suggested by *what the World is like*: they may be *horrible* beings morally and act accordingly. Indeed, as we all know, actual human beings are very often *horrible* morally, acting accordingly (*and* humans are rather *powerful*, too: see the great variety and impact of their choices). And it has long been suspected that also some of the persons in Ω who are higher, regarding intellect and free will, than human beings but lower than God are *very horrible* morally, and *very powerful*, acting accordingly.

Still, if God, the *in se* necessarily actual first cause, were necessarily a morally perfect person (as, admittedly, He is considered to be in the Christian tradition), and necessarily omnipotent and omniscient (as, again, Christian tradition would have it), then the indubitably horrible character of the World would provide reason to doubt that God is an actual being – and *then* there could follow *the denial* of the prima facie rationally desired and assumed *identity in reference* of the *penultimate* and the *ultimate*, the *first-intended* and the *second-intended*, answer to the question "Which metaphysical scenario is, regarding causation, most pleasing to human reason?". (*Note*: the *identity in reference* between the answer "The scenario which is true if human reason has *its way*" and the answer "The scenario which is true" is *prima facie* [not necessarily also *ultima facie*] rationally desired and assumed, but the *identity in meaning* between the two answers is definitely not rationally desired or assumed; there simply is no identity of their meanings.)

However (in turn), nothing in human reason forces us to adopt the maximalist stance with respect to God and to consider Him an *ens perfectissimum*. *That* God – the *in se* necessarily actual first cause – is an actual entity by inner necessity and the only actual entity that makes actual something *and* is not made actual by anything; *that* He is a person with supreme intellect and supreme free will; *that* He is the Coordinator (therewith Legislator) of all causation (and thereby necessarily also of causation's extension: actuality-prolongation) – *these* are the perfections of God that are warranted by human reason as parts of the metaphysical scenario which is – regarding causation, and thence overall – most pleasing to human reason (*qua* the scenario which is true if human reason has *its way*); *no more* perfections than *these*.

That God is almighty and all-knowing (beyond the might and knowledge that is required for being the first cause and the Coordinator of all causation), that God is good, that God takes a special interest in human beings, that God loves us, has mercy on us – all of this is quite beyond the limit of what can be considered to be desired by human reason solely on the basis of its intrinsic-essential interest: the purely cognitive interest in *explaining and understanding*. (But it is, of course, not beyond the limit of what can be considered to be desired by the *human heart* on the basis of its intrinsic-essential interest in *salvation*.)

Thus, the first-intended, penultimate answer to the question "Which metaphysical scenario is, regarding causation, most pleasing to human reason?" does not stand in need to be complemented – under the auspices of *truth*, on account of the World's *horror* –by a second-intended, ultimate answer that is *content-incompatible* with the penultimate one. Rather, the *horror* of the World – manifest to human experience and thence to human reason (there is no call for human reason to go into denial here) – does not endanger, on no level of detailing it, the prima facie rationally desired-to-be-true assumption that *how things, regarding causation, are metaphysically if human reason has its way* (*alias:* the first-intended, penultimate answer; for details, see Chapter 3) is, *in fact*, identical with *how things, regarding causation, (really) are metaphysically* (*alias:* the second-intended, ultimate answer). There are countless consistent metaphysical stories ("theories") that integrate *the horror* of the World, precisely such as it is (manifest in wars, genocides, pandemics, catastrophes of nature, mass extinctions, and in the countless daily cruelties and miseries, some natural, some not, some greater, some smaller), into the metaphysical scenario that emerged, regarding causation, as human reason's *first-intended* favorite in Chapter 3. *The horror* of the World does not rationally endanger *the assumption* of the truth of that scenario – *if*, indeed, one assumes its truth; for which step – even though the scenario is favored naturally by human reason, is a natural favorite of human reason, most pleasing to it – there is, after all, no rational obligation (but only a rational desire); it is *not* a rational *"must".* Human reason *knows*: the World may *not be* (metaphysically) how *I*, human reason, *rationally* want it *to be*. Nevertheless, *some* endowed with human reason (including myself) stick to the metaphysical picture that their human reason, following its own nature, *at first* points them to – and they do so not unreasonably. *Others* do *not* do so – in turn, not unreasonably.

27. It may be helpful to have the metaphysico-methodological message that is central to this chapter presented in a more easily surveyable manner than in the main body of the chapter:

Question: "Which metaphysical scenario [regarding this or that] is most pleasing to human reason?"
First-intended, penultimate answer: "The metaphysical scenario which is true if human reason has *its way*."
Second-intended, ultimate answer: "The metaphysical scenario which is true."

The prima facie rationally desired-to-be-true assumption: "The metaphysical scenario which is true if human reason has *its way* is identical with the metaphysical scenario which is true."
In other words: "*How things are* [metaphysically, in this or that regard] *if human reason has its way* is identical with *how things really are* [metaphysically, in this or that regard]."

The erroneous view [typically brought about by claiming the *a-priori*-sanction of reason for how one happens to be affected by contents in cognition – mainly, in *experience*]: The singular term "the metaphysical scenario which is true if human reason has *its way*" [in short: "how things are if human reason has *its way*"] and the singular term "the metaphysical scenario which is true" [in short: "how things really are"] are, in effect, taken *to have the same meaning*, are taken to be *synonyms* (and thus there would really be no basis for calling the first "the first-intended, penultimate answer [to the question asked]" and the second "the second-intended, ultimate answer").
As a consequence, it cannot logically be otherwise than that *the prima facie rationally desired-to-be-true assumption* (see above) is true – quite independently of *which* scenario is in fact the metaphysical scenario that is designated by the one and by the other of the two singular terms; *and* it cannot logically be otherwise than that the metaphysical scenario which is true if human reason has its way *is true* (given only that the definite description "the metaphysical scenario [regarding this or that] which is true" refers to something that fits its meaning [i.e., has it meaning-intended unique reference].

The correct view: The singular term "the metaphysical scenario which is true if human reason has *its way*" [in short: "how things are if human reason has *its way*"] and the singular term "the metaphysical scenario which is true" [in short: "how things really are"] are taken to have *not* the same meaning; are taken to *not* even contain logically equivalent descriptions of what they refer to.
As a consequence, *the prima facie rationally desired-to-be-true assumption* can, logically, be true, and it also can, logically, be false. Which of the two – true, false – it *in fact* is depends on *which metaphysical scenario is true* – *what* must be, for epistemological reasons, *moot* among human beings (whereas it is certainly *not* moot, for epistemological reasons, among human beings – *not* according to *the correct view* – *which metaphysical scenario is true if human reason has its way*; or so *I* say).

6 What am I?

In what follows, for the purposes of what is said in this chapter, the first-person perspective is important, but it is not important that it is *my* first-person perspective – though it happens to be *mine*.

At any time when I am awake, I am at the center of infinitely many concentrical spheres in physical space. Infinitely many straight lines issue in every direction from the place where I am at any time when I am awake: from the center of those spheres. Everything I, just using my eyes, look at at any time is, at that time, on exactly one of those lines; or speaking more precisely: at any time I look at something, every point on the by-me-looked-at surface of the by-me-looked-at object is on exactly one of those straight lines, in other words: it is in a certain spatial direction at a certain distance from me. This is no less true when I look at parts of my body than when I look at something that is "further out there".

28. If I look at time *t* at something *far away*, then the speed of light, being a definite *finite* – though very large – quantity, cannot be neglected (or in other words: cannot be taken to be infinite). Let *y* be a *far-away* object at which I look at time *t* [say, an object far away enough for neglecting that there is a difference between the object I look at and whichever point on its surface I look at]; *y* is not at *t* where I, at *t*, see it is: at *this* distance, in *this* direction; rather, it *was* there so-and-so many minutes, days, years ago.

If all this is true – and it seems to be undeniable that it is true – *what* am I (not in detail, of course, but in the ontological generality that *the details* fit into)? For the sake of definiteness, suppose I am aiming a rifle at a certain point on the surface of a target. It is easy to add *big drama* and, with it, great moral significance to the situation. And though it is (to the extent it concerns *me*) entirely fictive, I *should* add – it is proper that I add – *the drama*. I should do so – and I will do so – in order to make more *palpable* the partial answer to the question "What am I?" that has *already* been given in this book (namely, from the point of view of what, in metaphysics, human reason likes best according to human reason's first intention – and seeing no real need to let its second intention be different from its first): I am an actual human being, made actual and making actual [thus belonging to origination-category (C-III): *secondary-actual causing*], and I am a *person*: an individual with intellect and free will [personhood, intellect, free will – all three for humans, hence for me, of more or less *middle* degree], as a *person* capable of freely willed deliberate immediate action; no doubt, I contribute – less

significantly than others, more significantly than others again – to the actualization of w_0. All of this is here, at this point in the book, already supposed to be true not only of me but of all actual human beings, *some* of whom actually went through *the drama* (or something rather like it) that – involving *me* as central protagonist – is *purely fictive*:

Suppose, then, I am aiming a rifle at a certain point on the chest of a man charging toward me with a firing revolver in one hand and a long knife in the other, evidently ready to take my life – *which* I am not ready to lose. I aim the rifle properly and accurately, and therefore, at the moment when I pull the trigger [the pulling of the trigger being an *actuality-prolongation* of a *freely willed deliberate immediate action of mine*; the analyses of both concepts can be found in Chapter 4], there is a straight line in space at one end of which is the point that I aim at on the man's chest, and at the other end of which is the point *where I am*. *What* am I, then? Can it be that *I* – *now* – occupy *exactly one* point in space?

It is of no great avail that the straight line in question is, after all, not a straight line *in the mathematical sense*, and that its endpoints are, after all, not points *in the mathematical sense*. For even if "my end of the line of fire" is not a mathematical point but a very small three-dimensionally extended region of space, it is for many philosophers (today) a perfect metaphysical absurdity that *I* might be in that region. To be sure, *something* does – *now* – precisely occupy that region and is, therefore, *there*. This something is a small piece of my body, consisting of comparatively few cells, all of which, I suppose, are brain cells; this piece of living organic material is certainly not *me* (the number of interconnected neurons in it is far too small, even for materialists, to make plausible the idea that *I* am that piece of living organic material).

Thus, since the said spatial region is *the region where [in which] I am* when I fire the shot, and the said piece of my body is also *there* when I fire the shot, I must be *there in addition* to that piece of my body. But how can this be?

There is a tacit assumption here that needs evaluation. That assumption is the assumption that if I look at something at a given time – say, aim a rifle at it –, then I am, at that time, at the place from where I look at it. This assumption is not always correct: Suppose I aim a rocket at some vehicle (i.e., at a small area on the vehicle's surface) but the rocket is attached to a camera-eyed drone which is from a great distance remote-controlled by me – who, in some bunker under the ground, is looking at a computer screen, joystick in hand. I am looking at the target from the point of view of the drone's camera-eye, but I am not at this point

of view. Yet, *in the above-described situation* (me aiming a rifle at a man who charges toward me with the evident intention to kill me), the assumption in question seems to be correct; no remote control is involved. Still, one might suppose that even in that situation I am somewhere else than at "my end of the line of fire" – or, perhaps, *nowhere*. However, this supposition – my being somewhere else or nowhere – seems arbitrary or implausible in that situation. The non-arbitrary and most likely to be true assumption in that situation is, indeed, this: If I look at something at a given time, then [since there is no good reason to suppose that it is not so] I am, at that time, at the place from where I look at it.

Proceeding on this assumption and accepting that "my end of the line of fire" is a very small three-dimensionally extended region of space from where I look at my target, I conclude that I am *there*. And there are two modes for my being *there*, for my being *in that region*, for my being *at that place*: *precisely* or *imprecisely*. *Precise* spatial location must interest us whenever *precise* spatial location is available – and it seems to be available here. Accordingly, I turn to *precise* spatial location (which, really, has been the concern and topic here all along, though tacitly). The only option for my being *precisely there*, for my being *precisely in that region*, for my being *precisely at that place* is this: I (at the time in question) *precisely occupy* "my end of the line of fire" – *notwithstanding* the fact that a small piece of my body, a piece which is *not* me, already precisely occupies "my end of the line of fire" (as we have seen). How, then, can *I* be there, too? The conclusion is unavoidable: I am an *immaterial* individual that precisely occupies the said region in a manner fitting for *immaterialia*: a manner that does not involve material extension and material parts (neither of which I have, being *immaterial*), which therefore does not get into conflict with the manner in which the said small piece of my body is precisely in the said region.

It is helpful to offer a bit of *philosophy fiction* to demonstrate the thinkability of my having a precise spatial location even if I am an immaterial individual. Suppose my body all of a sudden simply disappears: where it formerly was, there is empty air; yet I have not ceased to be conscious. Though all tactile and intracorporeal sensations have ceased, I still have visual and acoustic experiences, in visual/acoustic content and form in unbroken continuity with the visual and acoustic experiences I had when I still had a body. But when I look "at me", directly or in a mirror, I see nothing; nor, indeed, does anybody else see "me". I have all my memories, and I can think and express my thinking; I can, for example, ask questions (mainly, of course, the question "How could this happen to me?"). But I can put the questions only si-

lently to myself (and perhaps to other bodiless listeners), not to any other living human being (*not* with any hope of being heard); for I have lost the ability to communicate physically, and indeed every other ability of "robust" physical action. Still, I can "move" about: change my position in space – of course, without any displacement of air or water or other material; to my delight, I can now "move" to places I never would have dreamt to be at when I still had a body.

In short, I have become physically a *mere point of view in space* (so to speak), but one that is conscious and in "motion".

29. My being unable to act physically in a robust way is not an indisputable *conditio sine qua non* of my being an immaterial individual, but it is an indisputable *conditio sine qua non* of my being physically [*not* also mentally] *a mere point of view in space*.

As such a "point of view", I do, of course, have a spatial location at any time of my new – entirely bodiless – life, a spatial location that may even consist in a three-dimensional spatial region (and not literally in a spatial point) *although*, being obviously an immaterial individual, I have no material extension and no material parts.

30. If my spatial location is a three-dimensional spatial region, then it cannot be my spatial location in virtue of my (precisely) occupying it *in the same manner* as it is (precisely) occupied by a small piece of my body; for, *given* that I am an immaterial individual, I, unlike that piece, have no material extension and no material parts. I must occupy that region, then, *in a different manner* if it's to be my spatial location (at the given time). What might be this manner? Presumably it is this: I am simultaneously *wholly present* – present in entirety, not just in part (quite unlike the body-piece) – at each spatial point belonging to the region, and I am simultaneously *wholly not present* at any spatial point not belonging to the region. Presumably, this manner of being localized in space (at a time) is the manner fitting for *immaterial* individuals; in view of what has been set forth in this chapter so far, it would be very rash to assert that, on the contrary, immaterial individuals cannot be localized in space *in any manner*. (There are, of course, follow-up questions: Could I be simultaneously wholly present at separated spatial points without my being simultaneously wholly present also at each spatial point on the straight line between them? Could I be wholly present at just one spatial point? I don't know the answer to either question, but I feel inclined to answer the first question with "No" and the second with "Yes".)

The story told above, of my disembodiment, is philosophy fiction, not meant to describe how the World, w_0, is, but meant to demonstrate that my disembodiment *together with my being localized in (physical) space* is coherently conceivable. If one does not accept certain

near-death-experiences many people sincerely claim to have had, as being veridical, non-hallucinatory, *then* no truth about this world, w_0, the actual world, comes near to what is being told in that story – quite in contrast to the story preceding it, the one about my aiming a rifle in self-defense, which is a perfectly realistic story, though not true of *me personally* (and hopefully it stays this way: not true of me personally). This latter story – coming first in this chapter – led to the insight that I am an actual immaterial individual, hence an actual immaterial person (since the actual individual that I am is an actual person), *capable* of what an actual person – an actual individual with intellect and free will – is capable of, namely, freely willed deliberate immediate action, *and acting accordingly*: in primary actualization and subsequent actuality-prolongations (one of which is the stopping of my would-be-killer).

Thus, according to the first story in this chapter, I am *not* "physically the mere point of view in space" that the second story in this chapter presents me as having changed into by undergoing a truly radical metamorphosis. (Yet according to both stories, I am an immaterial individual, conscious and capable of motion [in the broadest conception].) According to the first story, I am [*human*-]*body-bound*, while according to the second story I am not. (But the two stories are *compatible* since, obviously, they refer to separate phases of my actuality.)

What is it like to be a *body-bound* actual – and active – human person that is an immaterial individual? In phenomenological description, *my* consciousness of that perfectly normal state, of its salient points, can serve as a paradigm for the *general* human consciousness of that perfectly normal state, its message being verifiable in their own consciousness by all introspecting human beings. The phenomenological description of *my* consciousness

- displays me as [being conscious of] inhabiting a human body (*not* as being a human body), it being a sort of "mobile home" for me (the "mobile home" absolutely closest to me: enveloping me), a vehicle, a movable watchtower and observatory, a "space-ship" – which I, for all I know, am quite unable to leave and stay alive (i.e., conscious);
- displays me as [being conscious of] using that same human body – in countless ways – as a causal instrument: for achieving the actuality-prolongations, as intended by me, of my freely willed deliberate immediate actions;
- displays me as [being conscious of] being united with that same human body *so closely that* damages to it or shortcomings in the maintenance of it are very often (but not always!) experienced by me as damages to *me* or shortcomings in the maintenance of *me* (see the various experiences of "physical" pain, "physical" dis-

comfort); *so closely that* its needs are very often (but not always!) experienced by me as *my needs* (see the experiences of hunger, thirst, sexual craving, tiredness, and other bodily needs); *so closely that* the fulfillments of those needs are very often (but not always!) experienced by me as *my fulfillments* (see the various experiences of "physical" pleasure, "physical" relief).

Neurophysiology, moreover, reveals a far-reaching *nomological dependence* [dependence based on laws of nature] of me and my consciousness [i.e., of the actuality-prolongation that results in the continued actuality of me and my consciousness] and of my causality [i.e., of the actuality-prolongations that come from, go out from my freely willed deliberate immediate actions] *on* my body, and especially *on* my brain.

Thus, if I ever were actual with consciousness and causality *without my body* (it being either dead or not there at all), it would be like a candleflame that burns *without a candle* [burns on and on, continually, in the place where it would also burn with candle]. And yet, it is undeniable that this is *logically* possible: my being actual with consciousness and causality *without my body*, no less logically possible than the burning of a candleflame *without a candle*. If this logical possibility were actual, it would, indeed, be *a miracle* – which fact is sufficient reason for the self-appointed guardians of scientific rationality to conclude that the alleged logical possibility is, after all, no such thing, or, if it be grudgingly acknowledged to be a logical possibility, to conclude that at least *somehow or other* it just *cannot be actual*; in any case, *miracles* are for them, in their faith, anathema. But we shouldn't forget: *first*, everything contingently actual is logically possible – not less *and not more* logically possible than the burning of a candleflame *without a candle*, not less *and not more* logically possible than my being actual with consciousness and causality *without my body*; and *second*, everything contingently actual is, ultimately, *a miracle* – irrecusably – in its possibility-fulfilling actuality; for it is humanly impossible to understand and explain the origination of this actuality in a way that is *complete and perfect*. – This much should be clear from the preceding chapters, even though they do (do they not?) *contribute* to understanding and explaining the origination of actuality.

7 Is it true that what is nonphysical cannot cause what is physical?

This much can be gathered so far: Human reason, following what is most pleasing to its nature, arrives, assisted by human experience, at the conclusion that we human beings are [*human*-]body-bound immaterial actual individuals with intellect and free will, capable of freely willed deliberate immediate action – and, no doubt, exercising this capability (though, fortunately, not usually in situations that are as dramatic as the one envisioned in the preceding chapter).

Though this conclusion – call it "the Rational Anthropology" – is favored by experience-assisted human reason, yet it is possible that it is not the metaphysical truth. As has been seen in the preceding chapters, the options that are in principle – i.e., logically – viable *proliferate*, and there is no way of absolutely excluding them. Thus, though experience-assisted human reason favors *the Rational Anthropology*, it still needs a leap of faith to adopt it; it is far from being forced upon us, so to speak, *rationally-ultimately*. (Its competitors, however, are not in a rationally better position.)

Indeed, there is no lack of people who believe that the – some of them may carp: "misleadingly so-called" – Rational Anthropology is false, believe it to be false also under any other name for it: believe to be false *in substance*; who believe that its falsity is an unavoidable consequence of the results of (modern) *natural science* – which results, they believe, are honored by them, *not* by any defender of the Rational Anthropology; which "theory", they believe, can only be the product of irrational, anti-scientific motives. The present chapter is dedicated to examining this belief and to drawing it into question; more specifically, it is dedicated to criticizing highly popular, widely accepted arguments that are directed against a certain consequence of the Rational Anthropology (and thereby, of course, against this anthropology itself): the existence of *nonphysical causation*.

How is nonphysical causation – its existence – a consequence of the Rational Anthropology? But first of all, *what* is nonphysical causation? – The answer is clear: *Nonphysical causation is making-actual by an actual nonphysical entity* [or put in a logically/analytically equivalent way: *Nonphysical causation is causation by a nonphysical cause*].

31. Note that "nonphysical" is an *ontological category*: the negation of the ontological category "physical"; thus, if an entity is nonphysical *when [at the time]* it is making something actual (usually, as in my own case, doing this neither always nor necessarily), then (still) it is *always* nonphysical and *necessarily* nonphysical. Ontological categories are, qua *ontological*, *always true* and *necessarily true* of what they are *true at least once*.

Now (beginning to answer the initial question in the paragraph preceding note **31**), *being nonphysical* logically [analytically] entails *being immaterial*; but *being nonphysical* is [logically, conceptually] something more than just *being immaterial*; for example, a portion of empty space is immaterial, but it is not nonphysical. Yet, when the Rational Anthropology claims that we human beings are immaterial, there is, in this instance, no plausible reason for furthermore asserting that we are immaterial *but*, nonetheless, *physical*. Thus, in all actual human beings (in *us* human beings), as they are taken to be in the Rational Anthropology, immateriality and nonphysicalness *coincide*. Moreover, the nonphysicalness and immateriality intended in the Rational Anthropology *is not* the nonphysicalness and immateriality of *abstract* entities; the intended nonphysicalness and immateriality is, at any time of our conscious lives, a *spatially located* nonphysicalness and immateriality: it is our being, at any such time, each at *one* definite place in *physical* space – our being nonphysical and immaterial *notwithstanding* – in a manner of precise occupation of space that is different from the manner of precise occupation of space in which our *bodies* are at the same time each at one definite place in physical space, too. (For a detailed illustration of *such* nonphysicalness and immateriality, see the preceding chapter.) In view of our close connection to our bodies, which is no less a claim of the Rational Anthropology than our immateriality (for details, see the preceding chapter), one might even consider calling me and all other actual human beings "physical", though only in a quasi-metaphorical, complexly analogical sense, comparable with the sense in which one speaks of "physical [or: bodily] sensations", "physical [or: bodily] pains", and "physical [or: bodily] pleasures".

32. What is meant here by the expression "actual human being"? An actual human being is an actual person that inhabits ["has"] a human body – whatever "human body" exactly means – *without* the person being able to make actual – to cause – that it inhabits a nonhuman body, or another human body, or that it is actual and inhabits none of the bodies. (Note that one's being unable to cause something does not logically entail that this something – or, indeed, the causing of it [by some *x*] – is *impossible*: is [in the strictest sense] necessarily not actual.) The inhabiting of a human body, in turn, is a matter of experiencing that body – which is quite different from experiencing bodies one does not inhabit. Especially prominent among the several differences, there is

this one: I, an actual human being [an arbitrary example of one], experience my body – the human body I inhabit – as the first and unskippable and, normally, functioning ["obedient"] causal instrument for achieving the actuality-prolongations, as intended by me, of my freely willed deliberate immediate actions.

It is a minor logical anomaly that *human persons* are not "automatically" – i.e., in virtue of trivial logical entailment – *human beings*, considering that *persons* are "automatically" *beings* [entities]. But in the context of "human being", as this composite count noun is used in the English language and as it is used here, the word "being" – used as a count noun – takes on a meaning that is somewhat richer than the mere meaning of the count noun "entity" [of which "being" – used as a count noun - is *normally* a synonym].

Proceeding on the Rational-Anthropology-assumption that the actual human beings are – in the way described – nonphysical entities, there is nonphysical causation as defined by the above-presented definition [namely by: *Nonphysical causation is making-actual by an actual nonphysical entity*], because, being a second cause, every actual human being (you and me and every other human being) makes actual something (thereby contributing to the actualization of w_0), as has been determined, already in Chapter 3, to be a part of the metaphysical scenario which, *in itself*, is most pleasing to human reason *in itself* [as the rational distinction of that scenario can *also* be expressed, in addition to the already given way of expressing it]. More specifically, as part of the Rational Anthropology, every actual human being is actualizer of some freely willed deliberate immediate action, and thereby, according to the amended law of actuality-prolongation (see Chapter 4), also actualizes *many*, though presumably not all, actuality-prolongations of that action. Quite often, evidently, even if the freely willed deliberate immediate action is not itself a physical entity (and as a physical entity typically a physical *event*), some actuality-prolongation of it, caused by the human agent "in prolongation" of the immediate action, is bound to be a physical entity. Thus, according to the Rational Anthropology, there is not only nonphysical causation (by actual human beings), but also nonphysical causation (by actual human beings) *of something physical*.

How might one successfully attack the existence of nonphysical causation, and thereby the Rational Anthropology (and, behind the Rational Anthropology, the truth of the metaphysical scenario which is most pleasing to human reason *according to its [human reason's] first intention*, or in other words: which, *in itself*, is most pleasing to human reason *in itself*)? To topple the Rational Anthropology, it would already be sufficient – as seen just now – if one successfully attacked the existence of nonphysical causation *of something physical*. And how might one do that?

The prospects are not good. The interpretation of "*x* causes *y*" as "*x* [being actual] makes *y* actual" gives no indication whatsoever *why it should be necessary* [in the strictest sense: the only true, objective sense of "necessary"] that if these predicates (or "open sentences") are true of *x* and *y*, that then *x* is a physical entity; or at least: that then *x* is a physical entity *or y* not a physical one. Why should it be *necessarily excluded* that the actualizer in an actualization is nonphysical? Why should it be *necessarily excluded* that, in an actualization, the actualizer is nonphysical and the actualized physical? After all, as has been made clear, we are *not* talking here about the necessarily causally impotent nonphysicalness of abstract entities, of propositions or numbers, say.

Perhaps because only causation by physical causes can be understood by us human beings? But, actually, that a *physical* entity *x* makes *y* actual is not better understood by us than that a nonphysical entity *x´* makes *y´* actual, not even if both *y* and *y´* are physical entities. At best, conscious experience presents us with a pair of actual entities in both cases and with an "impression of causation", nothing more; the rest is metaphysical interpretation, of which there are many ways, none of which can claim to be "certainly right" or even "right enough", not even the one that is, *in itself*, most pleasing to human reason *in itself* (or: most pleasing to human reason *according to its first intention*).

33. But do we not actually *see* causation when one billiard ball hits another? – It is not really causation ["*z* causes *z´´´*"] we have to do with here, it is actuality-prolongation ["*z´* is an actuality-prolongation of *z*"]. Admittedly, some will want to call all actuality-prolongation "causation", and some will even want to have "*z* causes *z´´´*" as a synonym of "*z´* is an actuality-prolongation of *z*"; but no matter how actuality-prolongation is called, there is a *heavily metaphysical* constituent in its conceptual build, a constituent we certainly do not and cannot *see* or otherwise sensorily perceive in any instance of actuality-prolongation we encounter, but merely can *assert to be there* – which constituent, to boot, we merely know *in outlines*. This constituent, underlined for convenience below (by underlining its name), is obvious from the definition of actuality-prolongation given in Chapter 4: The actuality-prolongations of something, *x*, that is actual are the instances of being actual that are *logically* ["automatically"] *consequent* to the actuality of *x* – *provided* they are different from *x* and not in themselves necessary as actualities – *on the basis* ["with the underlying premise"] of *the nomological structure* [of the World], different from *x*, *enhanced* by the actuality of *whatever else* [different from *x* and *the nomological structure*] is *already* ["to date"] given as actual.

There is a metaphysical stance, attractive today to many and already very common (and becoming more common every day), which, once it is accepted, makes the rejection of the

nonphysical causation of something physical, and the rejection of *all* nonphysical causation, very easy; for, on its basis, these rejections are no more than trivial logical conclusions. Accordingly, the perfect advice for those who want an easy way – not only logically but also *socially* – to the rejections in question is this: Simply assume that every actual entity is physical; adopt the stance of *general physicalism* (the modern form of materialism); if every actual entity is physical, then every *cause* is physical, since every cause is an actual entity; and hence there is no nonphysical causation [i.e., causation by a cause that is not physical], and a fortiori no nonphysical causation of something physical.

General physicalism, it is often claimed, is part and parcel of the metaphysics of natural science – or, indeed, is claimed to be a well-confirmed *scientific* tenet, a tenet of science itself, not of metaphysics. From the point of view of the Rational Anthropology, general physicalism is just false, and false *without* any detriment – metaphysical, scientific, or otherwise – to science. The quasi-phenomenological argument for *my* (and by implication: *your*) being an *immaterial* actual entity, hence also for *my* being a *nonphysical* actual entity (since there is, regarding actual human beings, no plausible reason for taking them to be immaterial *yet* physical), has been given in Chapter 6. I here append an argument with a quite different character, but with the same conclusion. The roots of that argument are in the works of Descartes; because of this, it might be called "historical" (although it cannot be found in Descartes's writings quite in the form that it is here presented in), and also because the influence of it – or of its "spirit", rather – on later thinkers has been so huge (just think of the dominance of idealism in the 18th and 19th century):

[Deduction 7.1]
(1) It is possible that I am an actual being *and* no physical entity is an actual being. [Premise]
(2) It is possible that I am not a physical being. [Logical consequence of (1)]
(3) For any *x*: if *x* is a physical being, then it is necessary that *x* is a physical being. [Premise]
(4) I am not a physical being. [Logical consequence of (3) and (2)]
(5) I am an actual being. [Premise]
(6) I am a nonphysical actual being. [Logical consequence of (4) and (5)]

The logic employed in this deduction – call it "the Neo-Cartesian Argument" – is, in the first step of the deduction, genuine *modal* logic, but it is perfectly elementary and unproblematic

modal logic. Indeed, the entire logic of the Neo-Cartesian Argument is correct "beyond reasonable doubt"; it is *unassailable*. Thus, criticism of the argument must focus on its three premises.

The third premise (see (5)) is certainly true. Whoever may want to doubt its truth, let him or her doubt it; *I* can't (and *you* can't either – when "I", used by *you*, refers to *you*, as "I", used by *me*, refers to *me*; *we* may call this "the Cartesian insight").

The second premise (see (3)) asserts nothing more and nothing less than that "*x* is physical" is a *predicate for ontological categorization*, hence a predicate – cf. note **31** – that is true *necessarily* of whatever it is true of (as are, for example, also the predicates "*x* is a number", "*x* is a property", "*x* is an individual"). The necessity involved in the premise is the only [true, objective] necessity there is: *strictest necessity* (see the *Humean Confession* in Chapter 2), and it is taken to be strictest necessity qua *(broadly) logical* [or: *analytical*] *necessity*, which is the preferable kind of strictest necessity here – in fact, the only highest species of it that is at all known to us humans (cf. the remarks concerning "dark necessity" in Chapter 2, note **5**; it is as likely as not that there is no "dark necessity"). There is, however, no need to conceive of logical necessity in the very anthropocentric manner it is usually conceived of. Logical necessity is *not* a projection of the human mind, *not* essentially bound up with human language; rather, it is a (species of) true, objective necessity, and would still be around, would be instantiated just as it is instantiated, if there were no human beings and human languages at all.

34. No doubt, "logical [or: analytical] necessity", though it is a *familiar* and *usual* name for that necessity (and, due to its usualness and familiarity, is the *predominant* name for that necessity in this book), is not a very good name for it, since "logical necessity" misleadingly suggests that language and (human) thought are indispensable foundations of the necessity in question; "*per-se*-necessity" would be a better name for it, and, accordingly, "per se necessary" a descriptively more adequate general term than "logically necessary". *Per-se*-necessity consists in this: a state of affairs, or a proposition, no matter whether the state of affairs is *stated* in language or not, whether the proposition is *expressed* in language or not, whether state of affairs or proposition is an object of thought or not, *already in virtue of itself* [no need of anything outside of it] possesses actuality [if we are dealing with a state of affairs], respectively truth [if we are dealing with a proposition], *or* possesses actuality, respectively truth, *already in virtue of another state-of-affairs, respectively proposition,* [no need of anything else] *that already in virtue of itself possesses actuality, respectively truth*.

That "*x* is physical" – having the meaning we in fact attribute to it and being employed in (3) as it is in fact employed – makes (3) true is rather more believable than not. What strongly suggests itself to human reason, and to *us*, is this: If something, *x*, is physical, then (the actuality of) *x*'s being physical is not a matter of contingent causation (if that actuality has an origin) or of chance (if, and only if, that actuality has no origin); *rather*, *x*'s being physical is either in itself [or: intrinsically-to-itself] necessarily actual [*in other words*: it is in itself necessary], or *x*'s being physical is necessarily made actual by something and is, for *this* reason, necessarily actual [*in other words*: it is, for *this* reason, necessary]. I do not see how these considerations could go wrong.

35. Concerning the twice occurring "*in other words*" in the preceding paragraph: "*x*'s being physical is in itself necessarily actual" and "*x*'s being physical is in itself necessary" are synonymous predicates; and synonymous predicates are, of course, also "*x*'s being physical is necessarily actual" and "*x*'s being physical is necessary" (with no "in itself" in them). Synonymous, in turn, with these latter two predicates are the following: "the physicalness of *x* is necessarily actual", "the actuality of the physicalness of *x* is necessary", and "the physicalness of *x* is necessary" – and, indeed, not only these three predicates but another three in addition, in consideration of the trivial *salva-significatione*-replaceability of "the physicalness of *x*" with "*x*'s physicalness". These linguistic phenomena are due to two general linguistic facts that are conveniently described by two schemata: (i) "*x*'s being *F*", "*x*'s *F*-ness", "the *F*-ness of *x*" are synonymous designations for the very same state of affairs: the state of affairs that *x* is F; (ii) "*N* is necessary", "*N* is necessarily actual", "The actuality of *N* is necessary" are synonymous expressions [and so are the three expressions that result from the three just presented ones if "necessary/-rily" is replaced in them all with "contingent/-tly", and also if it is replaced in them all with "possible/-bly"]. Note that the negations of two synonymous expressions are synonymous as well.

The actuality of *x* and the actuality of *x*'s being physical must be held apart, also in the following respect: It *is* possible that *x*'s being physical is actual *and x* is not actual. If one is aware of this being possible, one will not experience difficulty in holding together that (a) *x* is actual and the actuality of *x* is not necessary (as will often be the case), but that (b) [the actuality of] the physicalness of *x* is necessary – according to (3), because *x* is physical (and this, too, will often be the case). (It is a logical consequence of (a) and (b) that it is possible that *x*'s being physical is actual *and x* is not actual.)

If its second premise – i.e., (3) – is *the pivot* of the Neo-Cartesian Argument, *its crux* is certainly its first premise, i.e., (1). Just how plausible this first premise is can be seen from the fact that it enunciates, from the first-person point of view of the skeptic, what must be true if skepticism regarding the actuality [the "existence"] of *the external world* is *rational*, i.e., *rationally permissible*, *rationally acceptable*; and as everyone knows who is versed in episte-

mology (or in the history of philosophy and is ready to take a clue from it), and as everyone implicitly knows who begins to think *philosophically*: external-world-skepticism is a player to be reckoned with; it is *rational – rationally permissible* (though it is of course not rationally obligatory).

Unlike ontological idealists, external-world-skeptics do not claim that the so-called external world is not actual [does not "exist"], that is: they do not claim the non-actuality of the *physical* totality of *physical* entities (*physical* in the full, proper, generally accepted sense) which is (a large) part of the (entire) ontological content of the World. They merely *doubt* that the external world – or in other words: the *physical* world (*physical* in the full, proper, generally accepted sense) – is actual. Typically, this is merely an intellectual doubt, not an "existential" doubt, not a doubt that pervades the entire person. Clearly, for this doubt to be rational, it is logically required that it be rational to have this doubt for any person who (in fact) has it, and for its being rational to have it for a person who has it, it is logically required that it be *possible* that this person is an actual being *and* no physical entity is an actual being. Consequently: If it is rational to doubt that the external world is actual, and person N.N. has this doubt, then it is rational for N.N. to have it, and hence it is *possible* that N.N. is an actual being *and* no physical entity is an actual being.

As has been touched on in the second-to-last paragraph: that it is *rational* to doubt that the external world is actual, does not mean that it is *rationally obligatory* to doubt (let alone deny) that the external world is actual; it merely means that it is *rationally permissible* to doubt that the external world is actual. In this sense, it is certainly true that it is *rational* to doubt that the external world is actual; and some people certainly have or had that doubt. This being so, it follows, as already explained, that it is *possible* that the doubting person is an actual being *and* no physical entity is an actual being. And it follows that it is *possible* that *I* am an actual being *and* no physical entity is an actual being: though I am far from being a habitual external-world-skeptic, I (and I suspect: most people) can easily move into the stance of external-world-skepticism (and, just as easily, move out of it again) – while my experience of physical objects (as objects of my [Husserlian] intentionality) continues without any disruption or anomaly whatsoever. Moreover, even if I never went myself into the mode of external-world-skepticism, never had myself the doubt that defines that skepticism, I am ontologically so similar to someone who is or was an external-world-skeptic that the follow-

ing situation *does not arise*: whereas it is *possible* that the skeptic is actual *and* no physical entity is actual, it is *impossible* that *I* am actual *and* no physical entity is actual.

But, in fact, to give the first premise of the Neo-Cartesian Argument a rational justification (precisely speaking: a rational permission, a "permit of rationality"), it is not necessary to call for the aid of external-world-skepticism and its rationality. Just consider what is involved in *denying* that premise:

"It is possible that B" is logically equivalent to "It is not necessary that not-B". Thus, since "necessary" – following the *Humean Confession* – means "necessary *in the strictest sense*" [correspondingly, "possible" means "possible *in the widest sense*"], *denying t*he first premise of the Neo-Cartesian Argument amounts to asserting that it is necessary *in the strictest sense* that I am not actual *or* some physical entity is actual. How could this be true? For one thing, it would be true if it were necessary [in the strictest sense] that I am not actual – which is just absurd (subjectively, in view of the obvious actuality of me *for me*; and also objectively, for how could I still not be actual when I am, no doubt, actual *for me*?); for another thing, it would be true if it were necessary [in the strictest sense] that some physical entity is actual.

36. "*Some* physical entity is actual" is the logically sufficient and necessary condition for "The external world is *at least in part* actual" [i.e., "The physical totality of physical entities which is part of the ontological content of the World is *at least in part* actual"], and therefore, "*No* physical entity is actual" is the logically sufficient and necessary condition for "The external world is *not even in part* actual" – which latter sentence says (means) precisely the same as what is said (meant) by "The external word is not actual". A logical consequence of this is that "The external world is a*t least in part* actual" [of which "The actual world is *not even in part* actual" is the negation] means precisely the same as what is meant by "The external world is actual" [of which "The external world is not actual" is the negation], and furthermore we can conclude that "Some physical entity is actual" is the logically sufficient and necessary condition for "The external world is actual". It follows that "It is necessary that some physical entity is actual" is the logically sufficient and necessary condition for "The external world is necessarily actual".

Now, *some*, no doubt, will not hesitate to give to the proposition that some physical entity is actual the same logical status as to the proposition that the number 1 is actual, i.e., the status of positive or negative necessity: necessarily true or necessarily not true. But, although this move is not an absolute rational no-go, it is not a rationally attractive move, either. If it were *necessarily not true* that some physical entity is actual, then it would be *necessary* that every physical entity is not actual; but, of course, it seems possible, indeed true, that some

physical entity is actual. Thus, for all we know, it is *not* necessarily not true that some physical entity is actual. And it does not seem to be *necessarily true* that some physical entity is actual, either; rather, this proposition appears, rather robustly, to be *modally undetermined*: to be *neither* necessarily not true *nor* necessarily true.

Of course, logically, it does not follow that "It is necessary that not-C or A" is *not* true when neither "It is necessary that not-C" is true nor "It is necessary that A". Logically, "It is necessary [in the strictest sense] that I am not actual or some physical entity is actual" – which is a logical equivalent of the negation of the first premise of the Neo-Cartesian Argument – might be true although neither "It is necessary that I am not actual" nor "It is necessary that some physical entity is actual" is true. It would be true if my being actual *necessitated* [in the strictest sense] that some physical entity is actual *non-trivially*. But how might my being actual *non-trivially necessitate* that some physical being is actual?

Prima facie there seems to be no such connection between the two states of affairs. And yet, one thing that could establish the non-trivial connection of necessitation between the two is obvious once it is supposed, as a premise, *that I am necessarily a physical entity*; for "It is necessary that I am not actual or some physical entity is actual" follows logically from "I am necessarily a physical entity": Suppose – *not* as it is supposed in the Neo-Cartesian Argument: *not* as a premise, but as an assumption for *reductio* – that it is possible that I am actual *and* no physical entity is actual; but given (as a premise: as a variant formulation of the above-stated premise) *that it is necessary that I am a physical entity*, it follows by elementary modal logic that it is possible that I am actual *and* a physical entity *and* no physical entity is actual – which is a (modal-)logical contradiction. Thus, the negation of the initial supposition [of the *reductio ad absurdum* just presented] must be true – *given*, as a premise, that I am necessarily a physical entity. And thus, *on the basis of my being necessarily a physical entity*, it would *non-trivially* turn out to be necessary that I am not actual or some physical entity is actual, or in other words: *on the basis of my being necessarily a physical entity*, my being actual would, indeed, *non-trivially necessitate* that some physical being is actual [since *on that basis* it would *non-trivially* turn out to be *necessary* that my being actual "materially implies" that some physical being is actual].

Does this constitute a refutation of the Neo-Cartesian Argument? It certainly does not; it merely means that one can make a certain assumption that negates the first premise of that argument. Is that assumption plausible? Hardly. Even certain physicalists, while having no

doubts about *our* physicalness, *deny* that any one of *us* is necessarily physical, and thus believe, via logical implication, that *I* am "merely" *contingently* physical: physical but not necessarily physical – whereby they get into logical conflict with the second premise of the Neo-Cartesian Argument; physicalists of that stripe have to deny *this* premise (whereas they need not deny the first premise of the Neo-Cartesian Argument).

The *Short* [or: *Naked*; or: *Essential*] Neo-Cartesian Argument is this:

[Deduction 7.2]
(1´) It is possible that I am a nonphysical being. [Premise]
(2´) If I am a physical being, then it is necessary that I am a physical being. [Premise]
(3´) I am not a physical being. [Logical consequence of (2´) and (1´)]
(4´) I am an actual entity. [Premise]
(5´) I am a nonphysical actual being. [Logical consequence of (3´) and (4´)]

The logic of the *Short* Neo-Cartesian Argument is just as impeccable as the logic of the ["Long"] Neo-Cartesian Argument. And everything that has been said above in favor of (1), (3) and (5) in the Neo-Cartesian Argument – in favor of that argument's premises – is said, logically implicitly, also in favor of (1´), (2´) and (4´) in the *Short* Neo-Cartesian Argument – in favor of this latter argument's premises; for (1´) is a logical consequence of (1), and (2´) is a logical consequence of (3), and (4´) is logically equivalent (even synonymous) with (5). Readers may ask incredulously: "Do you really believe that such a piece of trivial, shallow logic will convince any physicalists of the wrongness of their ways, with all of modern science, its success and fascinating depth and complexity, on *their* side?" The question – in its incredulity – is the result of a double misunderstanding, and is, therefore, misplaced: "void". First, the Neo-Cartesian Argument, both in its long and in its short version, does not aim to convince any physicalists of the wrongness of their ways; it aims to show that the metaphysical position which is opposed to the metaphysical position of the physicalists, i.e., to *general physicalism*, can hold its own against this latter position (and it certainly *can*). Second, the Neo-Cartesian Argument, both in its long and in its short version, does not contradict in any way, neither in its logic nor in its premises, any findings of modern science. The empirical discoveries of modern science and the sophisticated theories developed to explain and systematize those discoveries *do not* logically entail that the conjunction of the premises of the Neo-

Cartesian Argument is not true; what those premises have in their favor, in favor of their truth, is perfectly compatible with modern science – as long as modern science *is truly* what it is proudly proclaimed to be: *strictly empirical*.

The matter can be put as simply as *this*: If I am a physical entity, then I am either necessarily [in the strictest sense] a physical entity, *or* contingently. The *latter* alternative contradicts proposition (3), respectively (2´) [which is a logical consequence of (3)], which premises have a lot in their favor and nothing decisive against them; the *former* alternative contradicts proposition (1), respectively (1´) [which is a logical consequence of (1)], which premises, too, have a lot in their favor and nothing decisive against them. Thus, the conclusion that I am *not* a physical entity and, because I am certainly actual [as proposed by (5), respectively (4´)], also the stronger conclusion that I am a *nonphysical actual* entity, are well-supported conclusions.

Nonphysical and actual: *this* is part of what the Rational Anthropology takes me to be, and *this* is now established via the Neo-Cartesian Argument, in either version, after having been established in quite another way in the previous chapter; it is *established* to the extent anything can be "established" in metaphysics: as a rationally permissible option, and, no doubt (after all that has been said in its favor in this book), as an option that is *preferred* (to be true) by human reason *in its first intention* (that is, as an option which is true *if* human reason has *its way*). But the Rational Anthropology *also* takes me – a nonphysical actual being, but inhabiting a human body [which is *physical and actual*], thus being an actual *human* being – to reach beyond the nonphysical realm by *causing something physical* (see above in this chapter; illustration is offered in the previous chapter). This idea is vehemently opposed, as amounting almost to "superstition", by the self-appointed guardians of scientific rationality; they hold that *whatever causes something physical is itself physical*. *This*, the so-called "Principle of the Causal Closure of the Physical", they uphold as a *scientific* principle – which it is *not*; it is, *at best*, a well-founded principle of metaphysics. What is, however, indeed *scientific* is the following methodological rule (or: imperative): *In looking for the lawfully-sufficient antecedent condition of something physical and actual, look only among the physical and actual* – a very sensible rule, since the cognitive field of natural science, *qua* natural science, is only *the physical and actual*. The Principle of the Causal Closure of the Physical, in turn, is, so to speak, the metaphysical canonization – the ontological superelevation – of that meth-

odological rule. (*This* is the factual relationship between the two, but it is, of course, far from making the principle in question something that is well-founded by the rule in question.)

The Principle of the Causal Closure of the Physical [in short: PCC], if true, would suffice to topple the Rational Anthropology, since PCC negates a central part of that anthropology: by negating the nonphysical causation of something physical, it negates a fortiori that any human being – i.e., human person in a human body – is a nonphysical cause of something physical. Now, the truth of PCC is, contrary to what many believe, not a scientific certainty – and PCC is not a scientific principle. Nor is the truth of PCC a metaphysical certainty (to the degree certainty can be had in metaphysics). For, in addition to the evidence against PCC that we gather each day from our conscious and active lives (evidence that is entirely supportive of the Rational Anthropology, but evidence that many are convinced is perfectly illusory, *erroneously* believing that this conviction is what science requires of them), there is also a strong argument *in refutation of* PCC:

[Deduction 7.3]
(1´´) For all *y*: if *y* is contingently actual, then there is an *x* that causes *y*. [Premise]
(2´´) For some *y*: *y* is a physical entity and *y* is contingently actual and there is no *z* such that *z* is a physical entity and *z* causes *y*. [Premise]
(3´´ For some *y*: *y* is a physical entity and *y* is contingently actual *and there is an x that causes y* and there is no *z* such that *z* is a physical entity and *z* causes *y*. [Logically from (2´´) and (1´´)]
(4´´) For some *y*: *y* is a physical entity and *there is an x that causes y and x is not a physical entity*. [Logically from (3´´)]
(5´´) For some *x*: *x* is not a physical entity and for some *y*: *y* is a physical entity and *x* causes *y*. [Logically from (4´´)]

Obviously, (5´´) is logically equivalent to the negation of PCC (that is, logically equivalent to the negation of "Whatever causes something physical is itself physical"). Thus, Deduction 7.3., if it is faultless, *refutes* PCC. Now, Deduction 7.3 is *deductively* [logically] faultless – obviously so. If one wishes to find fault with it, one must attack its premises.

Its second premise (i.e., (2´´)) is the result of drawing an ontological – hence metaphysical – conclusion from an epistemic situation that has arisen within modern physics and that, to

date, has not been resolved: for certain microphysical actual events, which evidently are not in themselves necessarily actual, one has not been able to find, try as one may, anything physical and actual that is their lawfully-sufficient antecedent condition. It may, of course, lead to a mistake – to a falsehood – if one takes, here, the step of speculative extrapolation, namely: the step from that persisting epistemic situation in modern physics to assuming (2´´) as a truth (and Albert Einstein and others *did* refuse to take this step). However, the distance from physics to metaphysics is relatively small here: taking *the step* is suggested by quantum *theory* itself, by this central part of modern *theoretical* physics.

In fact, modern physics is widely taken not only to establish (2´´) but even to establish *the negation* of the first premise of Deduction 7.3, i.e., the negation of (1´´) (thus scandalizing conservative thinkers like Einstein and making them dissatisfied with modern physics): it is widely believed that modern physics establishes that there are contingently actual entities (namely, certain physical events) that are not caused by *anything*. Believing this, however, means that, on the way from modern physics to metaphysics, one has gone one step too far: assuming the truth of (2´´) quite suffices for adapting metaphysically to modern physics (its empirical findings and its theory). There is no need to assume, in addition, the falsity of (1´´), thereby spurning the metaphysical scenario which is most pleasing to human reason according to human reason's *first* – or: *penultimate* – *intention*: (1´´), the first premise of Deduction 7.3., is the Principle of Sufficient Cause [in short: PSC], which is part of the metaphysical scenario which is most pleasing to human reason according to human reason's *first intention*, and is indeed at the very heart of that scenario, in view of human reason's very strong interest in *explanation*.

Human reason's *second* – or: *ultimate* – *intention*, however, may be incompatible in content with its *first*, *penultimate* one. Indeed, *some* do not scruple to remove human reason's *first-intended or penultimate* favorite – the metaphysical scenario which is true if human reason has *its way* – from the position of being identical with the metaphysical scenario which is *true*; for this latter metaphysical scenario, they say, *negates* PSC. And human reason, they say [granting them the level of reflectiveness necessary for such articulateness], must – rationally – accept the true scenario and be *happy* with it, since what is *the truth* must, of course, be given its due, and must *gladly* be given its due. (Indeed: human reason's desire for *explanation* must – rationally – yield to human reason's desire for *truth* – *if* there happens to be a real conflict between the two desires; for the desire for truth is rationally paramount, and

the satisfaction of this desire is, *in the end*, most pleasing to human reason – *or* human reason is degraded to *non-reason*.) Thus, according to *them*, human reason's *second-intended or ultimate* favorite: the metaphysical scenario which is true, is content-incompatible with human reason's *first-intended or penultimate* favorite: the metaphysical scenario which is true if human reason has *its way*. They offer the following argument against PSC, rivaling Deduction 7.3 against PCC:

[Deduction 7.4]
(1´´*) For all *x*: if *x* is not a physical entity, then for no *y*: *y* is a physical entity and *x* causes *y*. [Premise]
(2´´*) For some *y*: *y* is a physical entity and *y* is contingently actual and there is no *z* such that *z* is a physical entity and *z* causes *y*. [Premise]
(3´´*) For all *y*: if *y* is a physical entity, then for no *x*: *x* is not a physical entity and *x* causes *y*. [Logically from (1´´*); the predicate-logical law used is – in symbols – this: $\forall x(\neg F(x) \supset \neg\exists y(F(y) \wedge C(x, y))) \rightarrow \forall y(F(y) \supset \neg\exists x(\neg F(x) \wedge C(x, y)))$.]
(4´´*) For some *y*: *y* is a physical entity and *y* is contingently actual and there is no *z* such that *z* is a physical entity and *z* causes *y*, *and there is no x: x is not a physical entity and x causes y*. [Logically from (2´´*) and (3´´*)]
(5´´*) For some *y*: *y* is contingently actual and there is no *x* that causes *y*. [Logically from (4´´*]

Like Deduction 7.3, Deduction 7.4 is logically correct. *But*, pivoting on the same second premise as Deduction 7.3 [there called "(2´´)"], Deduction 7.4 accepts PCC [in the logically equivalent formulation (1´´*)] and concludes – see (5´´*) – the negation of PSC [precisely speaking: a logical equivalent of the negation of PSC]; *whereas* Deduction 7.3, on the contrary, accepts PSC (see (1´´)) and concludes – see (5´´) – the negation of PCC [precisely speaking: a logical equivalent of the negation of PCC].

Who is right here? Whose metaphysics is correct? It is no audacious surmise that believers in PCC (usually physicalists – "materialists" one formerly used to call them) are perfectly impervious to any argument against PCC whatsoever. And *some* of them have not even noticed that since the advent of quantum physics there is a conflict between PCC and PSC (which conflict cannot well be called "merely potential"); for, in addition to believing in PCC, they are

happy to believe and assert – as the Enlightened intellectuals of the 19th century (in their innocence) were happy to believe and assert– that *every contingently actual physical entity is caused by something physical*; which assertion is logically tantamount to the *negation* of (2´´) – second premise in Deduction 7.3 – and to the *negation* of (2´´*) – second premise in Deduction 7.4 – and which assertion follows logically from the conjunction of PCC *with* PSC. The explanation of their belief-behavior is not far to seek: Obviously, these believers in PCC take PSC simply for granted – the advent, and consolidation, of quantum physics *notwithstanding*.

But even those believers in PCC who accept the assertion, significantly supported by quantum physics, which is the second premise in Deduction 7.3 *and* the second premise in Deduction 7.4 – even *they* will stick to PCC. Consequently, if they are rational and sufficiently versed in logic, they will deny PSC. It is of no avail to point out to these hardened believers in PCC *that* PSC is much more prominent and important than PCC in human cognition and recognition over the last twenty-five centuries; *that* PSC has a much wider scope and application than PCC (PSC not being close to any particular metaphysical position, while PCC is rather close to *general physicalism*); *that* the denial of PSC entails that the actuality of some actual entity has no origin; *that*, therefore, the actuality of that entity is (ontologically) fortuitous and has no explanation, which – at least *in itself:* without robust consideration of anything in favor of it – is *anathema* to human reason *in itself*: *anathema* to human reason's nature.

37. Let *y*, in denial of PSC, be a contingently actual entity that is not caused by anything. Since *y* is contingently actual, *y* is *not* necessarily actual – which entails that *y* is *not* intrinsically-to-itself necessarily actual (and which also entails – even without making use of the assumption that *y* is not caused by anything – that *y* is *not* necessarily caused [made actual] by anything; *otherwise*, if *y* were necessarily caused, *y* would, after all, be necessarily actual, since it is logically necessary that what is caused [made actual] is actual). Thus, the actuality of *y* has no origin that is identical with *y* (which it would have if, and only if, *y* were intrinsically-to-itself necessarily actual; remember here that *y* cannot *cause* [*make actual*] itself); and it also has no origin that is different from *y*, since, according to assumption, *y* is not caused (made actual) by anything. Therefore, the actuality of *y* has no origin.

All of the mentioned points against assuming PCC are – today, in our time – of no avail: they who are hardened believers in PCC [and which physicalists are not? their professed position – general physicalism – trivially entails PCC] will believe in PCC *in spite of* all those points. And they may; it is not rationally forbidden to do so. But it is likewise not rationally

forbidden to believe in PSC, rather than in PCC, *when accepting* (2´´)/(2´´*) – and hence *to deny* PCC (as is, *in these circumstances*, a mere matter of logic). From the point of view of what is, *in itself*, most pleasing to human reason *in itself*, *to deny* PCC is even *the very thing that one ought (rationally) to do*. However, what is in the first, penultimate instance most pleasing to human reason (that is: what is, *in itself*, most pleasing to human reason *in itself*), need not be what is most pleasing to human reason in the second, ultimate instance: *all things considered, with unflinching respect for the truth* (and unflinching respect for the truth must, after all, be maintained by human reason, or more properly speaking: by human beings who aim to be as rational as is possible for human beings). But there's the rub: *what is the truth here* just isn't known – just isn't humanly cognizable to any extent that would truly deserve the title of *knowledge*.

38. Note that nothing gets better for either side of metaphysics if one denies both PCC and PSC; taking this step just increases the sum total of "burden on rationality". What, of course, one might do – it is rationally permissible, not rationally obligatory – is to withhold judgment regarding truth or falsity, both with regard to PCC and with regard to PSC. However, this is something metaphysicians worth their salt will not do.

8 What is the difference between *actual* and *ought to be actual*?

For concepts, there are three degrees of difference: degree 1, degree 2, and degree 3; degree 3 is the highest, degree 1 the lowest, degree 2 is in between the other two. If concepts are different in degree *N*, then they are also different in each degree *lower* than degree *N*; however, concepts often are different in degree *N* while they are not different in any degree *higher* than degree *N*. Thus, *equiangular triangle* and *equilateral triangle* – these *two* concepts – are different in degree 1, and are *not* different in degree 2, because they are *necessarily coextensional*, and are, moreover, *not* different in degree 3, because they are *coextensional*; whereas *animal with a heart* and *animal with kidneys* – these other *two* concepts – are concepts different in degree 2 (and, therefore, different also in degree 1), because they are *not* necessarily coextensional, and yet they are concepts *not* different in degree 3, because they *are* coextensional.

It seems that the concepts *actual* and *ought to be actual* are different in degree 3, and therefore, different also in degrees 2 and 1; for *actual* and *ought to be actual* are, it seems, not coextensional. It seems that many entities ought to be actual but are not actual, and it seems that for *many* actual entities it is not the case that they ought to be actual; that for many among these *many* it is even the case that they ought not to be actual, i.e., ought to be not actual.

An evaluation of these impressions, regarding their objective truth, or objective falsity, is not possible as long as it has not been explained – and so far, it has not been explained – what is meant by "ought to be". An explanation is needed, and *urgently* needed – at least philosophers should feel that way – in view of the fact that some philosophers (notably, Leibniz) have claimed that *actual* and *ought to be actual* are coextensional (even *necessarily* coextensional!) – which position one might call "deontic monism" –, whereas other philosophers have claimed that *nothing ought to be actual and nothing ought to be not actual* – which position one might call "deontic indifferentism" [with respect to actuality], or, indeed, "deontic nihilism".

39. In his *Ethica ordine geometrico demonstrata*, Spinoza sometimes sounds as if he were a deontic monist, sometimes as if he were a deontic indifferentist. Interestingly (and what it has to do with Spinoza will soon

become clear), one might decide in uniform generality that the following is true: If an item is [in the strictest sense] *necessarily* actual, respectively, not actual, then its actuality, respectively non-actuality, is something that ought to be [i.e., then it ought to be actual, respectively, not actual]. *Or* one might decide in uniform generality that the following is true: if an item is [in the strictest sense] *necessarily* actual, respectively, not actual, then neither its actuality nor its non-actuality is something that ought to be [i.e., then it neither ought to be actual nor ought to be not actual]. And indeed, it seems rationally appropriate to choose one of these two general and uniform approaches in reaction to the unavoidable confrontation with *necessary* actuality, respectively non-actuality, *and* with the question that, for a philosophical mind, is just as unavoidable: "Is *this*, which is *necessarily* actual / not actual, something that ought to be, or is it *not*?"

Suppose it is necessary that 1 is actual, and necessary that the greatest prime number is not actual. Then, under *the first approach*, one will get that both the actuality of 1 and the non-actuality of the greatest prime number is something that ought to be. (The rationale is this: In these cases, "ought to be" *trivially* applies.) Under *the second approach*, one will get that neither the actuality of 1 nor the non-actuality of 1 is something that ought to be, and one will get that neither the actuality of the greatest prime number nor the non-actuality of the greatest prime number is something that ought to be. (The rationale is this: In these cases, "ought to be" does *trivially* not apply.)

Suppose, now, that Spinoza is a *maximal determinist*; i.e., that he holds that everything actual is [in the strictest sense] necessarily actual, and that everything non-actual is [in the strictest sense] necessarily not actual – which is neither an unfounded nor an audacious supposition (see Spinoza's *Ethica*). Then, if he chooses *the first approach* (or *we* choose to interpret him in this way), *actual* and *ought to be* will turn out to be coextensional (and Spinoza will turn out to be a deontic monist); if, however, he chooses *the second approach* (or *we* choose to interpret him in this way), it will turn out that nothing ought to be actual and that nothing ought to be not actual (and Spinoza will turn out to be a deontic indifferentist). Here are the relevant demonstrations:

Under maximal determinism, *choosing the first approach*: (i) suppose *x* is actual; hence *x* is necessarily actual, hence *x* ought to be actual; (ii) suppose, for *reductio [ad absurdum]*, *x* ought to be actual and is not actual; hence *x* is necessarily not actual; hence x ought to be not actual – contradicting (under deontic logic) the supposition for *reductio*.

In turn, under maximal determinism, *choosing the second approach*: (i´) suppose *x* is actual; hence *x* is necessarily actual, hence it is not the case that *x* ought to be actual and it is not the case that *x* ought to be not actual; (ii´) suppose *x* is not actual; hence *x* is necessarily not actual, hence it is not the case that *x* ought to be actual and it is not the case that x ought to be not actual. Therefore [on the basis of (i´) and (ii´)], everything is such that it is not the case that it ought to be actual, and such that it is not the case that it ought to be not actual. Therefore, nothing is such that it ought to be actual, and nothing is such that it ought to be not actual.

The explanation of what is meant here by "ought to be" is as momentous as it is short: What is meant is *axio-objective obligation*: "ought to be" here means the same as is meant by "*axio-objectively* ought to be".

40. Why "axio-objectively" instead of just "objectively"? – There is an objective *ought to be* that does not per se intend to propose something that is objectively *worthy* (*axios*): this is the objective mandate of *mere instrumental rationality*, asserting what objectively ought to be done – what is merely instrumentally rational to do – for the becoming actual of some purpose or other, no matter whether this purpose is objectively worthy, objectively unworthy, or objectively value-indifferent. In contrast, the axio-objective *ought to be* per se intends to propose something that is objectively *worthy*.

The objectivity of "ought to be", as "ought to be" is intended to be understood here, namely, *axio-objectively*, is in its ontological "taste" not unlike the moral objectivity of "ought to do" in Kantian ethics [and "ought to do" is easily accommodated to "ought to be": "*x* ought to do *G*" means the same as "*x* ought to be a *G*-doer"]. But its foundation is, in several respects, quite different from Kant's *attempted* founding of the moral objectivity of "ought to do" [for one thing, not the most important one, it turns out that the *morally objective* "ought to do" is only a special case of the rather comprehensive *axio-objective* "ought to be": "*morally objectively x* ought to do *G*" means the same as "*axio-objectively x* ought to be a *G*-doer"]. The relevant cognitive procedure [non-Kantian, though in one respect remotely reminiscent of Kant], which procedure is always more or less obstructed by human weakness and by human wickedness, is this: Experience tells us, at a given time (and in its own light, of course), part of what the World is objectively like; and on the basis of *this content*, to the extent it is correct and we correctly apperceive it (we never apperceive the whole of it correctly), passing *the correct and correctly apperceived content* through the bright light of the – in itself *formal*, *a priori* – concept of *objective justness* [which, as far as *morality* is concerned, is *objective moral justness*, i.e., *objective justice*], it is projected to us, relative to the said content, what [axio-objectively] ought to be, and what ought not to be (and *then*, if it turns out that some item ought to be actual and is not actual, we immediately feel at least some motivation to do something for the becoming actual of that item – *if* we believe that we *can* do something for it; perhaps we even feel *the duty* to actualize it personally).

41. "Ought to be" stands, truncated, for "ought to be *F*", and "ought not to be" stands, truncated, for "ought not to be *F*", that is: "ought to be not *F*", that is: "ought to be *non-F*". Thus, the form "ought not to be" is seen to be subsumable under the form "ought to be". As is already obvious from what has been said so far in this chapter, one prominent *filling* of "ought to be" and "ought not to be" is this: "ought to be *actual*" and "ought not to be *actual*". Now, this filling is not only prominent, it is also *central*: it unifies all fillings of "ought to be" and "ought not to be"; for "*x* ought to be *F*" – no matter *what*, in particular, is substituted for "*F*" – amounts to "the state of

affairs that *x* is *F* ought to be *actual*", and "*x* ought not to be *F*" amounts to "the state of affairs that *x* is not *F* ought to be *actual*". [And, indeed, "*x* ought to be actual" amounts to "the state of affairs that *x* is actual ought to be actual", and "*x* ought not to be actual" amounts to "the state of affairs that *x* is not actual ought to be actual".]

Note that instead of saying that a state of affairs *p* is actual / not actual, one can just as well say that *p* is the case / is not the case; *or* that *p* obtains / does not obtain; *or* that *p* is a fact / is not a fact (but this third way of speaking – found, for example, in Wittgenstein's *Tractatus* – has been vitiated in recent years by the widespread practice of using the word "fact" as a *synonym* of the word "state of affairs", leading to the quite absurd designation of non-obtaining states of affairs as "non-obtaining facts"). *Three* (or four) ways of speaking, but *one* meaning: it is the *being actual*, respectively *being not actual*, of a certain state of affairs that is meant by each one of those ways of speaking.

If we look at the world of *numbers*, the world of the purely arithmetical properties and relations of *the numbers*, and consider that world in itself, in isolation from the rest of the World, we find that everything in the world of numbers is a matter of necessity [in the strictest sense]. Thus, if a number is *F*, it is necessarily *F*, and if a number is not *F*, it is necessarily not *F* – where "*F*" is standing for a general term [it may begin with the indefinite article "a"] that linguistically represents a purely arithmetical property, no matter which property it is, with "*x* is *F*" being semantically tantamount to "*x* has [*or*: exemplifies] the property of *being F*". If, *although* the world of numbers is a world of pure necessity, not only ontology but also *[axio-]objective deontology* has *positive application* in the world of numbers, then the tenet appropriate for this situation is that *F* and *[axio-objectively] ought to be F* are coextensional within the realm of numbers, for any purely arithmetical property *being F*.

42. Because of the structural analogy between *maximal determinism* – see note **39** (earlier in this chapter) – and the situation regarding *necessity* in the world of numbers, the tenet in question can actually be deduced if one follows what was called "the first approach" in note **39**, *now* applying this approach to any purely arithmetical property *being F* – or: *F*-ness, *F*-ity – instead of applying it to *actuality*: Let *x* be any number, *F*-ness any purely arithmetical property. Suppose *x* is *F*; hence *x* is necessarily *F*; hence [because *what is necessarily F ought to be F*] *x* ought to be *F*. Thus, if *x* is *F*, it ought to be *F*. In turn, suppose [for *reductio*] *x* ought to be *F* but is not *F*; hence *x* is necessarily not *F*; hence [because *what is necessarily not F ought to be not F*] *x* ought to be not *F* – (deontologically) contradicting the supposition for r*eductio*. Thus, if *x* ought to be *F*, it is *F*.

If objective deontology has *no application* in the world of numbers, then *either* it has *radically* no application – and asserting or denying "ought to be *F*" / "ought to be not *F*" ["ought

not to be *F*", "ought to be non-*F*"] of any number is entirely devoid of cognitive meaning, no matter which purely arithmetical property *F*-ness one is concerned with; *or* it has *merely* "no application" in the sense of having "no *non-negative* application": because both "It is *not* the case that *x* ought to be *F*" and "It is *not* the case that x ought to be not *F*" are true of any number *x* and any purely arithmetical property *F*-ness. As a matter of fact, the *radical* version of the *no-objective-deontology-position* seems to me the most reasonable stance in the question of *objective deontology or no objective deontology* in the world of numbers – a world of *pure* necessity.

Is the World regarding objective deontology like the world of numbers? In fact, to many thinkers it has seemed that the World is, in this important respect, *similar* to the world of numbers – *as soon as* it is made clear (as it has been made clear here) that "ought to be" is to mean the same as "*axio-objectively* ought to be". But few of those thinkers have opted for the (completely general) coextensionality of *actual* and *ought to be actual* (which would have been reminiscent of Leibniz, maximal determinist and theist, *and* indeed of Spinoza – maximal determinist and pantheist – wherever in the *Ethica* Spinoza's pantheism is not so hollow as to amount to atheism). Rather, almost all of them – entirely sidestepping the question of *maximal determinism* (defined in note **39**) – simply assert that there is *no axio-objective ought* in the World, not only *none* for *actuality*, but also *none* for *every F*-ness (*while* they do not doubt the presence in the World of desire-and-belief-guided – *preference*-guided – *subjective ought*). Thus, they adopt, with respect to *the World*, the *no-objective-deontology-position* (described in the preceding paragraph for the world of numbers), but for the most part, it seems to me, *not* the *radical* version of that position (see above); indeed, the *general negation* of "ought to be *F* / not *F*" appears to be quite enough with respect to the World, the *general nonsensification* (as one might call it) needless "overkill".

If there is no axio-objective ought in the World, in the sense that "[axio-objectively] ought to be *F* / not *F*" has (application but) no *non-negative* application in the World – which is the no-objective-deontology-position in its *non-radical* version (on which view I will concentrate from now on) –, then the widespread intuition *that many entities ought to be actual but are not actual* is obviously untenable; *whereas* the intuition *that for many actual entities it is not the case that they ought to be actual* turns out to be, contrary to first impressions, a perfect triviality (since for *all* of the many actual entities it is not the case that they ought to be actual); *whereas*, in turn, the intuition *that many among these [the last-mentioned] many entities*

ought to be not actual [or: *ought not to be actual*] is, again, obviously untenable. (These three intuitions were introduced in the second paragraph of this chapter.)

What is the truth here, the truth in the *axio*-metaphysical question of the relationship between *actual* and *[axio-objectively] ought to be actual*, between *F* and *[axio-objectively] ought to be F*? For any decision here, it is crucial whether or not there is a *positively applying – non-empty, fulfilled –* concept of objective *justness* [which, as far as *morality* is concerned: as limited to *morality*, is objective *moral justness*: objective *justice*].

Plato was the first to give articulated philosophical expression to what countless human beings before him, and countless after him, believed already "by heart" (that is: believed "a priori", in the sense of believing it even without articulation): *There is a positively applying concept of objective justness (and we know what it is, more or less)*. But it fell to St. Augustine (of Hippo) to give to this belief – *alias* the belief in [axio-]objective (and humanly accessible) *deontic* affirmative truth – its rhetorically most sonorous formulation:

> "Quaerens enim, unde adprobarem pulchritudinem corporum sive caelestium sive terrestrium, et quid mihi praesto esset integre de mutabilibus iudicanti et dicenti, hoc ita esse debet, illud non ita: hoc ergo quaerens, unde iudicarem, cum ita iudicarem, inveneram incommutabilem et veram veritatis aeternitatem supra mentem meam commutabilem." (*Confessiones*, liber VII, caput 17)
>
> ["For, searching on what grounds I would approve of the beauty of celestial or terrestrial bodies and searching what would verily support me when judging and saying rightly of changeable things, 'This ought to be so, that not so': searching, that is, on what grounds I would judge when thus I judged, I had found the unchangeable and true eternity of truth above my changeable mind."]

Given, present to the human mind, the concept of *objective justness*, and given, present to the human mind, how the World – the actual world contingently – objectively is, it is just about inevitable – even though the presence of either factor to the human mind is far from perfect – that many things will be found that ought to be actual but are not actual, and many things that are actual but ought not to be actual. Yet, many people – most of them among the human beings living now, least of them among the human beings who lived long ago – have not been able to find any positively applying concept of *objective justness*, of *objective*

justice as far as morality is concerned (justice being *moral* justness). Despite having conducted a – no doubt – sincere and diligent search, they found no such concept, none became present to them. For them, the axiological "ought to be" and "ought not to be", whenever positively applying – whenever true of something –, can only be an *axio-subjective* matter of personal taste and personal interest [and personal belief concerning "the conditions", "the situation"], of factors that vary from person to person; or, at best, can only be a matter of being *intersubjectively* determined, on the basis of personal tastes and personal interests [and personal beliefs about "the conditions"], by some so-called "social welfare [i.e., *aesthetical and moral* welfare] function". For them, if "ought to be" and "ought not to be" are meant *axio-objectively* (to mean them that way is in their eyes "unadvisable", to put it mildly), then those expressions never *apply*, i.e., never apply *positively*; they apply only negatively, which means: all axio-objectively meant "ought"-sentences and "ought not"-sentences are false, their negations true.

Thus, conflict of philosophical opinion appears to be irresolvable *also* in the axio-metaphysical question of the relationship between *actual* and *[axio-objectively] ought to be actual*, and generally between *F* and *[axio-objectively] ought to be F*.

What is the answer most pleasing to human reason if it be asked how *actual* and *ought to be actual* are related to each other? The *first-intended*, or *penultimate*, answer – the answer which is true *if human reason has its way* – consists, mainly, in this:

> Everything that ought to be actual is [also] actual. ["Everything that ought to be *is*"]

One is tempted to add:

> Everything that is actual [also] ought to be actual. ["Everything that *is* ought to be"]

However, against making this addition there are, even from the start, even *without* attending to experience, weighty reasons (reasons that have nothing to do with the position of *a priori* deontic nihilism – or: *a priori* deontic indifferentism – science-shocked philosophers feel compelled to adopt, for example, Wittgenstein in *Tractatus* 6.41). Here are these weighty reasons:

[I] Suppose it is not the case that *x* ought to be actual, and it is not the case that *x* ought not to be actual, in other words: the actuality of *x* is deontically indifferent – which we intuitively very much like to believe, perhaps naively, is true of many *x* (but *not* of all). Now, if of some *y* among these many *x* it is true that *y* is actual – which, if it is assumed, is not much of an *additional* assumption –, then we do have a counterinstance to "Everything that is actual ought to be actual". To block this line of thought, should we assume – a priori, as a tenet of human reason in itself – that, for all *x*, either *x* [axio-objectively] ought to be actual or [axio-objectively] ought not to be actual (in other words, should we assume – a priori, as a tenet of human reason in itself – that there is *no* deontic indifference with respect to actuality); or *at least* that, for all *actual x*, *x* ought to be actual or ought not to be actual? But this assumption, whether in its strong or in its weak(er) form, is obviously not an assumption human reason feels compelled to make (otherwise, believing that *something actual* is deontically indifferent with respect to actuality would not be so attractive to us as it is in fact). Yet, Leibniz, for one, relied on that same assumption in its strong form – to my knowledge, without explicitly formulating it – to reach his (intermediate) conclusion *that there is at most one best world among the possible worlds*.

43. Suppose (for *reductio*) there are *several* best worlds among the possible worlds. Given that there is *no* deontic indifference with respect to actuality, as Leibniz implicitly assumed, it is true for each of these worlds that it ought to be actual or ought not to be actual. And, since each of these worlds is a *best* world, it is, for each of them, *not* true that it ought not to be actual. It is, therefore, true for each of the several best worlds among the possible worlds that it ought to be actual. Now, let w_1 and w_2 be *two* of these best worlds; hence w_1 ought to be actual, and w_2 ought to be actual, too; hence it ought to be true that w_1 *and* w_2 are actual. But it is *impossible* that w_1 *and* w_2 are actual, since different possible worlds are, with respect to actuality, *incompatible* possible worlds. It is, therefore, after all *not* true that it ought to be true that w_1 *and* w_2 are actual – because if it ought to be true, it, logically, would have to be *possible*. Thus, the initial assumption (that there are *several* best worlds among the possible worlds) is seen to entail a contradiction (*given* that there is no deontic indifference with respect to actuality), and it must, therefore, be false, its negation true.

And let us consider the relationship between (the truth of) "There is at most one best world among the possible worlds" and the assumption that there is no deontic indifference with respect to actuality *also the other way around*: let us consider not the dependence of the former on the latter, but the dependence of the latter on the former. The following considerations are *indirect*:

Suppose it is deontically indifferent whether *x* is actual: *x* neither ought to be actual nor ought not to be actual; and suppose *w* is a best world among the possible worlds. Suppose *x* is a part of the content of *w*. Let f(*w*) be a possible world that does not contain *x*, but only by a very small margin [say, *x* is the state of affairs that the

number of carbon atoms in UM's body at t_0 is n_0, and in f(*w*) the number of carbon atoms in UM's body at t_0 is n_0+1], f(*w*) being otherwise as equal to *w* as it can logically be; let f(*x*) be the insignificant item wherein f(*w*) differs from *w*: f(*x*) is bound to be just as deontically indifferent with respect to actuality as *x* is. It stands to reason that f(*w*), containing f(*x*) instead of *x*, is, though different from *w*, a best world among the possible worlds just as *w* is, and that, therefore, there are several [that is, at least two] best worlds among the possible worlds. Thus, if one denies this latter proposition, i.e., believes that there is at most one best world among the possible world, *and* believes that some possible world is best (as Leibniz did), one had better also deny that there is – that there is any instance of – deontic indifference with respect to actuality: one had better believe that there is no deontic indifference with respect to actuality.

For, *if* there is deontic indifference with respect to actuality, it easily can be that an *x* that is deontically indifferent with respect to actuality is included in a possible world *w* that is *best* among the possible worlds, while [the result of] a very slight departure from *x* – a very slight modification of *x*, just as deontically indifferent with respect to actuality as *x* – is, instead of *x*, included in *another* possible world *w´*, a world, aside from that very slight modification, as equal to *w* as it can logically be: *another best* world among the possible worlds, because *w´* is – it stands to reason – as little blocked from being *best* by the with-respect-to-actuality deontically indifferent very slight modification of *x* (part of *w´*) as *w* is blocked from being *best* by the with-respect-to-actuality deontically indifferent *x* itself (part of *w*).

[II] Moreover, it cannot be doubted that some actual *x* is *necessarily* [hence *not contingently*] actual. And it can be taken to be a conceptual – (broadly) logical – truth that the truth of *x ought to be actual* requires the truth of *x is not necessarily actual*. It follows, inexorably, that some *x* is actual and that it is not the case that *x* ought to be actual. There is, however, some motivation *not* to accept the prima facie so acceptable logical truth of "For all *x*: if *x* ought to be actual, then *x* is not necessarily actual". It consists in the fact that "For all *x*: if *x* is necessarily actual, then *x* ought to be actual" seems just as acceptable as a logical truth as "For all *x*: if *x* ought to be actual, then *x* is not necessarily actual".

44. Note that one cannot well accept both generalities as logical truths; if one did, it would follow, as a logical truth, that nothing is necessarily actual – which seems perfectly unacceptable.

The considerations in [I] and [II] (complemented by the two notes, **43** and **44**) present weighty reasons against assuming "Everything that is actual ought to be actual" that arise from human reason in itself, without attending to experience, and at the same time *also* point out that those reasons aren't compelling: needn't in rational absoluteness lead to denying "Everything that is actual ought to be actual". Those considerations are, so to speak,

rendered obsolete by the apparent fact that with the help of experience it is demonstrable that "Everything that is actual ought to be actual" is *false*. We know from experience that there are countless instances of unspeakable cruelty in the World; each instance is *actual* (though, often enough, some who have not seen it happen with their own eyes – and also some who *have* seen it happen with their own eyes – deny that it is actual). If human reason allows epistemic authority to experience (as it *rationally* should), it is irrational *not to maintain* the actuality of some instances of cruelty that have become objects of experience. They *are* actual. And it is irrational, in any case, *not to maintain* that they ought not to be actual. They ought *not* to be actual, and consequently [as a *deontological* consequence] it is *not* the case that they ought to be actual – while they are, indeed, actual.

Or so it seems. Remember, however, that thinkers who, with Leibniz (or, for that matter, with Hegel, who, in other respects, is a philosopher very different from Leibniz), believe that *what is actual is necessarily actual* (which is *not* an irrational belief) and *what is necessarily actual ought to be actual* (which is *not* an irrational belief, either) – that such thinkers do not violate but fulfill their rationality when they maintain of the countless instances of unspeakable cruelty in the World *that they are not only actual but also ought to be actual*. The view is scandalous; but the scandal here is not a scandal of human reason, it is a scandal of the *human heart*. Indeed, Voltaire's protest against Leibnizianism in *Candide ou l'optimisme* is a protest of the human heart, and it is truly effective *only* as such a protest. Or so it seems. *For*, is it not rational for human reason, for which it is rather often rational to be persuaded by human experience – is it not also rational for human reason to be sometimes persuaded by the human heart, and especially in the case at hand?

It is time to arrive at conclusions. Even *if* "Everything that is actual ought to be actual" is accepted as *part* of the *first-intended*, or *penultimate*, answer to the question of what is the relationship most pleasing to human reason between *actual* and *ought to be actual* (it rather seems to me that it should *not* be thus accepted), it is, I do not hesitate to say, for the vast majority of thinkers (including myself) *not* a part of the *second-intended*, or *ultimate*, answer to that question; rather, for them, part of the *ultimate* answer (and for most of them, including myself, already part of the *penultimate* answer) is this: "Something is actual but it is not the case that it ought to be actual; indeed, something is actual and it ought not to be actual [where "it ought not to be actual" deontologically entails, but is not entailed by, "it is not the case that it ought to be actual"]."

What about the converse, "Everything that ought to be actual is actual"? – This, indeed, is a statement of which it can safely be said that it is true *if human reason has its way*; it is a main constituent of the *first-intended*, or *penultimate*, answer to the question of what is the relationship most pleasing to human reason between *actual* and *ought to be actual*. There are no reasons coming from human reason *in itself*, *without* attending to experience, against it; there is, from human reason *in itself*, only wholehearted assent.

45. Deontic nihilists are bound to maintain that "Everything that ought to be actual is actual" is true – *trivially* bound to maintain this [according to elementary predicate logic], because of *nothing*, they say, it is true that it ought to be actual. Note also – what is more interesting – that "deontically tragic situations", where something that *cannot* be actual nevertheless *ought* to be actual, are repugnant to human reason: it is a logically true tenet of human reason (more specifically: *deontologically true tenet* – *deontological truth* being per se included in *[broadly] logical truth*) that everything that ought to be actual is *possibly* actual / *can* be actual [i.e., is not in the strictest sense necessarily not actual].

Thus, according to human reason, there are no "deontically tragic situations" (and human reason is far from having second thoughts about this). Consequently, also the situation that *x* ought to be *F and* ought to be *G* [or: ought to be *F and G*] is logically excluded, *given F* and *G* are *incompatible* general terms (i.e., given *F*-ness and *G*-ness *cannot* be exemplified by the same entity); for that situation would require that the state of affairs that *x* is *F* and *G*, which state of affairs *cannot* be actual (since F and G are incompatible), nevertheless *ought* to be actual. Likewise, the situation that *x* ought to be *F* and *y*, too, though different from *x*, ought to be *F* is logically excluded, *given F*-ness can be had only by *one* entity; for that situation would require that the state of affairs that *x* and *y* are both *F*, which state of affairs *cannot* be actual, nevertheless *ought* to be actual.

On the other hand, the reaction, in the name of truth and truth-revealing experience, *against* "Everything that ought to be actual is actual" is, normally, so emphatic (though still somewhat less emphatic than against "Everything that is actual ought to be actual") that what is – *in itself* – most pleasing to human reason *in itself* is made to seem nothing more than a wished-to-be-true but, after all, *false* dream: "Why, there are of course countless things that ought to be actual and are not actual, beside the countless things that ought not to be actual and are actual! Who can doubt it?" When being reminded that, in this discussion, "ought to be *F* / not *F*" is to mean "*axio-objectively* ought to be *F* / not *F*", some proponents of what is asserted in the above (fictional but realistic) quotation will become less emphatic, less sure of their opinion, and some will abandon it; yet, the just described *second-intended*, *ultimate* position regarding a main aspect of the question at hand – "What is the relationship most pleasing to human reason between *actual* and *ought to be actual*?" – will

still be adopted by the overwhelming majority of thinkers (not, however, by any deontic nihilists).

And it is not only that "Everything that ought to be actual is actual", which is *in itself* so truth-attractive to human reason *in itself*, becomes, at human reason's slightest looking-away from itself to how things really are (as presented by experience), *a glaring falsehood* for almost everyone who accepts axio-objective obligations (Leibniz being a notable exception); it is also that one cannot escape the impression that there is far less human effort to prevent the falsity of "Everything that ought to be actual is actual" from becoming *still more glaring* than there is human effort to make it *more glaring still*. If it is a fact – and not only appears to be one – that within the human sphere immeasurably many and ever more things that ought to be actual are not actual, then this is not only an indication of the degree of humankind's moral and aesthetical irrationality, it is also an indication of the degree of humankind's moral and aesthetical depravity.

It is not unimportant to be clear about the following: The situation of deontic-ontic deficiency that – experience informs us – we are in (its message being believed by almost everyone who accepts axio-objective obligations) is "contradicting" human reason in significant ways, *without* "contradicting" it in yet another, even more significant way. For it is a principle of human reason – indeed, a logical principle: a principle of deontic logic – that *it ought to be actual [ought to be the case] that everything that ought to be actual is actual*; which principle is *not* being *(in the logical sense) contradicted* (in contrast to *Everything that ought to be actual is actual* itself) if something that ought to be actual is not actual, although it is certainly a kind of *jarring* – "contradicting" – of that principle, and therewith of human reason itself, if something that ought to be actual is not actual. Moreover, if human reason had its way *all the way* it would be true that everything that ought to be actual is actual; thus, the situation of deontic-ontic deficiency that – experience informs us – we are in, tells human reason that it – human reason – does not have *its way* in this regard: the being actual of everything that ought to be actual; the said situation is thus, in this sense, "contradicting" the first (a priori, natural) intention of human reason: human reason's *native will*, so to speak, and therewith human reason itself.

46. O*A* ["It ought to be the case that *A*"] and not-*A* do not *logically* (and not *deontologically*) contradict each other, but they do, in a sense, "contradict" each other; one might say: they *violate* each other. [One might prefer saying that not-*A violates* – "contradicts" – O*A* whereas O*A* does not *violate* – "contradict" – not-*A*; but there

seems to be no objective – logical – reason for introducing this asymmetry; what "contradicts"/*violates* and what is "contradicted"/*violated* in O*A* vs. not-*A* seems to be merely a matter of *what* is subjectively considered "to do the attacking" and *what* is subjectively considered "to be under attack".] Thus, every instance of O*A* & not-*A* is a *violation*, though not every instance of it is a *logical contradiction*. The "contradiction" that has just been considered in the main text: "It ought to be actual that everything that ought to be actual is actual, and not everything that ought to be actual is actual" [or logically equivalently: "It ought to be actual that everything that ought to be actual is actual, and something that ought to be actual is not actual"], is a *violation*, and for all we know: a true one, and not a *logical contradiction*, let alone a true one. What is special about this true violation, distinguishing it from countless other violations one is ready to regard as true, is that its first conjunct, "It ought to be actual that everything that ought to be actual is actual" is not just a truth, but is also a *logical* truth, a truth of *deontic logic*.

Though it is a logical truth, it is far from being trivial. I, therefore, append the schematic deduction of the underlying general law of deontic predicate logic:

[Deduction 8.1]

(1) O*A*[β] ⊃ O*A*[β]	logical triviality
(2) O*A*[β] ⊃ OO*A*[β]	deontological law
(3) O*A*[β] ⊃ (OO*A*[β] ∧ O*A*[β])	proposition-logical inference from (2) together with (1)
(4) O*A*[β] ⊃ O(O*A*[β] ∧ *A*[β])	deontological inference from (3)
(5) O*A*[β] ⊃ O(O*A*[β] ⊃ *A*[β])	deontological inference from (4)
(6) ¬O*A*[β] ⊃ O¬O*A*[β]	deontological law
(7) ¬O*A*[β] ⊃ O(O*A*[β] ⊃ *A*[β])	deontological inference from (6)
(8) O(O*A*[β] ⊃ *A*[β])	proposition-logical inference from (5) together with (7)
(9) ∀υO(O*A*[υ] ⊃ *A*[υ])	predicate-logical inference from (8) [β is everywhere replaced by υ]
(10) O∀υ(O*A*[υ] ⊃ *A*[υ])	deonto-predicate-logical inference from (9)

Who has doubts about the legitimacy of the logical principles used in this deduction should take into account that the relevant interpretation of O*A* in this book is its interpretation as "It *axio-objectively* ought to be the case [ought to be actual] that *A*". In the light of that interpretation the doubts will fade. This is, in particular, true of the *Barcan-formula for obligation*, which is the justifying logical law behind the transition from (9) to (10). It is fitting for *axio-objective* obligation that quantification in connection with it is in all contexts always over *the same possibilia [possible objects]*, ideally, over *all the possibilia*; this manner of quantification makes the Barcan-formula for obligation logically true.

9 What is the true concept of objective justness?

The question which is the title of this chapter has not already been answered in the preceding chapter. In that chapter, it was only determined that "ought to be" is to mean the same as "*axio-objectively* ought to be", and *to some extent* it was explained *how* the concept of *objective justness* is central for the meaning and application of "[axio-objectively] ought to be". *Fully specified*, the role of the concept of objective justness for the axio-objective ought-to-be is this:

"*y* [axio-objectively] ought to be actual" has the same meaning as "It is objectively just that *y* be actual", where "objectively just" expresses the concept of *objective justness*.

47. Note that in the *definiens* of this definition – which, of course, is not a so-called "nominal definition" and a matter of pure convention, but is a so-called "explication" (see Rudolf Carnap on *explications* in *Meaning and Necessity* and in *The Principles of Probability*; Carnap takes "explication" to be a matter of combining analysis and convention with the ulterior aim of providing fruitful concepts to the scientific community, but perhaps *explication* is something *more important* than this) – the subjunctive, not the indicative, (grammatical) mood has been chosen for describing *the object* of objective justness [i.e., *that* which is objectively just]: it is written, in the *definiens*, "that *y be* actual", *not* "that *y is* actual". This has been done in order to forestall a misunderstanding that the formulation "It is just that *y is* actual" is open to, namely, that *y* is, as a rule, *presupposed* to be actual and that *this (presupposed) fact* is said to be just. No; *y* may very well be not actual, contingently so, and nevertheless it may veridically be said that it is just that *y* is – or much better: *be* – actual; in fact, this is rather often actually the case.

Note also that the above definition *suffices* as the basis of the *explication* – the analysis *with degrees of freedom* – of highly important other expressions of the language of axio-objective obligation, as follows:
It is [axio-objectively] obligatory that *A* / It [axio-objectively] ought to be the case that *A* $=_{Def}$ The state of affairs that *A* [axio-objectively] ought to be actual $=_{Def}$ It is objectively just that the state of affairs that *A* be actual. (The variable "*y*" in "*y* ought to be actual" and in the latter expression's above-presented *definiens* – "It is objectively just that *y* be actual" – is uniformly replaceable with every singular term, and "the state of affairs that *A*" *is*, for every declarative sentence substituted for "*A*", a singular term [and a *designating* – *referring* – singular term if the sentence is either true or false].)
x [axio-objectively] ought to be *F* $=_{Def}$ The state of affairs that *x* is *F* ought to be actual $=_{Def}$ It is objectively just that the state of affairs that *x* is *F* be actual. (The variable "*y*" in "*y* ought to be actual" and in its *definiens* – "It is objectively just that *y* be actual" – is replaceable with every singular term, and "the state of affairs that *x* is *F*" *is*, for every adjective and every noun [usually with an introductory indefinite article] that is substituted for "*F*" and for every singular term that is substituted for "*x*", a singular term [normally a *designating* one].)

It is not the aim of the present chapter to unfold the concept of *objective justness*. It is a highly disjunctive concept, in accordance with its various and disparate areas of application (there certainly is not only the "great divide" between morality and aesthetics, there are many other "divides" for it). The task to analyze [better: to *explicate*] the concept of *objective justness* would require a whole book. Instead, the aim of the present chapter is to present a certain problem one is confronted with when wishing to apply that concept, or even just "to look at it", scrutinize it; the present chapter also aims to present a way to solve – or a way, at least, in the direction of solving – that problem. (Perhaps, however, the problem has no wholly satisfactory solution; this, in fact, is what the factual state of philosophical discussion suggests.)

The problem emerges when the following question is being asked: "What is the *true* concept of objective justness?" – which is the question that is the title of this chapter, now presented with the small modification that the word "true" in it is emphasized via being put in italics. The reaction of many thinkers to the asking of this question is likely to be *this*:

> "This is a perfectly meaningless question. Given a precise meaning of the expression 'It is objectively just that *y* be actual', it can be expected that 'It is objectively just that *y* be actual' will be *true [correct, right]* of some things and *not true* of others, but it is nonsense to ask what is the *true [correct, right]* meaning of 'It is objectively just that *y* be actual'. There is no such thing; the meaning of 'It is objectively just that *y* be actual' is determined *by convention* and, whatsoever it is determined to be, it could just as well have been determined to mean something totally different. There is no inner connection between the predicate, as typographic inscription, and what the predicate means; its meaning is just *whatever it is taken to mean*. – Since the *true* concept of objective justness would be the *true* meaning of 'It is objectively just that *y* be actual', there is no such thing as the *true* concept of objective justness, either. *Ergo*: The question 'What is the *true* concept of objective justness?' is nonsensical."

However, some thinkers, including myself, have the strong intuition that "What is the *true* concept of objective justness?" is neither a nonsensical nor a meaningless question. If it were nonsensical or meaningless, the consequence would be that it is *objectively arbitrary* wheth-

er it is objectively just that *x* be actual, or not; and therefore (see the above definition), it would also be *objectively arbitrary* whether *x* ought to be actual, or not:

> "If, *with the given meaning of* 'It is objectively just that *y* be actual', it happens to be the case that *x* [axio-objectively] ought to be actual, and you don't like it, *change* the meaning of 'It is objectively just that *y* be actual' – as you are rationally free to (although, as a reaction, you may have to face, at least for a while, social pressure and other inconveniences; it is, therefore, recommendable for you, or your 'movement', to have political power that comes as close as possible to being *irresistible*) – and, *with the new meaning*, it turns out that it is *not* the case that *x* ought to be actual! And: If, *with the given meaning of* 'It is objectively just that *y* be actual', it happens to be not the case that *x* [axio-objectively] ought to be actual, and you don't like it, *change* the meaning of 'It is objectively just that *y* be actual' – as you are rationally free to – and, *with the new meaning*, it turns out that *x ought* to be actual!"

But on the contrary: It does not seem – at least to some thinkers – to be objectively arbitrary whether it is objectively just that *x* be actual, or not; and whether *x* ought to be actual, or not. *But* what can be held against the view that these matters *are* objectively arbitrary? To be sure, *to some people*, to quite a few people, especially to people in powerful positions in North Korea, Iran, Russia, China, or the United States, the apparent relativism regarding *(axio-objective!) obligation* and *objective justness* can only be highly welcome. This fact alone should fill us with strong suspicion against the above-presented relativistic argumentation.

And another fact should fill us with an even stronger suspicion against it: The argumentation can be *mutatis mutandis* repeated for just *any* monadic predicate *F*[*y*] [some examples: "*y* is a human being", "*y* is a natural number greater than 10", "*y* is alive", "everybody likes *y*", "*y* weighs ten pounds", "*y* is identical to *y*", …]. The two central argumentative steps are always the same (cf. above):

> *(a)* There is – whichever monadic predicate *F*[*y*] is being considered – no inner connection between *F*[*y*], as typographic inscription, and what is meant by *F*[*y*]; hence there is no *true [correct, right]* meaning of *F*[*y*].

> *(b)* The *true* concept of *F*-ness would be the *true* meaning of *F*[*y*]; hence there is – since (see *(a)*) there is no *true* meaning of *F*[*y*] – no *true* concept of *F*-ness.

Thus, *allegedly* [by implication], not only the *normative* predicates "It is objectively just that *y* be actual" and "*y* [axio-objectively] ought to be actual" fall prey to semantic relativism (where many people – many *philosophers* at least – would say: "This is precisely what these two predicates deserve!"); *allegedly*, all predicates *F*[*y*] fall prey to semantic relativism – wherewith, if it were so, all truth would dissolve into objective arbitrariness. Can *this* be the philosophical truth? Hardly; but how can one escape the (felt) iron grip of *(a) & (b)*?

In Shakespeare's drama *Romeo and Juliet*, in Act 2, Scene 2, Juliet is meditating on the fact that Romeo bears the name of the family which is her own family's enemy, and she asks rhetorically [lines 45-46]: "What's in a name? That which we call a rose / By any other name would smell as sweet." This gives us a clue for offering resistance against *(a) & (b)*: The *true* concept of *F*-ness – for example, the *true* concept of *objective justness* – is not at all a matter of how concepts are *named* in the language (a general form for this naming is "*F*-ness" [it shows the close correlative relationship between concepts – qua *monadic* concepts – and properties *that* the same form of naming is used for properties *and* concepts], "objective justness" being a particular example), or of how concepts are *expressed* in the language (the general form for this *expressing* is "*F*[*y*]", "It is objectively just that *y* be actual" being a particular example). The *true* concept of *F*-ness is only accidentally connected with language (with English, or with any other language). It is, in itself, independent of language, it is prior to language. It is something we first encounter in consciousness, in the intentionality of consciousness, perhaps without a name or predicate being already available for it; it is something that interests us, *very much* so, or to a lesser degree than *very much*, in any case, so much so that we recognize it again when we encounter it again – again recognize and identify it, even without a name or predicate being already available for it. Thus, a wolf-child – a child without human socialization, and therefore *without language* – who has repeatedly in full consciousness experienced roses as they originally were: sweet-smelling, will possess the *true* concept of sweet-smelling-rose-ness; and that concept stays the *true* concept of sweet-smelling-rose-ness, no matter how that concept – and no matter how sweet-smelling roses themselves – are called in the language the wolf-child finally learns to speak after having

come into contact with human civilization – *if ever* it comes into contact with human civilization and learns to speak a language.

The argumentation *(a) & (b)*, therefore, contains a *non sequitur*. Nothing is wrong with the first part of *(b)*, the part preceding the semicolon in *(b)*; it is perfectly true. And nothing is wrong with the first part of *(a)*, the part preceding the semicolon in *(a)*; it is perfectly true. But the second part of *(a)*, the part after the semicolon in *(a)*, does not follow from the first part: though the first part is true enough, there may still be a *true [correct, right]* meaning of *F*[*y*]. This meaning would, according to the first part of *(b)*, be precisely this: the *true* concept of *F*-ness – which may exist, the truth of the first part of *(a)* notwithstanding (as is shown by an example: the *true* concept of sweet-smelling-rose-ness, which exists although there is no inner connection between "*y* is a sweet-smelling rose", as typographic inscription, and what is meant by "*y* is a sweet-smelling rose").

A comparison may help here. Consider the following analogue of *(a) & (b)*:

> *(a´)* There is – whichever proper name *N* is being considered – no inner connection between *N*, as typographic inscription, and what *N* refers to; hence there is no *true [correct, right]* referent of *N*.
> *(b´)* The *true* N would be the *true* referent of *N*; hence there is – since (see *(a´)*) there is no *true* referent of *N* – no *true* N.
> [For example: Let *N* be "Anastasia Romanova", and let N be Anastasia Romanova.]

The *non sequitur* in *(a)* effectively cripples the argumentation *(a) & (b)* – just as, analogously, the *non sequitur* in *(a´)* effectively cripples the argumentation *(a´) & (b´)*. [The critique of *(a´) & (b´)* is *mutatis mutandis* – all necessary adaptations having been made – entirely analogous to the critique of *(a) & (b*) in the preceding paragraph.] The inference in *(a)* [and the one in *(a´)*] is not legitimate, and turning its conclusion into a premise leaves one with the difficult question of what might be the justification for this premise (the first part of *(a)* is *no* justification for it!). Moreover, in view of the obviously true first part of *(b)*, turning that conclusion into a premise comes very near to turning the whole argumentation into a *petitio principii* – where *that* which is to be proven as true is covertly, yet palpably, presupposed to be something that is already known, by all concerned, to be true (which is decidedly *not* so).

All of this is not to say that it is certain that there is a *true* concept of objective justness, or that it is easy to find out which concept is the *true* concept of objective justness. The *true* concept of objective justness is, no doubt, a much more complex, abstract, and, so to speak, *social* concept than the *true* concept of sweet-smelling-rose-ness. And, as with all concepts that have a *political* function (be that function micro-political or macro-political), the view one has of objective justness in the intentionality of one's consciousness can be blurred or even distorted by one's interests, interests that are subject to the pressures exerted by one's personality and by the facts of one's life and social environment – *so that* one takes a concept which is *not* the concept of objective justness [*not* the *true* one, *not truly* the concept of objective justice] to be the [*true*] concept of objective justness. If this did not happen so very often, then there would be no need to speak of *the true concept* of objective justness, instead of simply speaking of *the concept* of objective justness; and no need to speak of a *concept's being truly* the concept of objective justness, instead of simply speaking of *its being* the concept of objective justness.

We can count on it: Intrapersonal and social pressures (*such* is reality!) would reduce even a *pristine* word for a concept with *political* function – a word wholly untouched by any vestige of previous use, *newly* introduced as name or predicate for that concept – *to its ground state*: the state of being, in itself, a mere empty shell (far from being bound to hold the concept that one encountered in the intentionality of one's consciousness, the memory of the encounter now fading), to be filled, it *then* seems, in one way or another with semantical content by mere convention (or by mere authority, which is *enforced* mere convention): *objectively arbitrarily*. And *then*, of course, confronted with a plethora of possible fillings, *all*, it seems, having "objectively equal rights", one is bound to wonder "nostalgically" what the empty shell is *truly* to be filled with, and, of course, there is, *given* the state of mind one has come to, no objectively true answer to that question (and, in fact, one already believes this).

No need to say (but I say it anyway) that anyone who thinks that the following aphorism enunciates a profound insight will reject not only the offered solution – or rather: the offered *direction* to a solution – of the problem treated in this chapter, but also that very problem itself (as a problem):

> "How do I know that this colour is red? – It would be an answer to say: 'I have learnt English'." (Ludwig Wittgenstein, *Philosophical Investigations*, § 381; tr. G.E.M.

> Anscombe; the German original makes it perfectly obvious – whereas the English translation does not – that "red" is not being used as an adjective here, but as the proper name of a color.)
>
> [In the German original, the language learnt by the speaker with the effect of knowing that this color is *red* is, of course, *German*. It follows that persons who monolingually speak rather different languages – English, German – nevertheless all know that this color is *red* [either because they have learnt English, or because they have learnt German]. But if they, and also monolingual speakers of a language other than English and German, all know that this color is *red*, then the particular character of a language plays, after all, no role in the acquisition and the having of that knowledge.]

If the "answer" in the quotation from Wittgenstein were *an answer*, i.e., a *plausibly true* answer to the question asked in that quotation, a *plausibly true* answer in the case of a simple quality like *red*, then it would certainly be – with even greater justification – *an answer* also in the case of a complex, "cultural" concept like *objective justness*:

> "How do I know that this concept is objective justness? – It would be an answer to say: 'I have learnt English'."

However, this Wittgensteinian answer – that is: the all-sufficient determination of qualities and concepts, to the extent they are known, *by language*, or more comprehensively: *by a cultural system that is constituted by implicit social convention* (which determination, therefore, is *objectively arbitrary*) – is a *plausibly true* answer neither in the case of *objective justness* nor in the case of *red* (nor in the case of the qualitative concept corresponding to red: *redness*). For, one might say, echoing Juliet: "What's in a name? That which we call 'red' by any other name would be as warm. That which we call 'objective justness' by any other name would be as fair." And how do we *know* that this color is *red*, that this concept is *objective justness*? The true answer, I submit, is this: "I have encountered this color / this concept in consciousness oftentimes, in instances where it was *present* [exemplified/fulfilled], contrasting with instances where it was not present. I learned to call it 'red' – respectively, 'objective justness' – at some point in learning to speak English, my native language. I would have had to call *this same color* / *this same concept* by a different name if my native language

had not been English. But this would not have changed the nature of the color or the concept one bit."

For all who think that Wittgenstein's later philosophy is "the truth" (and there are many, and many of them intellectually respected), this stance of mine (and of others) – a broadly *phenomenological* stance – can only be the product of deficient thinking, deserving (because of its implicit Cartesianism and Platonism) philosophical ridicule.

And so, once again, we encounter unresolved, perhaps irresolvable, philosophical conflict.

48. Wittgenstein's rejection of predication and identification which is *prior* to the application of language – language being a public, intersubjective institution – is quite explicit:

"379. First I am aware of it as *this*; and then I remember what it is called. – Consider: in what cases is it right to say this?
380. How do I recognize that this is red? – "I see that it is *this*; and then I know that that is what this is called." This? – What?! What kind of answer to this question makes sense?

(You keep on steering towards the idea of the private ["inner" is the word closer to the original German] ostensive definition.)

I could not apply any rules to a *private* transition from what is seen to words. Here the rules really would hang in the air; for the institution of their use is lacking." (*Philosophical Investigations*; tr. G.E.M. Anscombe)

Against this, the following can be said. What Wittgenstein fails to recognize is the fact that we have a *public* (intersubjective) language about *private* matters (which can only be the case because we human beings are to a very considerable extent alike in our inner, private lives, the lives of consciousness and experience; thus, I have the public language – English, and German as well – to disclose my inner life to anyone I choose to disclose it to, and, provided that person speaks that language, I will be understood). Thus, rules [*non-private* rules, as required by Wittgenstein] for the "transition from what is seen [in consciousness] to words" do exist, and the transition is *not* a private one. Moreover, the content of an experience, of an episode of consciousness, is usually in a great part (the *objective intentional* part, Husserlian phenomenologists would say) *not* private either, although that part is embedded in something private (in the experience, in the episode of consciousness); neither the color *red* nor the concept of *objective justness* are something private; yet they are *first* encountered in conscious experience, *ontologically and epistemologically prior* to verbalization.

10 Is the simpler ontology always the better ontology? And what is the relationship between existence and actuality?

What is (in some matter or other) most pleasing to human reason *if human reason has its way* [or: *what* is most pleasing to human reason *according to human reason's first intention*, or: *penultimately*] and *what* is most pleasing to human reason *if human reason defers to (what appears to be) the truth* [or: *what* is most pleasing to human reason *according to human reason's second intention*, or: *ultimately*], and how, in a given case, the two "reason-pleasers" may *coincide* or may *diverge*, has played an important role in this book. Then, in the respects just touched on [by the italicized conditional phrases: (1) *if human reason has its way;* (2) *if human reason defers to (what appears to be) the truth*], what is it that has to be said about "The simpler ontology is the better ontology" – about this alleged principle of human reason, which some metaphysicians, faced with opposing metaphysicians, brandish like a sword, sickle, or razor?

Nothing is as simple as nothing at all; but unfortunately, it is not true that nothing exists (that is, it is *unfortunate* for the principle under consideration). There are even purely logical arguments against "Nothing exists":

1. Suppose nothing exists; then at least the truth that nothing exists exists; therefore, something exists.

2. Suppose nothing exists; then at least the fact that nothing exists exists; therefore, something exists.

Against these two brief *reductio*-arguments, it might be held that from a declarative sentence *A* one can logically conclude *It is true that A* and *It is the case that A*, but – it is insisted – neither *There exists the truth that A* nor *There exists the fact that A*, not even if *A* happens to be true. However, this objection is of no great help to opponents [who, of course, are not likely to deny that something exists, who perhaps do not even deny that it is logically necessary that something exists, but who simply wish to criticize the argument]; for there is a third *reductio*-argument of the ilk of the already given two:

3. Suppose nothing exists; then *that nothing* exists; therefore, something exists (whatever this may be: *that nothing exists*).

Now, could nothing exist without *that nothing exists* existing? – Hardly. It seems to be logically impossible.

It is safe to conclude that a veridical ontology cannot – already *for purely logical reasons* cannot – consist in claiming that nothing exists; it must, for purely logical reasons, claim that *something exists*. Nor can it claim that *nothing is actual*. In fact, "Something is actual" would simply follow from the already established "Something exists" *if* existence and actuality were the same concept. But are they the same concept? The alleged principle – "The simpler ontology is the better ontology" – seems to call for identifying them, and in fact, actuality and existence are oftentimes identified. Many philosophers claim that they do not understand what actuality in distinction from existence could be; and they consider their lack of understanding a strong argument against differentiating between actuality and existence. Now, no doubt, "*x* is actual" logically [analytically, conceptually] entails "*x* exists"; what one can have differing opinions about is merely whether "*x* exists" logically entails "*x* is actual" – *or not*. If "*x* exists" does not logically entail "*x* is actual" – as is the case if some *x* exists but is not actual, or if, although in fact every existing *x* is actual, it is still not a logical truth that every existing *x* is actual –, then actuality and existence need to be distinguished (as concepts). If, however, "*x* exists" logically entails "*x* is actual", in addition to the established (logical) fact that "*x* is actual" logically entails that "*x* exists", then it seems pointless to nevertheless differentiate between actuality and existence; then it seems there is no rationale for distinguishing them, and one may as well declare them to be the same concept, making "*x* exists" and "*x* is actual" synonymous predicates.

49. To proceed along these lines is not always inevitable (on the contrary!): Although the predicates "*x* is an equiangular triangle" and "*x* is an equilateral triangle" logically entail each other, they are *not* synonyms, and *equiangular triangularity* and *equilateral triangularity* are *not* the same concept.

Well, does "*x* exists" logically entail "*x* is actual"? It seems that it does not: The state of affairs that 5+2 = 8 exists, but is *not the case*, in other words: is *not actual* (because it is *impossible*: in-the-strictest-sense-necessarily not actual); in turn, the state of affairs that the speed of light *in vacuo* is 200,000*m/s* exists, but is *not the case*, in other words: is *not actual* (although it is *possible*: *not* in-the-strictest-sense-necessarily not actual).

50. The singular terms "that 5+2 = 8" and "that the speed of light *in vacuo* is 200,000*m/s*" can – like all singular terms of the form *that A* – also be taken to refer to *propositions*, instead of being taken to refer to states of affair.

If they are taken to refer to propositions, then *the positive [Platonistic] stance* is this: The proposition that 5+2 = 8 exists *and* is actual (necessarily so, because it is necessarily an abstract entity, abstractness conceptually entailing actuality and therefore existence); but it is not true (and [in-the-strictest-sense-]necessarily not true: it is *impossible* that it is true); in turn, the proposition that the speed of light *in vacuo* is 200,000*m/s* exists *and* is actual (necessarily so, because it is necessarily an abstract entity), but it is not true (*whereas* it is *not* [in-the-strictest-sense-]necessarily not true: it is *possible* that it is true).

In contrast, *the negative [Occamistic] stance* is this: The proposition that 5+2 = 8 neither exists nor is actual (necessarily so, because it is necessarily an abstract entity, abstractness conceptually entailing nonexistence and therefore non-actuality), and it is necessarily not true; in turn, the proposition that the speed of light *in vacuo* is 200,000*m/s* neither exists nor is actual (necessarily so, because it is necessarily an abstract entity), and it is not true, but *not* necessarily not true.

For the realm of abstract entities – all propositions being abstract entities – one has a choice: either to say that they all (necessarily) exist and (necessarily) are actual (which is *the positive stance*), or to say that they all do (necessarily) not exist and are (necessarily) not actual (which is *the negative stance*). This is a consequence of the (logical) fact that in the realm of abstract entities the concepts of existence and actuality are indeed logically equivalent, and are therefore, with logical necessity, coextensional – there being, moreover, no reason for letting some abstract entities exist / be actual, *and* some not exist / not be actual.

It is worth mentioning: If one is not ready to distinguish semantically between "*x* is an entity" and "*x* exists", then *the negative stance* will lead one to the position that there are no abstract entities: that there is, *yes*, a realm of abstract entities, but that it is *the empty set*. For, if a person identifies *being an entity* and *existing* and adopts *the negative stance*, then not only "No abstract entity exists" must be true for that person, but also "No abstract entity is an entity" – which is logically tantamount to "There are no abstract entities" [the *plural* in this latter sentence being merely rhetorical, without deeper semantical significance].

This thrust (the one immediately prior to note **50**) *against* the logical implication of *actuality by existence* and therewith *against* the identity, even the logical equivalence, of existence and actuality – the converse logical implication of *existence by actuality* is, and rationally must be, uncontroversial – can be warded off by holding that it is to be doubted that there are [or: exist, in a clear sense of "exist": the sense of existential "are"] any states of affairs – "That, ostensibly, there are names for states of affairs doesn't prove that there are states of affairs!" – and by holding that even if it be conceded that some state of affairs exists and is not the case, it does not follow that this state of affairs is *not actual*: *being not the case*, it is claimed, does not logically entail *being not actual*.

An analogous reply can be brought forward against the *properties*-based attempt to refute the logical implication of actuality by existence (which attempt is, structurally, just like the *states-of-affairs*-based attempt already considered): It is to be doubted that there are any properties – "That, ostensibly, there are names for properties doesn't prove that there are any properties!" –, and even if it be conceded that some property exists and is not exemplified by anything actual (*being a unicorn* is, perhaps, such a property), it does not follow that this property is *not actual*: *being not exemplified by anything actual* – it is claimed – does not logically entail *being not actual*.

In view of these replies against arguments for holding that existence *does not* logically imply actuality, one may begin to feel that there is a considerable philosophical price attached to holding, on the contrary, *that existence logically implies actuality*: to hold this view costs its proponents some plausible and significant affirmations (i.e., they cannot make these affirmations): at least one out of the set {"Some state of affairs exists and is not the case", "*Being the case* is the actuality of states of affairs"}, and at least one out of the set {"Some property exists and is not exemplified by anything actual", "*Being exemplified by something actual* is the actuality of properties"}. If one is a rational person, one cannot affirm both sentences in either of these two sets and still believe that existence logically implies actuality. I am not denying, however, that some philosophers are perfectly happy to pay *whatever price it costs* to hold that existence logically implies actuality. And, who knows, perhaps they are right? (They would be right if it were simply *the truth* that existence logically implies actuality.)

The philosophical price for believing that existence logically implies actuality can still be increased: There seems nothing wrong with affirming that some possible world exists that is different from w_0 [the actual world, the World] and that is not actual – say, it is a world without war. Hence, once again, existence does not seem to logically imply actuality. In response to this, friends of the logical implication of actuality by existence – which, as we have seen, amounts to the logical equivalence of existence and actuality [because actuality logically implies existence] – may *deny the premise* by holding that there exists [there is] *no* possible world that is different from w_0 [which is a merely grammatical variant of this: *no* possible world different from w_0 exists].

Now, either there is a plurality of possible worlds or there is not. If there is a plurality of possible worlds, then all possible worlds in that plurality, except w_0, will be not actual (how

could any one of them be actual together with w_0 *and* contradiction be avoided?). *But*, are they all, except w_0, also *nonexistent*, as they would have to be if *no* possible world different from w_0 exists? This seems counterintuitive. After all, they all *are there* (in the plurality of possible worlds, together with w_0); so, they all *exist*, do they not?

If, however, there is no plurality of possible worlds, then w_0 – existent *and* actual (hence possible), no doubt – is the only possible world. Spinoza, in effect, believed this; but should *we* believe it, too? It is far from obvious that we should. A very severe form of determinism seems to threaten. Now, with some effort one can still, *even if* w_0 *is the only possible world*, rationally assume that it is *not* necessary [*not* in the strictest sense necessary] that w_0 is actual [that this option *with* w_0 *being the only possible world* is available for w_0 was already suggested in Chapter 1, which chapter also laid the groundwork for being able to adopt it for w_0: necessity *need not* be truth-in-every-possible-world, "world-absoluteness"], *thus* avoiding a form of determinism one is not likely to favor even if one is attracted to determinism, to some form of it or other. But if w_0 is the only possible world, then the contradictorily opposing alternative to w_0's being actual is not that some possible world other than w_0 is actual, it being *presupposed* that precisely *one* possible world out of a plurality of possible worlds is actual; *then* the contradictorily opposing alternative to w_0's being actual is simply that *no* possible world is actual; and the contradictorily opposing alternative to no possible world being actual is, precisely, that w_0 is actual. And this – given that w_0, while being possibly actual, is not necessarily actual – is just as if a board game can be *played* (and "w_0", the only possible way to play the game, is *actual*) and also can be *not played* (and "w_0", the only possible way to play the game, is *not actual*), but if it is played, it can only be played *in one completely determined way* (which is "w_0", the only possible way to play the game); a *strange* board game that would be, and certainly one we would not much care to play (not at all care to play if all the steps of the game were easily foreseeable in addition to being determined: such a game would perfectly *bore* us) – because of its *determinism* (which determinism, although it is not quite as severe as the first-described determinism in this paragraph, is still "bad enough").

Should one assume that *no* possible world different from w_0 exists, just to be able to uphold that existence logically implies actuality? In fact, for *this*, one would have to assume, as we have just seen, not only that no possible world different from (the possible and actual world) w_0 *exists*, but something which is (at least prima facie) logically stronger, namely, that

w_0 is the only possible world – *just* to be able to uphold that existence logically implies actuality. That assumption, in view of its consequences [*other* than *existence logically implies actuality*], seems too high a price to pay for the object of one's desire: that the logical implication of actuality by existence remain unrefuted. Much better rationally, though still not good philosophy (at least not uncontroversially good philosophy), is this: to bite the bullet and declare that, no matter how many possible words there are in addition to w_0, *all* of them are as actual as they are existent; then, if there should be more possible worlds than just w_0, contradiction will be avoided by declaring that the *basic*, modally unfortified concept of truth, though seemingly nonrelative in application, is in fact, *basic* as it is, always implicitly (i.e., indexically) relative to a certain possible world *w* (which world is always existent *and* actual, just like w_0). Then, though an actual world *w* – w_0, say – makes *A* true, and another *actual* world *w´* makes non-*A* true, one cannot conclude that *A* & non-*A* is true; one can only conclude that *A* is true relative to *w*, and non-*A* true relative to *w´* – which is not a contradiction.

51. Readers may wish to have a close look at, and an explicit exposition of, the logical steps involved in the second-to-last paragraph that lead to the conclusion: "the contradictorily opposing alternative to w_0's being actual is simply that *no* possible world is actual; and the contradictorily opposing alternative to no possible world being actual is, precisely, that w_0 is actual". Here are those steps – but a definition comes first:

That A is contradictorily opposed to *that B* $=_{Def}$ *A* if, and only if, not *B*. (The "that"-phrases may be replaced by more idiomatic nominalizations – if the nominalizations are logically equivalent to the "that"-phrases.)

Then, given that w_0 is the only possible world, it follows logically: No possible world is actual if, and only if, w_0 is not actual; that is (in other words): That no possible world is actual is contradictorily opposed to w_0 being actual; and it follows logically: w_0 is actual if, and only if, some possible world is actual, that is: That w_0 is actual is contradictorily opposed to no possible world being actual (since "Some possible world is actual" is logically equivalent to "It is not so that no possible world is actual"). Moreover, given that w_0 is the only possible world, it is no doubt *logically necessary* that w_0 is the only possible world; hence, given the logical relations already established, it follows logically: *It is logically necessary*: No possible world is actual if, and only if, w_0 is not actual and *It is logically necessary*: That no possible world is actual is contradictorily opposed to w_0 being actual; and it follows logically: *It is logically necessary*: w_0 is actual if, and only if, some possible world is actual and *It is logically necessary*: That w_0 is actual is contradictorily opposed to no possible world being actual.

Now, since w_0 is actual, it is not logically necessary that w_0 is not actual. Suppose it is also not logically necessary that w_0 is actual. By *It is logically necessary*: w_0 is actual if, and only if, some possible world is actual (already established) it follows that it is neither logically necessary that some possible world is actual nor logically

necessary that no possible world is actual. With this, finally, all elements have been collected for establishing: That no possible world is actual is *the* contradictorily opposing *alternative* to w_0 being actual [the last required, and established, element for this is *this*: that no possible world is actual is just as contingent as that w_0 is actual]; and That w_0 is actual is *the* contradictorily opposing *alternative* to no possible world being actual [the last required, and established, element for this is *this*: that w_0 is actual is just as contingent as that no possible world is actual]. [Why do we have "*the* contradictorily opposing alternative …" and not merely "*a* contradictorily opposing alternative …"? The reason is this: the singular terms "that no possible world is actual / no possible world being actual" and "that w_0 is actual / w_0 being actual" are taken to designate *states of affairs*. And there is only *one*, not more than one, state of affairs *X* for which it is true: *It is logically necessary*: *X* is contradictorily opposed to w_0 being actual; and only one, not more than one, state of affairs *Y* for which it is true: *It is logically necessary*: *Y* is contradictorily opposed to no possible world being actual.]

Finally, here is one more argument against the logical implication of "*x* is actual" by "*x* exists", one that addresses the largest group among those who think that "*x* exists" logically implies "*x* is actual". The thinkers in that group all believe *that, necessarily, everything exists*, be it because they interpret "*x* exists" to mean the same as "*x* is identical with something", or be it because they interpret "*x* exists" to mean the same as "*x* belongs to *the universe of discourse* [i.e., the field of quantification and reference]", this latter interpretation being subject to the following three conditions: (i), *which plurality* [or in an extreme, limiting case: singularity] *in concreto* is *the universe of discourse* is taken to be relative to possible worlds [i.e., is taken to be determined by them individually – and *varyingly*, as seems only reasonable to assume]; (ii), the force of the quantifiers – "every", "some", – is taken to be implicitly relative to the universe of discourse *of the context-relevant* possible world, that is: "every/some *x*" $=_{Def}$ "every/some *x* in the universe of discourse [*of the context-relevant possible world*]"; *and* (iii), possible-world-semantics is taken to be the all-sufficient framework for the analysis of modality.

52. The two interpretations of "*x* exists" differ significantly. Both make true "*Necessarily*, everything exists", but the first interpretation ["*x* exists" := "*x* is identical with something"] also makes true "Everything *necessarily* exists", while the second interpretation ["*x* exists" := "*x* belongs to the universe of discourse"] does not [*the universe of discourse* being relative to possible worlds, and the force of the quantifiers being implicitly relative to the universe of discourse of *the context-relevant possible world*, and possible-world-semantics being taken to be the all-sufficient framework for the analysis of modality]. For, the second interpretation captures my (and, presumably, every actual human being's) *natural* intuition of existing but not necessarily existing, in the following way: I belong to the universe of discourse of w_0, but I do not belong to the universe of discourse of some

other possible world *w´*. Therefore, according to the second interpretation, some *x* (I) exists and it is not necessary that *x* exists [w_0 being the context-relevant possible world], and therefore "Not everything necessarily exists" is true, "Everything necessarily exists" is false.

Now, perhaps it is true that, necessarily, everything *exists*, although, as is well known, Alexius Meinong did not think so: he believed that some things do not exist.

53. Note that, whatever Meinong's countless disparagers may say, Meinong did not believe *that some things exist that do not exist*, or *that there exists something that does not exist*. If these two belief-contents are to be as patently absurd as Meinong's disparagers like them to be, then, in each of the two, the believer must take the two occurrences of "exist" to express *the same concept of existence*. But Meinong did not commit such a blunder – it is safe to say: never ever.

But is it also true that, necessarily, everything is *actual*? At least, one will have to admit that it is *not obvious* that "Necessarily, everything is actual" follows logically [analytically] from "Necessarily, everything exists". *But* then it is also *not obvious* that "*x* exists" logically implies "*x* is actual" (because from "*x* exists" logically implying "x is actual" it obviously follows that it is logically true that everything that exists is actual, and from this, obviously, that "Necessarily, everything exists" logically implies "Necessarily, everything is actual"; if the beginning of this obvious line of logical deduction is obvious, so must be its end; in other words: if its end is *not obvious*, so must be its beginning: *not obvious*). *And*, if it is *not obvious* that "x exists" logically implies "x is actual", then it is *not true* that "x exists" logically implies "x is actual"; for the (proposition of) logical implication under consideration certainly belongs to those that are obvious if they are true.

The – *without analysis* confusing – truth in this matter seems to be this: There are *two different concepts* that are relevant here – they are not even logically equivalent; let them be designated, neutrally, by "concept *Alpha*" and "concept *Beta*"; and let it be noted that concept *Alpha* logically contains concept *Beta* (thus, from *Alpha* being true of something, it follows logically that *Beta*, too, is true of it). And there are two predicates (*first-order* predicates, to be perfectly precise) that are relevant here: "*x* exists" and "*x* is actual". There are the following two facts about natural-language-semantics [or: *ordinary*-language-semantics]:

I. "*x* is actual" always expresses concept *Alpha*.

II. "*x* exists" expresses concept *Alpha* on many occasions: the *Alpha*-occasions; on other occasions – the *Beta*-occasions –, it expresses concept *Beta*.

An example of an *Alpha*-occasion is this: "I exist, but I do not necessarily exist [I say]. I might not have existed [while still being something]. It follows that it is possible that something [an example being myself] does not exist."

54. In Kripkean modal predicate logic (cf. what is called "the second interpretation" – of "*x* exists" – in note **52** and is described immediately previous to note **52**), the inference of "It is possible that something does not exist" from "I might not have existed" is a fallacy (no wonder, since "It is necessary that everything exists" is a logical truth in Kripkean modal predicate logic), whereas it is of course *not generally* a fallacy in that logic to infer "It is possible that something is not *F*" from "*N* might not have been *F*". Instead of accepting the fallaciousness of the said inference – which inference, *intuitively*, is perfectly valid –, one can just as justifiedly claim that Kripkean modal predicate logic fails to capture a central aspect of logically correct modal discourse.

An example of a *Beta*-occasion is this: "Possible worlds exist, all of them. Each of them is [identical with] something, that is: it exists. And everything exists necessarily, since everything is necessarily [identical with] something. And, of course, it is also necessary that everything exists, it being necessary that everything is [identical with] something."

The duality in the use of the predicate "*x* exists" – there being *Alpha*-occasions for its use and also *Beta*-occasions – is widely *not* recognized, and if recognized, *not* accepted. Many philosophers firmly believe *that* "*x* exists" *must be univocal*. Now, for the sake of avoiding unclarity and confusion at least in philosophical contexts, one *can* agree [it is not irrational to agree] that "*x* exists" *ought to be* univocal at least in philosophical contexts. Yet, there are two *natural* ways of achieving this (*and* there is also an *artificial* way; see below): *One*, let "x exists" always, in philosophical contexts, express the *Alpha*-concept; consequently, "*x* exists" turns out to be a synonym of "*x* is actual" *after all* (though only in philosophical contexts) – after *all* the arguments that have been offered in this chapter against the logical equivalence of these two predicates and, therefore, against their synonymy. *Two*, let "*x* exists" always, in philosophical contexts, express the *Beta*-concept; consequently, "*x* exists" turns out to be neither synonymous nor logically equivalent with "*x* is actual" (which outcome is certainly favored by what has gone before in this chapter), but to be synonymous – or at least logically equivalent – with "*x* is identical with something".

However, it is one of the more curious phenomena in the history of philosophy that most philosophers of recent times, if at all interested in the topic, accept neither way *One* nor way *Two*, but a way of making "*x* exists" univocal that combines truth-claims regarding existence which each belong to one but not to the other of the two ways, *One* and *Two*: Belonging to *One*, but not to *Two*, it is "Something does not necessarily exist" [according to *One*, this is very likely true; according to *Two*, it is indubitably false]; belonging to *Two*, but not to *One*, it is "It is necessary that everything exists" [according to *Two*, this is indubitably true; according to *One*, it is very likely false]. This third, syncretistic way of making "*x* exists" univocal is a highly artificial way, a way which could only have been thought up by a master of logical conceptual engineering.

55. For the logico-semantical theory that underlies this artificial – and also somewhat counterintuitive – way (regarding the counterintuitivity, cf. note **54**), see, in the paragraph preceding note **52,** *t*he description of what was called, in note **52**, the "second interpretation" [of the existence-predicate *if* "It is necessary that everything exists" is taken to be true].

According to this artificial way, "*x* exists" – taken to be univocal in philosophical contexts – always, in philosophical contexts, expresses neither concept *Alpha* nor concept *Beta*, but a third concept: concept *Gamma*, a concept rather more remote from "natural" [or: "ordinary"] discourse than *Alpha* and *Beta* – just like *the mule* is more remote from untouched nature than *the donkey* and *the horse* (yet *the mule*, due to its donkey-horse-descent, has, from the *human*, the *[agri-]cultural* point of view, some advantages over *the donkey* and *the horse*).

56. And this is not the end of it. Some philosophers – friends of so-called "free logic" – advocate that "*x* exists" has [normal] object-referring, or: "ontological", significance only in statements where the variable "*x*" [for example] is bound by a quantifier paired with that variable ("some *x*", "all *x*", "every *x*", "any *x*", "no *x*", and whatnot); moreover, even this remainder of ontological significance is usually taken to be somewhat limited, since "Everything exists" [or: "For every *x*: *x* exists"] is a logical truth in this approach, whereas "Something exists" [or: "For some *x*: *x* exists"] usually is *not* a logical truth in it [and therewith the departure from classical predicate logic is manifest: the – in classical predicate logic – logically valid inference of "Something *F*s" from "Everything *F*s" turns out to be *not* logically valid]. If, however, the variable "*x*" in "*x* exists" is replaced by a proper name or a definite description *N*, resulting in "*N* exists", then such a statement is taken to have *no* [normal] object-referring significance (contrary to appearances!); rather, "*N* exists" is taken to mean, *metalinguistically*, that *N* (the proper name, the definite description) *refers to something*. Thus, "*N* exists" can be false (if *N* does

not refer to anything), and therefore, "*N* does not exist" can be true – *while*, at the same time, "Everything exists" is a logical truth [again the departure from classical predicate logic is manifest]. Friends of "free logic" are perfectly happy with this, since this is precisely what they want in view of what they think is the philosophically best practice in handling the existence predicate.

It is understandable, from the philosophical point of view, that univocity is desired for "*x* exists"; what is not understandable from the philosophical point of view is this: that, if a way of univocity has been decided on for "*x* exists", the other ways for it to be univocal are thrown into oblivion. After all, the three concepts – *Alpha*, *Beta*, *Gamma* – are there, and known, and it is even known how to express them in English. For one of the concepts, *Alpha*, there is even a simple, idiomatic predicate in English: "*x* is actual" [or, if one desires greater explicitness, "*x* is an actual being"]. *Alpha*, *Beta*, and *Gamma* are interesting concepts, and each of them has some claim to being *the* concept "*x* exists" expresses. This being so, the intellectual enmity with which many philosophers look especially at *Alpha* – at the *true* concept of *actuality* – seems strange.

This enmity seems strange only *prima facie*; the reason for it is not far to seek: In the eyes of many philosophers, *Alpha* – as distinguished from the concepts *Beta* and *Gamma*, which everybody acknowledges to be harmless– is a box of Pandora in ontology. *Acknowledging Alpha*, the *true* concept of actuality, *not* ignoring it, and *not* identifying it with *Beta* or with *Gamma* (though *Alpha*, *in truth*, is identical with neither), and *not* declaring that one has no idea what the predicate "*x* is actual" is supposed to mean (though "*x* is actual" has a meaning, of course: it is the *same* meaning as "*x* is possible, but not merely possible" has, where "*x* is merely possible" it taken to be a primitive predicate) – *acknowledging Alpha*, I say, is for those philosophers the penultimate step to opening "the box of Pandora", and they foresee that, due to overwhelming intellectual temptation, the ultimate step, *the opening*, will not fail to follow, and with horror they envision it: a pandemonium of "evils in ontology" is let out, a flood of "illegal immigrants", countless *allegedly* non-actual [in the true sense non-actual] entities of various ontological categories: non-actual states of affairs, non-actual properties, non-actual individuals, non-actual events, non-actual persons … . In the eyes of those philosophers, this is worse, much worse, than merely acknowledging that there are other types of entities than *individuals* (or *particulars*): that other ontological categories beside the category of *individuals* are nonempty (though even acknowledging this much is bad enough in their eyes).

Indeed, *once* the concept *Alpha* is *acknowledged*, the "illegal immigrants" are hard to fend off; they and their non-actuality seep in through every crevice. Is not every *y* that is caused *non-actual* before it is caused? Yes, indeed, it *is* non-actual before it is caused! No matter: Those philosophers repudiate the true concept of actuality [*Alpha*], and therewith the true concept of non-actuality*, so that* they do not have to face non-actual [in the true sense non-actual] entities – *although*, in consequence (as just seen), they have to look for a concept of causation that has nothing to do with *making actual*, in spite of all the many indications that *making actual* is the *true* concept of causation (it would be rather difficult to simply forget about causation – ignore it – even if one managed to simply forget about *Alpha*).

At no point in metaphysics is it more doubtful that human reason's *penultimate* [or: *first*] *intention* (embracing what is, *in itself*, most pleasing to human reason *in itself;* what would be true if human reason has *its way*) *has the last word* – and thus is identical with human reason's *ultimate* [or: *second*] *intention* (embracing what human reason considers to be the truth *after all*) – than when it comes to the claim "The simpler ontology is the better ontology": to this *alleged* principle of human reason. There can be no doubt about it: an ontology *nearer to the truth* is, in all respects, a *better* ontology than an ontology that is less near to the truth (but, of course, *what is the truth* is a moot question, at least initially); thus, *in the ultimate consideration*, "better ontology" must, no doubt, be taken to mean *ontology nearer to the truth*. Now, is a simpler ontology, qua being simpler, nearer to the truth than a less simple one? This seems rather doubtful, seeing that there is no inner – or: logical – connection between truth and simplicity, the well-known dictum *simplex sigillum veri* notwithstanding (and the philosophy of Parmenides *notwithstanding*). Thus, it can only be doubtful, very doubtful that the simpler ontology is (*simpliciter*: *qua* being simpler) the better ontology.

A close – but less lapidary, more sophisticated, more careful – relative of "The simpler ontology is the better ontology" is the maxim known as "Ockham's Razor": *Entia non sunt multiplicanda praeter necessitatem* – "Entities are not to be multiplied beyond necessity". Still, no maxim in metaphysics is more naively – or: more thoughtlessly – applied than this one. The usual naiveté becomes manifest as soon as one asks what "beyond necessity" is supposed to mean. Since the maxim is to be applied by *us* human beings – *presupposed* to be rational thinkers – under conditions that *we* – rational thinkers – deem to be *given*, Ockham's Razor amounts to this: "Entities are not to be multiplied *by us* [in our thought] if the multiplying goes beyond what *we deem* to be necessary." This subjectivization, however, is matched

by an objectivization: The objective cognitive relevancy of Ockham's Razor requires that "necessary" in Ockham's Razor expresses *objective necessity*, or in other words: *necessity in the strictest sense* (because *there is no other [true, objective] necessity than strictest necessity*, as has been confessed in Chapter 2). Consequently, *one* legitimate [rationally allowed] interpretation of Ockham's Razor is this: "We ought not to assume that 'N exists' is true if we do not deem it to be necessary in the strictest sense that 'N exists' is true", or in other words: "We may assume that 'N exists' is true only if we deem it to be necessary in the strictest sense that 'N exists' is true."

This is a legitimate interpretation of Ockham's Razor, but I do not believe that anybody in the past or present of philosophy has had this *absolute* conception of it. In its absolute conception, Ockham's Razor is much too *strict*: much too *restrictive*, even if it be presupposed – as it is presupposed for logically optimized languages – that N – a proper name, a definite description, schematically symbolized by the letter "N" – cannot fail to have a referent. The excessive strictness can be evaded by embracing the just-mentioned presupposition and by choosing, under that presupposition, the *Beta*-interpretation of "*x* exists" – according to which "x exists" means the same as "x is identical with something". But the effect of these measures is the trivialization of Ockham's Razor: is its becoming useless for purposes of ontological restriction; for, as a result of these measures, Ockham's Razor amounts to this: "We ought not to assume that 'N is identical with something' is true [N being guaranteed to have a referent] if we do not deem it to be necessary in the strictest sense that 'N is identical with something' is true." This is true enough (since nothing can be identical with something without being *necessarily* identical with something), but it cannot be used for the justification of *ontological restriction* (usually called: "ontological economy", "ontological thriftiness", and, if a tendency in the direction of excessiveness is discerned, "ontological parsimony").

Most certainly, in the past and present of philosophy, Ockham's Razor has not been accepted *in its absolute conception* for use in ontological restriction; it has widely been accepted for use in ontological restriction *in its relative conception*. In the relative conception of Ockham's Razor, the "necessity" the maxim speaks about is the necessity – *strictest* necessity – of a *relationship*, of a teleological relativity. The general form of the (interpreted, explicated) maxim in the relative conception is this: "We ought not to assume that 'N exists' is true if we do not deem it to be necessary [in the strictest sense] *for purpose P* that 'N exists' is true." But now the deeply problematic nature of Ockham's Razor stands revealed; for, what

specific phrase it to be substituted for the schematic placeholder "*for purpose P*"? Any choice to be made here seems perfectly arbitrary. Countless different choices might be made, leading to countless non-equivalent versions of Ockham's Razor.

There are, in fact, two substitutions for the placeholder which do not seem to be arbitrary. They result in the following two versions of Ockham's Razor: (α) "We [rational human beings] ought not to assume that 'N exists' is true if we do not deem it to be necessary [in the strictest sense] *for the acquisition of comprehensive knowledge* that 'N exists' is true." (β) "We [rational human beings] ought not to assume that 'N exists' is true if we do not deem it to be necessary [in the strictest sense] *for the acquisition of comprehensive empirico-logico-scientific knowledge* that 'N exists' is true." [In both versions, "comprehensive" must, in effect, be taken to be short for "as comprehensive as humanly possible".] However, version (α) of the maxim is useless for ontological restriction; for, of course, one [rational] thinker is likely to deem the existence of N to be *not necessary* for the acquisition of comprehensive knowledge, while another [rational] thinker is likely to deem the existence of N to be, indeed, *necessary* for the acquisition of comprehensive knowledge.

Version (β) is more specific, and it does *to some extent* help some people to justify certain beliefs that they have (that they have *anyhow*, with or without the application of Ockham's Razor), say, the belief that "Archangel Gabriel exists" is not true, or, for that matter, the belief that "God exists" is not true. This – in fact *rather limited* – help in justification comes about as follows: Those people – no doubt rational thinkers – do not deem it [in the strictest sense] necessary for the acquisition of comprehensive empirico-logico-scientific knowledge that "Archangel Gabriel exists" is true (and who is to gainsay them?). Following Ockham's Razor [in its relative conception] in its (β)-version, they conclude that they ought not to assume that "Archangel Gabriel exists" is true, and they (gladly) follow this mandate – which they believe to be a mandate of human reason – and do not assume that "Archangel Gabriel exists" is true (while orthodox adherents of the Abrahamitic religions *do* assume – indeed believe – that "Archangel Gabriel exists" is true). This is as far as one can go with Ockham's Razor, version (β). But, of course, *not to assume that* "Archangel Gabriel exists" *is true* is not the same as – rather, it is logically *less than* – *to assume that* "Archangel Gabriel exists" *is not true*, let alone the same as *to believe that* "Archangel Gabriel exists" *is not true* – which, however, is what those people would like to be justified in, since they *in fact* believe that "Archangel Gabriel exists" is not true. For reaching this justification, Ockham's Razor can help

them along *somewhat*, but it is far from "giving them a lift" all the way (as has just been made clear).

57. *Believing that* "Archangel Gabriel exists" *is not true* amounts to either one of the following two alternatives: (i) believing that "Archangel Gabriel" does not refer to anything; (ii) believing that "Archangel Gabriel" does refer to something – and to nothing else besides (since "Archangel Gabriel" is a singular term: for singular terms it is true that they refer to precisely one item if they refer to some item) – but that this something is not actual. Believers in the non-truth of "Archangel Gabriel exists" are rather more likely to opt for alternative (i) than for alternative (ii).

Indeed, what will friends of Ockham's Razor in its (β)-version – the, I dare say, rationally most attractive formulation/interpretation of the maxim – reply when confronted with someone who asserts, "I do not deem it to be necessary [in the strictest sense] for the acquisition of comprehensive empirico-logico-scientific knowledge that 'Archangel Gabriel exists' is true, but nevertheless I do assume and believe that it is true"? – Rather often, I suspect, there is the outward – so to speak, "insincere" – reply the friends of the Razor make, *and* there is the – "sincere", "real" – reply they give in their hearts. The outward reply is this: "You are acting contrary to the mandate of Ockham's Razor, you are being irrational"; the reply given in their hearts is this: "You fool, Archangel Gabriel doesn't exist!" Thus, Ockham's Razor is rather often, I suspect, not even in its rationally most attractive formulation *truly* – "for its own sake" – a guiding principle of human reason [if one takes it to be such a principle, one will naturally consider it to be a refined spin-off of the basically well-intended but for acceptance too crude would-be principle of human reason "The simpler ontology is the better ontology"]; it is a guiding principle of human reason not even according to human reason's *first intention*; it is, from the start, merely an easily seen through device for *rationalizing* beliefs that one has *anyhow*.

Empirico-logico-scientific knowledge has for those who use Ockham's Razor in version (β) – ostensibly "for its [the Razor's] own sake" – the highest prestige and authority. Yet, it can also have the highest prestige and authority for people who totally abstain from letting themselves be guided by Ockham's Razor, version (β). The crucial question to be asked – once the *ruling* question is asked: "Shall I follow Ockham's Razor, version (β), or shall I not?" – is this: "Is *all* the knowledge that is attainable for us empirico-logico-scientific knowledge

[including, as a special part, logico-mathematical knowledge]?" The truth is: The objectively true answer to this crucial question is *unknown*. (For more on this, see Chapter 14.)

58. If you define *knowledge* as *empirico-logico-scientific knowledge*, then, of course, the true answer to the question is *yes* – trivially and uninterestingly so; but if you define *knowledge* simply as *true belief*, then the true answer to the question is *no*.

How so? Consider "God exists" and "God does not exist"; some among us believe that "God exists" is true", others among us believe that "God does not exist" is true. Now, either "God exists" or "God does not exist" is true; hence, if knowledge is simply *true belief*, some of us know that God exists, *or* some of us know that God does not exist. In the first case, there is knowledge attainable for us which certainly is *not* empirico-logico-scientific knowledge [empirico-logico-scientific knowledge being true belief where the belief is about a proposition that is amenable to empirico-logico-scientific cognitive methods and where the belief is acquired by using empirico-logico-scientific cognitive methods]. In the second case, again, there is knowledge attainable for us which is *not* empirico-logico-scientific knowledge [for *science* has certainly not shown that God does not exist, whatever some epistemologically and ontologically naive enthusiasts may claim to the contrary]. And therefore: there is knowledge attainable for us which is *not* empirico-logico-scientific knowledge.

If the answer one gives to the question in point – "the crucial question" – is *no*, then one will stay away from Ockham's Razor, version (β), because applying it can be harmful for the attainment of knowledge. If the answer one gives is *yes*, then it is likely that one will, on fitting occasions, use Ockham's Razor, version (β); however, one's ultimate, *real* motivation in doing so will not be a love of – or respect for – simplicity, economy, thriftiness in ontology, as the gloss traditionally connected with Ockham's Razor has it; one's ultimate motivation will be an imperative exclusive ontological *predilection for* certain contents: *for* the contents cognitively acquired by empirico-logico-scientific methods and *for* (a priori highly cherished) metaphysical contents: materialism, atheism; the acceptance of the latter contents is (uncritically: enthusiastically) taken to be made ineluctable by the acceptance of the former contents, in spite of the former being of *empirico*-logico-scientific – *not* metaphysical – provenance. (This epistemological "condition" – nowadays widespread among the philosophers – is aptly called *scientific* [better: *scientistic*] *naturalism*.)

59. Last but not least, there is also the following – prima facie merely "technical" – problem to Ockham's Razor, version (β): Suppose, (1a), we deem it to be necessary for the acquisition of comprehensive empirico-logico-scientific knowledge that either "N exists" or "N´ exists" is true, and suppose, (1b), we are correct in doing so: it *is* necessary for the acquisition of comprehensive empirico-logico-scientific knowledge that either "N exists" or

"N´ exists" is true. And suppose, (2a), we neither deem it to be necessary for the acquisition of comprehensive empirico-logico-scientific knowledge that "N exists" is true, nor that "N´ exists" is true, and suppose, (2b), we are correct in doing so: it *is* for the acquisition of comprehensive empirico-logico-scientific knowledge neither necessary that "N exists" is true nor necessary that "N´ exists" is true. Thus, according to Ockham's Razor, version (β), we ought not to assume that "N exists" is true, and we ought not to assume that "N´ exists" is true – *although* we *correctly* deem it to be necessary for the acquisition of comprehensive empirico-logico-scientific knowledge that either "N exists" or "N´ exists" is true [see suppositions (1a) and (1b)]. This situation is obviously not rationally satisfactory; for, if we followed the advice given by Ockham's Razor in its (β)-version – hence not assumed that "N exists" is true, and not assumed that "N´ exists" is true –, we would, in fact, act contrary to human reason's interest in the acquisition of comprehensive empirico-logico-scientific knowledge; Ockham's Razor, *here*, certainly breathes the spirit of theory-crippling ontological pusillanimity.

One might hold against this problematization of Ockham's Razor, version (β), that the described situation, though possible, is unrealistic: not likely to occur. But this objection does not have much force, in view of the fact that the so-called *empirical underdetermination* of existence claims is not uncommon in natural science – *underdetermination* which is such that although it is determined by employing empirico-logico-scientific methods that *either* N_1 *or* N_2 *or … or* N_k ($k \geq 2$) *exists*, it is not determined by employing empirico-logico-scientific methods, and for all we know will *never* be thus determined, whether N_i (for any i with $1 \leq i \leq k$) *exists*. It is not an affirmative, constructive response to a situation of empirical underdetermination of existence claims, not a response that *serves* – is fruitful for – the acquisition of comprehensive empirico-logico-scientific knowledge, *to abstain* from adopting any of the offered existence-options: *to abstain* from assuming the existence of N_1, of N_2, …, and finally also of N_k, as Ockham's Razor in its (β)-version tells us we should do (since we – scientifically versed as we are – certainly do not deem it to be necessary [in the strictest sense] for the acquisition of comprehensive empirico-logico-scientific knowledge that "N_i exists" is true, for any i with $1 \leq i \leq k$). Rather, the affirmative response is to make an existence claim for one of the N_i ($1 \leq i \leq k$); it is to claim the truth of "N_i exists" for one of the N_i, *notwithstanding* the empirical underdetermination of this claim and the consequent cognitive risk of making the claim (*despite* its empirical underdetermination).

11 What is the nature of consciousness?

For describing my own consciousness – explicitly qua *my own* consciousness – I use sentences of the following standard form: "It seems to me [now] *V*-ly that *A*"; a sentence of this standard form is a *consciousness-sentence of mine* if, and only if, the concrete substitute for "*V*" in it and the concrete substitute for "*A*" in it are *consciousness-appropriate* (for more on this, see the next two paragraphs). Consciousness-sentences of mine can be *concatenated* – by me – *with respect to the progress of time* by using the *concatenator* "And then …"; in this way, a – no doubt: incomplete – description of my consciousness *in the progress of time* can be given by me. Consciousness-sentences of mine can also be *accumulated* – by me – *with respect to a given time* by using the *accumulator* "And at the same time …"; in this way, a fuller – but, no doubt, incomplete – description of my consciousness *at a certain time* can be given by me. Always in describing my consciousness, I produce a fragment of a *phenomenology of consciousness*.

60. It is perhaps not unimportant to note that, although the purpose of consciousness-sentences of mine is to serve in the description of my consciousness, consciousness-sentences of mine may be true though I am unable, temporarily or permanently, to utter them, outwardly or inwardly. *Yes*, a consciousness-sentence is not automatically either true or false: for being either true or false, it requires a situation in which it is uttered by someone. However, though that situation must be real, it need not be a situation in which the sentence is really uttered; it suffices that the situation comprises a *virtual* utterer (but real person) – say, *me*. (And yes, *any* indexically descriptive sentence is not automatically either true or false: for being either true or false, it requires a situation in which it is uttered by someone. However, though that situation must be real, it need not be a situation in which the sentence is really uttered; it suffices that the situation comprises a *virtual* utterer [but real person].)

A concrete adjective – for example, "visual", "tactile", "algoceptive" – is to be substituted for "*V*" in "It seems to me *V*-ly that *A*" so that the result of the substitution – an adverb (ending with "ly") – stands for a specific *mode of consciousness*. If the result of such a substitution turns out to be *not* an adverb that stands for a specific mode of consciousness [this, for example, is the case if "necessary" is substituted for "*V*"], then the employed concrete substitute for "*V*" [that is: the adjective substituted for "*V*"] is *not* consciousness-appropriate; *otherwise* that substitute is *consciousness-appropriate*. A special and especially important consciousness-appropriate concrete substitute for "*V*" in "It seems to me *V*-ly that *A*" is "propri-

oceptive", here not taken in its dictionary-meaning, but in the sense of "perceptive of one's own consciousness".

A concrete sentence is to be substituted for "*A*" in "It seems to me *V*-ly that *A*" so that the result of the substitution – a "that"-phrase – stands for a specific *object of consciousness*. The result of such a substitution stands for an object of consciousness – or in other words: the concrete substitute for "*A*" employed in such a substitution [that is: the sentence substituted for "*A*"] is *consciousness-appropriate* – if, and only if, that substitute is a [well-formed] descriptive [*purely* descriptive] sentence. A descriptive sentence that logically essentially involves the pronoun "I" or [and/or] any of its grammatical derivatives ["my", "mine", "me"] is an *I-description*. The consciousness-sentences of mine are divided into *those* that have an I-description *in their object-place* [which place is the place of "*A*" in their form; which form is "It seems to me *V*-ly that *A*"] and *those* that do not.

If a sentence [of the form] "It seems to me *V*-ly that *A*" is a consciousness-sentence of mine, then it always entails [logically] "It seems to me that *A*". It does not always entail "It is true that *A*", nor does it always entail "I believe that [it is true that] *A*". *However*, in some instances, a sentence "It seems to me *V*-ly that *A*" entails not only "It seems to me that *A*" but also "I believe that *A*" and "It is true that *A*": "It seems to me *algoceptively* [and hence *proprioceptively*] that I have a splitting headache" entails not only "It seems to me that I have a splitting headache" but also "I [occurrently in consciousness, *not* dispositionally] believe that I have a splitting headache" and "It is true that I have a splitting headache".

Moreover: Let "It seems to me *V*-ly that *A*" be a consciousness-sentence of mine; then "It seems to me *V*-ly that *A*" entails "It seems to me *proprioceptively* that it seems to me *V*-ly that *A*", and "It does not seem to me *V*-ly that *A*" entails "It seems to me *proprioceptively* that it does not seem to me *V*-ly that *A*". And the converses of these two statements of logical entailment are likewise true. *Similarly* (only *similarly*) we have for the concept of *unspecific seeming*: "It seems to me that *A*" entails "It seems to me that it seems to me that *A*", *and* vice versa; and "It does not seem to me that *A*" entails "It seems to me that it does not seem to me that *A*", *and* vice versa (for just any descriptive sentence substituted for "*A*").

In contrast, "It seems to me *V*-ly that *A*" does not – *not* always: *not* for just any consciousness-appropriate substitute for "*V*" and just any consciousness-appropriate substitute for "*A*" – entail "It seems to me *V*-ly that it seems to me *V*-ly that *A*"; nor does "It does not seem to me *V*-ly that *A*" entail – always ["always" being understood as has just been specified] – "It

seems to me *V*-ly that it does not seem to me *V*-ly that *A*". (However, "It seems to me proprioceptively that I have a splitting headache" does entail "It seems to me proprioceptively that it seems to me proprioceptively that I have a splitting headache", *and* vice versa; and "It does not seem to me proprioceptively that I have a splitting headache" does entail "It seems to me proprioceptively that it does not seem to me proprioceptively that I have a splitting headache", *and* vice versa.)

Furthermore, there obtain the following logical relationships: Let "It seems to me proprioceptively that *A*" be a consciousness-sentence of mine; then "It seems to me proprioceptively that *A*" entails "I [occurrently] believe that *A*" and "It is true that *A*", whereas neither "I [occurrently] believe that *A*" nor "It is true that *A*" entails – always: for just any descriptive sentence substituted for "*A*" – "It seems to me proprioceptively that *A*". It is evident: If these entailment-assertions are to be true, then "proprioceptive" must be understood to logically imply not only "directed at oneself" but also "directed at the manifest facts of one's own consciousness". If the notion of belief one has in mind is [as previously in this chapter] *occurrent belief* (and not *dispositional belief*), then – last but not least – the following logical relationships obtain: "I believe that *A*" entails (always) "It seems to me proprioceptively that I believe that *A*", and "It seems to me proprioceptively that I believe that *A*" entails (always) "I believe that *A*".

My sentences of *unspecific seeming* – sentences of the form "It seems to *me* that *A*", "*A*" standing for just any descriptive sentence – are not only closely related to *my* consciousness-sentences (in other words, to *my* sentences of *in-consciousness-specified seeming*: to *the consciousness-sentences of mine* as already defined), they are also closely related to *my* sentences of *belief*: sentences of the form "I believe that *A*", "*A*" standing for just any descriptive sentence (I will leave this tag tacit from now on).

61. Note that *my* consciousness-sentences, *my* sentences of unspecific seeming, and *my* sentences of belief can all be subjected to the – already described – time-related logical operations of *concatenation* [for given successive moments] and *accumulation* [at a given moment].

In fact, in everyday language, "It seems to me that …" is often used when one might as well have said "I believe that …". However, this is not the sense that "It seems to me that …" has *here*, *where* "It seems to me that *A*" neither entails [entails no matter which descriptive sentence is substituted for "*A*": always entails] "I believe that *A*", nor is [always] entailed by it.

Here, "seems" in "It seems to me that *A*" – and more distinctly in "It seems to me *V*-ly that *A*" – is the "seems" used for describing *appearances*, some of which – the [in the original sense] *sensational* ones – Kant called "Erscheinungen [*Ger.*]" or "Phainomena [*Gr.*]" in his *Critique of Pure Reason*, and all of which (there are also appearances that are *not* sensational) Husserl explored methodically and systematically in that new science – *science* broadly speaking – he strove to establish (unfortunately, without success); which science he dubbed "Phenomenology" [or in German: "Phänomenologie"]. For the sake of avoiding certain misunderstandings, one can use the slightly more explicit forms of expression "It *appears* to me *V*-ly that *A*" and "It *appears* to me that *A*" instead of their slightly less explicit synonyms (*technical* synonyms) "It *seems* to me *V*-ly that A" and "It *seems* to me that *A*".

As so many other philosophically important ideas, the idea of knowledge can be interpreted *in many ways* – leading to a plethora of concepts of knowledge. Among the many concepts of knowledge (*more* on this topic can be found in Chapter 14), the three-stage-concept of *evidentially justified occurrent knowledge* is especially salient and important:

> *x* knows [occurrently; evidentially justifiedly] that *A* $=_{\text{Def}}$ It appears to *x clearly and distinctly* that *A*, *and x* [occurrently] believes that *A* because it appears to *x* clearly and distinctly that *A*, *and* it is true that *A*.

The *definiens* of this definition can be abbreviated – that is, can be logically equivalently replaced – by "*x* believes that *A* because it clearly and distinctly appears to *x* that *A*, and it is true that *A*". [This is logically innocuous, and indeed mere abbreviation, because "*x* believes that *A* because it clearly and distinctly appears to *x* that *A*" logically entails "It appears to *x* clearly and distinctly that *A*".]

The schema "If *N* knows that *A*, then *N* knows that *N* knows that *A*" is a widely accepted schema (of logical truths) of epistemic logic. Given that one accepts that schema and the above definition, it follows that "I know that *A*" logically entails "I believe that I know that *A* because it clearly and distinctly appears to me that I know that *A*" [the rest – "and it is true that I know that *A*" – is a mere redundancy, since the logical entailment in question proceeds from "I know that *A*"]; and eliminating "know" from this latter (schematic) sentence – in accordance with the above definition – is apt to produce a certain dizziness in the mind (if not downright confusion).

62. This is what one gets: "I believe [*that* I know that *A*] because it clearly and distinctly appears to me [*that* I know that *A*]" $=_{Def}$ "I believe [*that* it appears to me clearly and distinctly that *A*, and *that* I believe that *A* because it appears to me clearly and distinctly that *A*, and *that* it is true that *A*] because it clearly and distinctly appears to me [*that* it appears to me clearly and distinctly that *A*, and *that* I believe that *A* because it appears to me clearly and distinctly that *A*, and *that* it is true that *A*]".

Thus, one might rather opt for the following simpler definition, which, however, does not contain an *explicit* element of justification in its *definiens*:

> *x* knows [occurrently; evidentially justifiedly] that *A* $=_{Def}$ It appears to *x clearly and distinctly* that *A*, *and x* [occurrently] believes that *A*, *and* it is true that *A*.

In both definitions, "*clearly and distinctly*" stands for a mode of consciousness that in one respect is quite nonspecific, in another respect quite specific. On the one hand, it is *quite nonspecific* because it can occur in combination with many other modes of consciousness: clearly and distinctly in the visual respect; clearly and distinctly in the tactile respect; clearly and distinctly in the cogitative respect; etc. On the other hand, it is *quite specific* because clearness and distinctness are *not* ubiquitous or even common modes of consciousness (especially *not* when it comes to recollecting and imagining).

According to the concept [or: concept*s*] of evidentially justified occurrent knowledge, I know that *A* only if it appears ["seems" in the sense intended] to me that *A*, in other words: my [evidentially justified occurrent] knowledge reaches – *currently* – maximally as far as my consciousness – *currently* – reaches. But this entails: My knowledge at no point in time reaches further than my consciousness reaches at that point in time. And this is not only true of me, it is also true of you and of any other entity with consciousness that is capable of [evidentially justified occurrent] knowledge (it is true of many nonhuman animals, for example). Moreover, according to the concept of evidentially justified occurrent knowledge (and this concept is certainly not some arbitrarily elected or artificially concocted concept of knowledge – far from it!), *without consciousness*, an entity knows, literally, *nothing*, never ever knows anything (and therefore can hardly be deemed "intelligent"); for nothing ever *appears* – let alone *clearly and distinctly* appears – to such an entity.

Nothing said in this chapter so far need be controversial. And, really, it cannot well be controversial whether there are *true* sentences of the form "It seems/appears to *N V*-ly that *A*"; I, for my part, know that there are, for example, many true sentences of the form "It seems/appears to me visually that *A*" in every second in which I am not asleep, a great many more such sentences than I could ever utter or form in my mind. I trust it is the same way with you (gentle readers).

What, then, is controversial about consciousness? It is this: Some – called "the dualists", maintaining "dualism" – claim that the reality of consciousness (as described by consciousness-sentences, mine and those of others) is a reality sui generis and is not reducible to physical reality (as described by physics); others – called "the physicalists", maintaining "physicalism" [not just physicalism regarding consciousness, but general physicalism] – claim that the reality of consciousness is *not* a reality sui generis and is reducible to physical reality. The obvious question here is this: What is "reducible to physical reality" supposed to mean? The question needs an intersubjectively binding answer; otherwise, the controversy between "the physicalists" and "the dualists" – with countless argumentations on either side offered in past, present, and future – may well go on *forever* (meaning: as long as humankind is going to last) simply because "the physicalists" never – in any case: never long enough – affirm of consciousness the same concept of reducibility to physical reality that "the dualists" deny of it.

The first idea of how the reality of consciousness might be reducible to physical reality is this:

> *Ψ-to-Φ-reduction 1a*
>
> Every *reality-descriptive* consciousness-sentence – every *either true or false* sentence of the form "It seems to *N V*-ly that *A*" with consciousness-appropriate substitutions for "*V*" and "*A*" – is *logically [analytically] equivalent* to some sentence of present-day or future physics.

63. Note that "reality-descriptive sentence" – meaning the same as "either true or false sentence" – entails (analytically; broadly logically) "descriptive sentence", but not vice versa: "I sit on a chair", for example, is a descriptive, but not reality-descriptive sentence – although it would indeed turn out to be a reality-descriptive sentence if it were considered in a specific situation of utterance.

It is important to note that the words "physics" is taken in a wide sense here: sentences of chemistry, biology, neurophysiology, ethology, etc. are all taken to be sentences of *physics*, although they may be far from being obviously translatable into a sentence of physics *in the narrow sense*.

Ψ-to-Φ-reduction 1a [logically] entails

> *Ψ-to-Φ-reduction 1b*
> Of every reality-descriptive consciousness-sentence it is *necessary* [in the strictest sense] *that it is equivalent* to some sentence of present-day or future physics.

Now, reality-descriptive consciousness-sentences, meaning what they mean, very definitely seem not to be logically or necessarily equivalent to any sentence of present-day or future physics. There is, of course, a great temptation, not entirely rare among the physicalists, to give to reality-descriptive consciousness-sentences a *new* meaning – formerly, a behavioral [or: ethological] meaning, nowadays, a neurophysiological meaning – so as to make such sentences *after all* logically and necessarily equivalent to sentences of present-day or future physics, connected with the hope that, in the end, the old meanings will be forgotten – by the population at large – or at least be considered fit only for fiction (which, qua fiction, is *not* reality-descriptive). But this temptation is a temptation to commit intellectual fraud. It is no justification for the envisioned meaning-change that it allegedly serves science and truth; for it certainly does not. Indeed, rather than resulting – implausibly – from inhibiting intellectual limitations: from a kind of *selective blindness*, advocating *Ψ/Φ-reduction 1a/b* appears to be an act of intellectual dishonesty committed in the name of an *ideology* (that of [general] physicalism).

In contrast to *Ψ-to-Φ-reduction 1a* and *1b*, the following is certainly true:

> *"Ψ-to-Φ-reduction"*
> Every reality-descriptive consciousness-sentence is *materially equivalent* to some sentence of present-day or future physics.

This is certainly true because, (a), every true consciousness-sentence is materially equivalent to – has the same truth-value as – the following sentence of present-day or future physics:

"The speed of light *in vacuo* is more than 200,000*m*/*s*"; and because, (b), every false consciousness-sentence is materially equivalent to – i.e., has the same truth-value as – the negation of that sentence. However, as the scare-quotes indicate, *"Ψ-to-Φ-reduction"*, though true, is far from establishing that the reality of consciousness is reducible to physical reality.

What one ought to be looking for – if one is drawn to physicalism – is a Ψ-to-Φ-reducibility-position *appropriately* in between *Ψ-to-Φ-reduction 1a/b* and *"Ψ-to-Φ-reduction"*, in other words: a position that is *both* sufficient for the task of Ψ-to-Φ-reduction *and* true (and *not* either sufficient for this task but false, or true but insufficient for it). However, any reducibility-position in between the noted extreme positions that is true [as a general equivalence-statement, disregarding the reduction-claim connected with it] is bound to work with merely *contingently true* equivalences, and contingently true equivalences can, at best, be sufficient for establishing *correlation*, not for effecting reduction. Physicalists cannot be content with *correlation*; for dualism would not be refuted if the following proved to be true:

> *Ψ-Φ-correlation*
>
> Every reality-descriptive consciousness-sentence is *interestingly* truth-value-correlated with some sentence of present-day or future physics.

64. Why is the claim that *Ψ-Φ-correlation* makes qualified by the adverb "*interestingly*"? The reason is this: There are countless ways of establishing a truth-value-correlation between the reality-descriptive consciousness-sentences and the sentences of present-day or future physics – most of which ways have as little cognitive value as *"Ψ-to-Φ-reduction*" has. Indeed, if the adverb "*interestingly*" were left out in it, *Ψ-Φ-correlation* would be logically equivalent with *"Ψ-to-Φ-reduction"*. But here is an example of an *interesting s*pecification of a truth-value-correlation regarding Ψ andΦ:

> *Ψ-Φ-neurocorrelation*
>
> Every reality-descriptive consciousness-sentence σ has *exactly one* neurological representative φ(σ) among the sentences of present-day or future physics, such that σ is materially equivalent to – has the same truth-value as – φ(σ). [Note that φ(σ) may be a very disjunctive and/or otherwise highly complex sentence; yet it must be a *sentence* and, therefore, have finite length. Note also that, given a reality-descriptive consciousness-sentence σ, there may be several, perhaps many, candidates for being its neurological representative φ(σ) (such that σ is materially equivalent to φ(σ)); in that case one can always choose one of the candidates – say, the simplest one – to be φ(σ).]

To establish Ψ-Φ-correlation qua Ψ-Φ-*neuro*correlation as true (at least for *human* consciousness) – *this* is the big task that neuroscience is strenuously working on. Interestingly, this research-program presupposes (the truth of) dualism at least as a working-hypothesis – contrary to the claim, over and over repeated by the physicalists, that dualism is inimical to science.

Though the situation is *as it is*, physicalists are far from giving up. At first, for each reality-descriptive consciousness-sentence, they were looking for a *sufficient and necessary* physical condition for it; *then*, talking of "supervenience", they were looking merely for a *sufficient* and true physical condition for each true reality-descriptive consciousness-sentence – as if this move could bring them any closer to the desired reducibility of the reality of consciousness to physical reality. Of course, it cannot bring them any closer: mere supervenience – even if it is *logical* supervenience (where the sufficiency of a true physical condition for a given true reality-descriptive consciousness-sentence is a *logical* one) – is insufficient for reduction (though *not* for *explanation*). Yet, all the while physicalists continue to assert that the reality of consciousness is *reducible* to physical reality. Likely, they have tacitly changed the meaning of "reduction" and "reducible" – in order to be still able to present affirmative-sounding, reassuring reports ("from the front of the War for Enlightenment") to the inexorable dictator that rules their minds: the ideology of physicalism.

Physicalists continue to assert that the reality of consciousness is reducible to physical reality. In the end, maybe, all they mean to assert with this is *this*:

> Ψ-Φ-*unireality*
>
> The true reality-descriptive consciousness-sentences and the true sentences of present-day or future physics describe the same reality: physical reality (of course).

But even Ψ-Φ-*unireality* seems to be not true. Consider that our everyday experience is replete with illusions (without our being taken in by them, at least not by the vast majority of them), the most common of them being the visual illusions *of apparent motion*. Here is a striking example: Looking onto a railroad track from a fast moving train, *it visually seems to me* [and would seem to you if you were in my place] *that a brownish torrent is rushing headlong in the direction that is opposite to the direction of the movement of the train – a torrent*

that, at greater distance, slows down and becomes a sequence of away-moving ties between the parallel rails, which ties soon come to be at rest, along with the track they contribute to forming. *This* is what visually appears to me; *this appearance* (*not*, of course, the object of this appearance: the state of affairs that appears in it) is undeniably an actual entity (and equals of it are intersubjectively producible without much preparation). The consciousness-sentence of mine that describes this appearance (see the above sentence in italics) is reality-descriptive *and true*. But how could it describe *the same reality* as is described by the true sentences of present-day or future physics? Evidently, no physical actual entity in my head or outside of it, or partly in it and partly outside of it, is *the appearance* which that consciousness-sentence correctly describes.

The reality of consciousness clearly and distinctly seems to me to be a *second reality* besides physical reality: a second reality such that the, by far, greater part of it is too fundamental than to result from an alleged "reality"-generating power of language-in-action, *yet* a second reality that is far from being unrelated to physical reality. For, it also seems to me clearly and distinctly, (i), that the events of consciousness – the appearances – often are, and may always be, actuality-prolongations of physical events; and, (ii), that physical facts are in no other way cognitively accessible than *through appearances* (compare the above-defined – quite non-arbitrary – concept of knowledge). These clear and distinct seemings greatly shape what I believe to know.

65. *Realism about consciousness* (*my* consciousness in the first place, but, I trust, *your* consciousness as well), or briefly: *consciousness-realism*, consists in the following position: The reality that determines the truth, or the falsity, of, for example, my reality-descriptive consciousness-sentences, and likewise the truth, or the falsity, of my reality-descriptive sentences of unspecific seeming [which have the form "It seems to me that *A*", "*A*" standing for any well-formed descriptive sentence], is, fundamentally, *not* a product of language, *not* generated by language; *that* reality is, fundamentally, as language-independent as is the reality that determines the truth and the falsity of the sentences of physics, i.e., physical reality. Whoever is a realist about consciousness *and* a realist about the physical will find it rather difficult (to put it mildly) *not* to be a dualist about consciousness: *not* to give consciousness the status of a *second reality*.

On the other hand, I have not encountered any former physicalists who were awakened from their dogmatic slumber by considerations more or less similar to the considerations in this chapter. Nothing seems to be able to shake the physicalists' conviction that they know that physicalism is right. And, who knows, perhaps physicalists have, as far as *the truth* is

concerned, every right to slumber in this conviction? After all, *truth* loves to hide, and what is *manifest* – indeed, *manifest* not only to dualists – may still mislead. ["Nature loves to hide" is what Heraclitus actually did say; but no matter what Heraclitus meant by "nature", *nature* can be taken to be *the way things really are*, and *truth*, too, can be taken to be *the way things really are*.]

12 Is there absolute motion?

Discussing whether there is absolute motion reveals much about the difference between empirical findings and their metaphysical interpretation(s), between physics (as a purely empirical discipline) and metaphysics. In order to make matters not more complicated than is necessary for this discussion, "motion" will here refer exclusively to *straight-linear centered motions*.

66. What is a *straight-linear centered motion*? It is a motion in a straight line away from or toward the spatial point – "the center" – which the motion is taken to be relative to.

The basic predicate for the discussion is the predicate of *relative* [and straight-linear centered] *motion*: "*x* is in [straight-linear centered] motion relative to *y* at time *t* with speed *v* [$v > 0$] and orientation *z* [which orientation is always – howsoever else the motion may be – either straight-linearly *away from y* or straight-linearly *toward y*]". On the basis of this predicate, infinitely many predicates of *absolute motion* are defined as follows:

> Definition[schema]1
> *x* is in absolute$_n$ [straight-linear centered] motion at time *t* with speed *v* and orientation *z* $=_{Def}$ *x* is in [straight-linear centered] motion relative to p_{An} at time *t* with speed *v*, $v > 0$, and orientation *z*, *z* being either toward p_{An} or away from p_{An},

where "p_{An}", if it designates anything at all, designates – for every Arabic numeral replacing "n" (and Arabic numerals are *here* not just the ten basic ones, not just "the digits") – an *immovable spatial point*, and where "pA_n" and "$pA_{n'}$", if they each designate something, designate *different* immovable spatial points for *different* Arabic numerals replacing "n" and "n´".

Absolute Space is the set of all immovable spatial points. As such, it is representable by *each* immovable spatial point; for, *no matter* which immovable spatial point is chosen to be *p*, the set of all immovable spatial points – Absolute Space – is identical with the set of all spatial points that are at a constant directed spatial distance from *p* (including *p* itself, because, for *every* spatial point *x*, the quantity of the directed spatial distance of *x* from *x* is constantly *zero* and the direction away from *x* toward *x* is likewise constantly *zero*). In other words:

(Axiom1) For all immovable spatial points *p*: for all *x*: *x* is an immovable spatial point if, and only if, *x* is a spatial point that is at a constant directed spatial distance from *p*.

67. Axiom1 is logically equivalent [according to first-order predicate logic] to the conjunction of two general conditionals: (Axiom1a) For all *x*: if *x* is an immovable spatial point, then for every immovable spatial point *p* it is true that *x* is a spatial point at a constant directed spatial distance from *p*. (Axiom1b) For all *x*: if *x* is a spatial point that is at a constant directed spatial distance from some immovable spatial point *p*, then *x* is an immovable spatial point.

Concerning the meaning of the locution "spatial point *x* is at a constant directed spatial distance from [the immovable or movable] spatial point *p*": every spatial point *p* is at the butt of every arrow (so to speak) in space issuing from it at a time *t*; every such arrow is of fixed finite length and directed (in a certain direction) away from *p*; every such arrow defines [conceptually determines] exactly one directed spatial distance from *p* at time *t*; and every directed spatial distance from *p* at time *t* is defined by exactly one such arrow. Then: *x* is at a *constant* directed spatial distance from *p* if, and only if, the arrow going from *p* to *x* [*x* being at the arrow's tip] has *at all times* the same length and the same direction away from *p*.

As a set-theoretic consequence of Axiom1 and the *functioning* p_{An}-nomenclature, we have: Absolute Space = {*x*: *x* is an immovable spatial point} = {*x*: *x* is a spatial point at a constant directed spatial distance from p_{A0}} = {*x*: *x* is a spatial point at a constant directed spatial distance from p_{A1}} = {*x*: *x* is a spatial point at a constant directed spatial distance from p_{A2}} = … . And we can define:

> Definition2
>
> (a) *x* is in *absolute* [straight-linear centered] motion at time *t* with speed *v* and orientation *z* $=_{Def}$ *x* is in [straight-linear centered] motion relative to some *immovable* spatial point *p* at time *t* with speed *v*, $v > 0$, and orientation *z*, *z* being either toward *p* or away from *p*.
>
> (b) *x* is in *absolute* [straight-linear centered] motion at time *t* $=_{Def}$ *x* is in [straight-linear centered] motion at time *t* relative to some *immovable* spatial point *p* with some speed *v*, $v > 0$, and some orientation *z*, *z* being either toward *p* or away from *p*.

In order to characterize Absolute Space so as to give it the character one expects it to have on the basis of classical physics, *more* axioms than Axiom1 are required – axioms that

might, perhaps, be varied in order to obtain alternative conceptions of Absolute Space. I bypass all this and come immediately to the crucial distinction between immovable and *movable* spatial points. Movable spatial points are precisely the spatial points that are not immovable; hence one obtains from Axiom1:

(Theorem1) For all immovable spatial points *p*: for all *x*: *x* is a *movable* spatial point if, and only if, *x* is a spatial point that is not at a constant directed spatial distance from *p*.

68. Theorem1 is logically equivalent [according to first-order predicate logic] to the conjunction of two general conditionals: (Theorem1a) For all *x*: if *x* is a movable spatial point, then for every immovable spatial point *p* it is true that *x* is a spatial point that is not at a constant directed spatial distance from *p*. (Theorem1b) For all *x*: if *x* is a spatial point such that for some immovable spatial point *p x* is not at a constant directed spatial distance from it, then *x* is a movable spatial point.

What does it mean, for spatial points *x* and *p*, that *x* is at a constant directed spatial distance from *p*, and what does it mean that *x* is *not* at a constant directed spatial distance from *p*? – An answer is already provided in the second paragraph of note **67**. That answer can also be put differently (but equivalently): For every time *t*, there is such an item as *the* straight line from *p* to *x* at time *t* [if *x* is identical with *p*, then the straight line from *p* to *x* has, at all times, the length and direction *zero*]. If for all times *t* and *t´* the length and direction of the straight line from *p* to *x* at *t´* is (identical with) the length and direction of the straight line from *p* to *x* at *t*, then *x* is at a constant directed spatial distance from *p* (and *p* at a constant directed – *inversely* oriented – spatial distance from *x*); if for some times *t* and *t´* the length or the direction of the straight line from *p* to *x* at *t´* is not the length, respectively the direction, of the straight line from *p* to *x* at *t*, then *x* is *not* at a constant directed spatial distance from *p* (and *p* not at a constant directed spatial distance from *x*).

69. *Note* that the straight line from *x* to *p* at a time *t* is not the straight line from *p* to *x* at *t*: their respective *orientations* differ (and straight lines are *here* taken to be *oriented* straight lines). *Note* also that the straight line from *p* to *x* at time *t* is *not* guaranteed to be (identical with) the straight line from *p* to *x* at another time *t´*, not even if, in addition to the orientation, the length as well as the direction of the *t*-line and of the *t´*-line – is the very same. Even if *x* is at a *constant* directed spatial distance from *p*, this does not guarantee that the straight line from *p* to *x* at time *t* is (identical with) the straight line from *p* to *x* at another time *t´*. *However*, if *p* is an *immovable* spatial point, and *x* is at a constant directed spatial distance from *p*, then the straight line from *p* to *x*

at *t is* (identical with) the straight line from *p* to *x* at *t´* – for all times *t* and *t´*. *Note*, moreover, that the length, the direction, and the orientation of a (*oriented*) straight line, one ending on both sides in a spatial point, are, even taken together, *insufficient* for individuating it: Consider an oriented straight double-ended line *L*, *and another* oriented straight double-ended line *L´* which is parallel to *L* (that is: has the same direction as *L*), which is just as long as *L*, and which has the same orientation as *L* (for example, these *two* lines: /$^{+}$ /$^{+}$, the "$^{+}$" – in its position – symbolizing their identical orientation). Oriented straight double-ended lines are individuated by their location in space *taken together* with their orientation. (Their location in space *alone* is insufficient for their individuation, since, given the spatial location of an oriented straight double-ended line, there are two such lines that have this location: one with *one* of the two possible orientations, the other with *the other* – opposite – *one*.) *Note*, finally, that the direction and the orientation of an oriented straight double-ended line are very different items; yet one can refer to them *in combination*, as in "directed spatial distance [away] from p*". It might even be said that the *full direction* of an oriented straight double-ended line is its direction *together with its orientation*. (As a matter of fact, what in everyday speech is *simpliciter* called "direction" is *full direction*, i.e., *direction+orientation*.)

Consider now two separated spatial points p* and q* in a remote region of space, empty of all matter (except, perhaps, for the matter in p* and q*). *Relative to* p*, q* is in motion with constant speed v*, $v^* > 0$, constantly [i.e., unwaveringly on a straight line] toward p*; *relative to* q*, p* is in motion with constant speed v*, $v^* > 0$, constantly toward q* (hence p* and q* are on a straight collision course; what their collision will consist in is, in the context of this book, not of interest). There are, *prima facie*, four possibilities: *(I)* both p* and q* are immovable spatial points; *(II)* p* is an immovable spatial point, q* a movable one; *(III)* q* is an immovable spatial point, p* a movable one; *(IV)* neither p* nor q* is an immovable spatial point.

Possibility (I), however, is excluded in the situation under consideration: If both p* and q* are immovable spatial point, it follows (according to Axiom1) that q* is a spatial point that is at a constant directed spatial distance from p*, hence that for all times *t* and *t´* the length of the straight line from p* to q* at *t´* is (identical with) the length of the straight line from p* to q* at *t* – which is *not* the case (in the situation under consideration): for some times *t* and *t´*, the straight line from p* to q* at *t´* is shorter than the straight line from p* to q* at *t.*

Under *Possibility (II)*, p* is at *absolute rest* (because it is immovable under *Possibility (II)*); and q* (applying Definition1 to *Possibility (II)*) is in absolute$_1$ [$p_{A1} =_{Def}$ p*] constant motion with constant speed v*, $v^* > 0$, constantly toward p*. Note that p*'s being at absolute rest does not preclude that p* is, *relative to* q*, in constant motion with constant speed v*, v* >

0, constantly toward q*. While some spatial points are not at *absolute* rest [if a spatial point is not at absolute rest, it is not immovable: it is a movable spatial point; the converse need not be true: a movable spatial point may yet be at absolute rest], every spatial point, even every movable one (for example, q* under *Possibility (II)*), is at all times at rest *relative to itself*, and another spatial point can well be in motion *relative to it* – as p* is in motion relative to q* – even though that other spatial point is *immovable* (as p* is assumed to be under *Possibility (II)*).

70. *Rest* can be expressed in terms of [straight-linear centered] *motion* as follows:
Let *x* and *p* be spatial points:
x is in [straight-linear centered] motion relative to *p* at time *t* with speed *v* and orientation *z* $=_{Def}$ *x* is *nominally* in [straight-linear centered] motion relative to *p* at time *t* with speed *v* and orientation *z*, and $v > 0$ and $z \neq 0$ [that is: *z* is either *toward p* or *away from p*]. [This motion is not only *nominally* motion, it is also *properly speaking* motion.]
x is at rest relative to *p* at time *t* $=_{Def}$ *x* is *nominally* in [straight-linear centered] motion relative to *p* at time *t* with speed 0 and orientation 0. [This motion is *only nominally* motion, it is *not properly speaking* motion.]
x is at absolute$_n$ rest $=_{Def}$ *x* is at all times *t* at rest relative to [the *immovable* spatial point] p_{An}.
x is at absolute rest $=_{Def}$ *x* is at all times *t* at rest relative to some *immovable* spatial point.
[One might also define – in the obvious way – "*x* is *at t* at absolute$_n$ rest" and "*x* is *at t* at absolute rest"; yet the absoluteness in "absolute rest" certainly is firmly associated in our minds with *sempiternity* of the rest; this being so, only the last two definitions have been presented.]

Possibility (III) is just like possibility *(II)*, except that p* and q* have exchanged their roles (and we have, applying Definition1 to *Possibility (III)*, "absolute$_2$ motion" [$p_{A2} =_{Def} q^*$], whereas, applying Definition1 to *Possibility (II)*, we had "absolute$_1$ motion" [$p_{A1} =_{Def} p^*$]).

Possibility (IV) does not preclude that both p* and q* are in absolute motion as follows: such that, *(a)*, q* is in constant absolute motion with constant speed v_1^*, $v_1^* > 0$, constantly [i.e., unwaveringly on a straight line] toward p*, *and* such that, *(b)*, p* is in constant absolute motion with constant speed v_2^*, $v_2^* > 0$, constantly [i.e., unwaveringly on a straight line, let it be, for simplicity's sake, always the *same* straight line – disregarding *orientation* – as the one just mentioned] toward q*, *and* such that, *(c)*, v* – the speed of the motion of q* relative to p*, and of the motion of p* relative to q* – is a function of v_1^* and v_2^*: $v^* = \varphi(v_1^*, v_2^*)$. [The accurate way of saying what "v* is a function of v_1^* and v_2^*" says idiomatically but inaccurately, is of course this: "v* is the value of a function for the arguments v_1^* and v_2^*".]

71. The simplest possible manner of v* being a function – a combination – of v_1* and v_2* is this: v* = v_1* + v_2*. *Classical* physics proceeds on the assumption that the *real* combination of speeds in the just-described scenario not precluded by *Possibility (IV)* is simply that *simplest possible* combination of speeds – an *empirically* contradicted assumption (though the contravening empirical fact is not easy to detect; in fact, it is undetectable as long as v_1* and v_2* are speeds far smaller than the speed of light *in vacuo*).

As long as there is in the situation under consideration [the one the four *Possibilities* pertain to] some appropriately situated immovable spatial point – be it p* [as in *Possibility (II)*], or q* [as in *Possibility (III)*], or if neither p* nor q* be immovable [as in *Possibility (IV)*], then, say, the point of (the future) collision of p* and q* on the ever-shortening straight line between them (which point is the candidate for immovability that most strongly suggests itself under *Possibility (IV)*) –, there is bound to be absolute [straight-linear centered] motion in the situation under consideration [where p* and q* are – not just *nominally* – in uniform motion, regarding speed and direction, each *relative to the other* toward the other]. The only question is this: Is there some *such* – in the situation appropriately situated – immovable spatial point? Is there any immovable spatial point *at all*?

72. Absolute Space exists if, and only if, the set of all immovable spatial points is not empty, in other words: if, and only if, there is some immovable spatial point. Thus, the question "Does Absolute Space exist?" is tantamount to the question "Is there some immovable spatial point?". Lest the notion of Absolute Space qua set of all immovable spatial points seem too unspecific to be adequate, consider: It is a consequence of the axioms for Absolute Space [axioms here not presented, with the exception of Axiom1] *that* where there is one immovable spatial point *p*, there are – three-dimensionally arranged in the familiar way– superdenumerably many immovable spatial points, no matter how close the vicinity to *p* is taken to be. [The converse of this proposition is trivially true.]

Though "movable spatial point", being defined as "spatial point that is not [an] immovable [spatial point]", is defined on the basis of "immovable spatial point", it does not follow that there are immovable spatial points if there are movable spatial points (nor, of course, that there are movable spatial points if there are immovable ones). Nor do the axioms for Absolute Space require that there are immovable spatial points. If there are none (i.e., if Absolute Space does not exist; cf. note **72**), then those axioms merely become *trivially* (or, more pre-

cisely speaking, *emptily*) *true* (see what would happen to Axiom1 and Theorem1 if there were no immovable spatial points).

The question "Is there some immovable spatial point?" is not an empirically decidable question. It does, indeed, seem – quasi-observationally – that the empty spatial points on the straight line in between p* and q* – at a given moment of time prior to the impending collision – are immovable *due to their emptiness*: that those points *wait*, so to speak, *in emptiness and immovability* till they are occupied by either p* or q* – and, having been occupied, are immediately left *empty and immovable* again. But appearances may mislead, and one is perhaps jumping to an unwarranted conclusion here. The empty spatial points on the straight line in between p* and q*, though empty, might perhaps be movable spatial points, just as movable as both p* and q* are under *Possibility (IV)* – and one might argue that, "for all we know", they should be treated as movable spatial points: in consideration of ontological economy ("cutting" – or as some like to put it: "eliminating" – immovable spatial points as "not necessary", whereas movable spatial points are, of course, "empirically indispensable").

Nevertheless, there is a line of thought that *underscores* the presumed connection between emptiness and immovability. *Space* is the set of all spatial points, there being (who will doubt it?) *some* spatial points [hence Space is set-theoretically non-empty: Space *exists*], with *Absolute* Space, the set of all *immovable* spatial points, being an – either empty or non-empty – subset of Space. Suppose Space were *empty*, entirely empty, *not* in the set-theoretical sense, of course, but because *every spatial point is empty [unoccupied]*. Would there still be *movable* spatial points? The answer must be "No", it seems; there is, in the envisaged case, no foothold for the assumption of movable spatial points. Thus, in the envisaged case, it seems that *all* spatial points – and not only *some* – would be *immovable* due to the (supposed) fact that all of them are empty. Is not, then, the emptiness of a spatial point an indication of its being immovable? Or to be perfectly clear: Is not the *some-time*-emptiness of a spatial point – and a fortiori its *all-time*-emptiness if the spatial point happens to be empty at all times – at least *some* empirical indication of its being immovable? But this rhetorical question enunciates only a *suggestion* (though one with some force).

73. Should one declare the some-time-emptiness (*not*, of course, the all-time-emptiness) of a spatial point to be a necessary condition (on analytical grounds) of its immovability? – Taking this step seems going one step too far.

The objection, raised above, maintaining that the spatial points which are on the straight line in between p* and q* at a given time prior to the collision of p* and q* might be (and really should be) *movable* spatial points *even though* all of them are empty at that time, can also be countered (and rather more forcefully than by the considerations in the preceding paragraph) by simply requiring – as a matter of principle (it seems very reasonably and plausibly *a matter of analytic principle*) – that all movable spatial points are at all times of their existence *filled* (or: *loaded*, with matter and/or energy) and hence not empty. Therefore, those spatial points, being empty (at the given time), are *not* movable spatial points, in other words: are *immovable* spatial points.

74. Immovable spatial points, too, can be filled (loaded), of course, but it does not make them nonexistent if they are not filled. It seems, moreover, to be an empirical fact (*if* one acknowledges immovable spatial points) that every at-time-*t*-filled immovable spatial point is filled *only vicariously*: via being occupied at *t* by a filled *movable* spatial point. (Note that it makes sense to say that a movable spatial point is *at* an immovable spatial point, the former occupying – "filling" – the latter; it does, however, not make sense to say that an immovable spatial point is *at* a movable spatial point.)

Against the argument just proposed it can, in turn, be held that there is, indubitably, a certain directed non-zero but small distance from p*: a certain non-zero-long but short "arrow" (so to speak: the arrow is invisible) pointing away from p* (which is at its butt). If p* is a movable spatial point and is moving (relative to q*, in a straight line toward q*), then that arrow is moving along with p*, and then also the tip of that arrow is moving along with p*. But then, the spatial point at the tip of the arrow is and will be *empty* (see the initial description of the situation that p* and q* are in) *although* it is moving (*wedded* to p*'s movement relative to q*) and is a movable spatial point just as p* is – contradicting the argument for *emptiness entailing immovability* proposed in the previous paragraph.

Are the champions of immovable spatial points (and therewith of Absolute Space and absolute motion) beaten at last? Far from it. They can answer the following: Whereas the (invisible) arrow in question has a tip and the arrow and its tip are, indeed, moving along with p* – in parallel with p* at the speed v*, wedded to p*'s straight-linear constant motion relative to q* toward q* – and whereas there is at every moment of this movement a spatial point at the tip of the arrow, it is *not* always the same spatial point. That it is always the same spatial point is erroneously assumed by the opponents, by thinkers rejecting immovable spatial

points. Rather, it is always *another* spatial point: always another *empty* and, therewith, *immovable* spatial point.

75. It is a consequence of this rejoinder that *the tip itself* of the arrow is not a spatial point: it is not an immovable spatial point because it moves; it is not a movable spatial point because it is empty. What is it, then? It is an *ideal object*, just like the arrow whose tip it is, an *ideal object* employed in the description of physical reality, belonging to a vast conceptual framework – *so* employed notwithstanding its (the object's) ideal nature. (For corroboration of this stance, just consider the indispensable role played, in physics, by the ideal objects called "numbers"!) *Spatial points*, in contrast, are *not* ideal objects employed – and oftentimes indispensably employed – in the description of physical reality; rather, they are (*unlike* numbers and geometrical idealizations) *parts of physical reality itself*.

Still, after all that has been said so far, it certainly still is epistemologically rational to maintain that the assertion "There is an immovable spatial point" [or: "Absolute Space exists"] and, in consequence, the assertion "There is absolute motion" do not rest on empirical foundations – not *firmly* enough. However, it certainly is *also* epistemologically rational to maintain *the same* of the negations of these assertions (disregarding, as is only reasonable, the fact that in the minds of many a lack of decisive empirical evidence *for X* is rather often transformed by a kind of *magic* – *not* logic – into decisive empirical evidence *against X*). Is this situation significantly changed by the empirical discovery – let it be counted as such – that the speed of light *in vacuo* is at all times constant in all directions [and all direction+orientations; cf. note **69**] and that this speed is the maximal, insurmountable speed in the World? Expressed in the diction of this chapter, and given the simplifying limitations of this chapter (i.e., the exclusive focus on straight-linear centered motions), we have:

Fact1

For all *x*, all spatial points *y*, all *v*, *t*, *z:* If *x* is a photon *in vacuo* in [straight-linear centered] motion relative to *y* at time *t* with speed *v* and orientation *z* [straight-linearly away from *y*, or straight-linearly toward *y*], then $v = c^*$.

Fact2

For all *x*, all spatial points *y*, all *v, t, z:* If *x* is in [straight-linear centered] motion relative to *y* at time *t* with speed *v* and orientation *z*, then $v \leq c^*$.

For the purposes pursued in this chapter, photons are regarded as being certain *movable* spatial points (in any case, they are very good approximations to movable spatial points).

Now, suppose there is an *immovable* spatial point, call it "p_{A0}". From Fact1, respectively Fact2, we obtain the following corollaries:

For all *x*, all *v*, *t*, *z:* If *x* is a photon *in vacuo* in [straight-linear centered] motion relative to p_{A0} at time *t* with speed *v* and orientation *z*, then $v = c^*$.
For all *x*, all *v*, *t*, *z:* If *x* is in [straight-linear centered] motion relative to p_{A0} at time *t* with speed *v* and orientation *z*, then $v \leq c^*$.

In other words, using Definition1:

For all *x*, all *v*, *t*, *z:* If *x* is a photon *in vacuo* in absolute$_0$ [straight-linear centered] motion at time *t* with speed *v* and orientation *z*, then $v = c^*$.
For all *x*, all *v*, *t*, *z:* If *x* is in absolute$_0$ [straight-linear centered] motion at time *t* with speed *v* and orientation *z*, then $v \leq c^*$.

Suppose further [following the previous discussion of *Possibility (IV)*, taking as *given* the stipulated situation *in vacuo* under *Possibility (IV)*, but with this situation being further specified as follows]: p* and q* are also in *absolute* [straight-linear centered] motion toward each other: p_{A0} is one of the immovable spatial points *relative to which* q* is in motion with constant speed v_1^*, $v_1^* > 0$, constantly [i.e., unwaveringly on a straight line] toward p*: *by moving toward* p_{A0}, and *relative to which* p* is in motion with constant speed v_2^*, $v_2^* > 0$, constantly [i.e., unwaveringly on a straight line: the same straight line, disregarding *orientation*, as the one just mentioned] toward q*: *by moving toward* p_{A0} – *while* [recall what has been said previously in this chapter!] *relative to* p*, q* is in motion with constant speed v*, $v^* > 0$, constantly [i.e., unwaveringly on that same said straight line] toward p*, and *relative to* q*, p* is in motion with constant speed v*, $v^* > 0$, constantly toward q*. There are – with both p* and q* being movable spatial points in absolute motion (that is: in motion relative to the *immovable* spatial point p_{A0}) – four possibilities: *(i)* both p* and q* are photons; *(ii)* p* is a photon, but q* is not; *(iii)* q* is a photon, but p* is not; *(iv)* neither p* nor q* is a photon.

Now, under *possibility (i)*, or *(ii)*, or *(iii)*, it cannot be correct that $v^* = \varphi(v_1^*, v_2^*) = v_1^* + v_2^*$, as classical physics naively requires (under the spell of an idea of absoluteness of space and motion that is indeed untenable); for, if $v^* = \varphi(v_1^*, v_2^*) = v_1^* + v_2^*$ were correct, then under each one of those three possibilities it would follow, according to Fact1, that $v^* > c^*$, which contradicts Fact2. Indeed, in view of the Facts [Fact1 & Fact2], $v^* = \varphi(v_1^*, v_2^*) = v_1^* + v_2^*$ cannot be correct – not even under *possibility (iv)* – *if* $v_1^* + v_2^* > c^*$. Therefore, $v^* = \varphi(v_1^*, v_2^*) = v_1^* + v_2^*$ must be *replaced* (it is, of course, out of the question to exclude, as a consequence of the inconsistency found, that $v_1^* + v_2^* > c^*$). The conflict with the Facts is avoided by adopting the following *replacement*: $v^* = \varphi(v_1^*, v_2^*) = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2})$.

76. With this new combination-law, v^* turns out to be c^* under *possibility (i)*, under *possibility (ii)*, and under *possibility (iii)*. Under *possibility (iii)*, for example, we have: $v^* = \varphi(c^*, v_2^*) = (c^* + v_2^*) : (1 + c^* v_2^*/c^{*2}) = (c^* + v_2^*) : (1 + v_2^*/c^*) = c^*(1 + v_2^*/c^*) : (1 + v_2^*/c^*) = c^*$. Indeed, with this new combination-law, v^* is guaranteed [under Fact2] to be not greater than c^* – even if $v_1^* + v_2^*$ happens to be greater than c^* or equal to c^* (as may still be the case under *possibility (iv)*). Moreover, according to this new combination-law, v^* is guaranteed to be not greater than $v_1^* + v_2^*$, because the dividing factor $(1 + v_1^* v_2^*/c^{*2})$ is guaranteed to be not smaller than 1 [and, in view of Fact2, to be at most equal to 2]; if $v_1^* > 0$ and $v_2^* > 0$, as in the presently considered situation, $(1 + v_1^* v_2^*/c^{*2})$ is guaranteed to be greater than 1, and thus – according to the new combination-law – v^* *must be smaller than* $v_1^* + v_2^*$. Last but not least, as long as v_1^* and v_2^* are small in comparison with c^* (the latter speed being very, very great) so that $v_1^* v_2^*/c^{*2}$ is nearly 0, we have: $v^* = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2}) \approx v_1^* + v_2^*$. This explains why the classical combination-law could ever seem right. [If, contrary to the presently considered situation, $v_1^* = 0$ *or* $v_2^* = 0$, then we have: $v^* = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2}) = v_1^* + v_2^* = v_2^*$, *or* $v^* = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2}) = v_1^* + v_2^* = v_1^*$.]

What has been said in this note so far is most easily verified if one expresses v_1^* and v_2^* as products of c^*: v_1^* being ac^*, and v_2^* being bc^*, where, in accordance with Fact2, $0 \leq a \leq 1$ and $0 \leq b \leq 1$, no values in these intervals being barred from occurring. The new combination-law then takes on the following form: $v^* = \varphi(ac^*, bc^*) = (ac^* + bc^*) : (1 + ac^* bc^*/c^{*2})$, or in other words: $v^* = c^*[(a + b) : (1 + ab)]$. Note that the factor $[(a + b) : (1 + ab)]$ is smaller than or equal to 1 [and greater than or equal to 0], and thus v^* is smaller than or equal to c^*; note, in particular, what happens if a or b or both happen to be 1. Note finally: If both a and b are greater than 0, as in the presently considered situation, then [in view of $1 + ab$ being greater than 1] v^* must be smaller than $c^*(a + b)$, in other words: smaller than $c^*a + c^*b$, i.e., smaller than $v_1^* + v_2^*$.

Replacing the classical combination-law $v^* = \varphi(v_1^*, v_2^*) = v_1^* + v_2^*$ with the new combination-law $v^* = \varphi(v_1^*, v_2^*) = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2})$, which law does not get in conflict

with Fact1 & Fact2, provides *no* new ammunition for the enemies of absolute motion. Consider further consequences of the Facts and the new combination-law:

As previously, let p* and q* be *movable* spatial points *both*, each moving *relative to the other* with the constant speed v*, $v^* > 0$, on a straight line in empty space constantly toward the other [this being the stipulated situation *in vacuo* under *Possibility (IV)*]: they are on a straight collision course (in empty space). And, as previously, let p_{A0} be an *immovable* spatial point such that q* is in motion *relative to* p_{A0} with constant speed v_1^*, $v_1^* > 0$, on the same said straight line constantly toward p*: *by moving toward* p_{A0}, and such that p* is in motion *relative to* p_{A0} with constant speed v_2^*, $v_2^* > 0$, on the same said straight line constantly toward q*: *by moving toward* p_{A0}. Suppose further that v_1^* and v_2^* are both smaller than c* (hence neither q* nor p* is a photon). Let p* and q* be *now* 1000*m* apart – as determined by measurement from the point of view p* [which, say, is the tip of a spaceship]; let them be *now* 1000*m* away from their collision (as measured from the point of view p*). Speaking in terms of *time*, how far away – in *s(econds)* – from *now* will their collision take place? The answer is as follows (the length of the temporal distance in question being designated by "ΔT"):

(Description1 from the point of view p*)
Relative to p* [at rest, q* moving]: $\Delta T = 1000m : v^*[m/s]$.
Relative to q* [at rest, p* moving]: $\Delta T = 1000m : v^*$.
Relative to p_{A0} [at absolute rest, q* and p* both moving]: $\Delta T = 1000m : (v_1^* + v_2^*)$.

77. How does the third of these three assertions result? – Since p* and q* are *now* 1000*m* apart, collision will take place, relative to p_{A0}, when $1000m = \Delta T v_1^* + \Delta T v_2^*$, in other words: when $1000m = \Delta T(v_1^* + v_2^*)$. Therefore, $\Delta T = 1000m : (v_1^* + v_2^*)$.

According to the – empirically *inadequate* – classical combination-law, we have: $v^* = v_1^* + v_2^*$, and therefore ΔT is the same amount of time relative to p*, relative to q*, *and* relative to p_{A0}. According to the – empirically *adequate* – new combination-law, however, we have: $v^* = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2})$ – and $(v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2})$ is *smaller* than $v_1^* + v_2^*$ [because $v_1^* > 0$ and $v_2^* > 0$]. It turns out that ΔT relative to p* and relative to q* is *larger* [by the same amount] than it is relative to p_{A0}: relative to p* and relative to q* it takes longer

– from *now* on, p* and q* being *now* 1000*m* apart – till collision occurs than it takes relative to p_{A0}. Yet, there is just one *now*-event [i.e., p* and q* being momentarily exactly 1000*m* away from their collision] and just one collision-event. Therefore, the conclusion (based on Description1) is this: relative to p* and relative to q* *time is running faster* than it runs relative to p_{A0} [i.e., the same process takes more time relative to p*/q* than relative to p_{A0}].

In turn, let p* and q* be *now* 100*s* apart – as determined by measurement from the point of view p*; let them be *now* 100*s* away from their collision (as measured from the point of view p*). Speaking in terms of *space*, how far away – in *m(eter)* – is p* *now* from q*, q* from p*? The answer is as follows (the length of the spatial distance in question being designated by "ΔS"):

(Description2 from the point of view of p*)
Relative to p* [at rest, q* moving]: $\Delta S = 100s \times v^*$[*m/s*].
Relative to q* [at rest, p* moving]: $\Delta S = 100s \times v^*$.
Relative to p_{A0} [at absolute rest, q* and p* moving]: $\Delta S = 100s \times (v_1^* + v_2^*)$.

78. How does the third of these three assertions result? – Since p* and q* are n*ow* 100*s* away from collision (the collision course being a straight line), the spatial distance between p* and q*, relative to p_{A0}, is *now* $100s \times v_1^* + 100s \times v_2^*$, in other words: $\Delta S = 100s \times (v_1^* + v_2^*)$.

According to the classical combination-law, we have: $v^* = v_1^* + v_2^*$, and therefore ΔS is the same amount of spatial distance relative to p*, relative to q*, and relative to p_{A0}. According to the new combination-law, however, we have: $v^* = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2})$ – and $(v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2})$ is *smaller* than $v_1^* + v_2^*$ [ditto]. It turns out that ΔS relative to p* and relative to q* is *smaller* [by the same amount] than it is relative to p_{A0}: relative to p* and relative to q* the length of the spatial distance to be covered – from *now* on, p* and q* being *now* 100*s* apart – till collision occurs is smaller than relative to p_{A0}. Yet, there is just one *now*-event [i.e., p* and q* being momentarily exactly 100*s* away from their collision] and just one collision-event. Therefore, the conclusion (based on Description2) is this: that relative to p* and relative to q* *distance in the line of movement is contracted* as compared with how it is relative to p_{A0}.

Let "p* and q* are *now* 1000*m* apart" and "p* and q* are *now* 100*s* apart" be descriptions from the point of view p*, determined by measurement from the point of view p*, of one and the same situation prior to the collision of p* and q* (everything else concerning p* and q* – and p_{A0} – being as previously stipulated). Then we have relative to p* and relative to q*, due to the character of the movement of q* relative to p*, and of p* relative to q*: $v^* = \Delta S/\Delta T = (100s \times v^*) / (1000m : v^*) = 10m/s$.

79. Assume $v^* = (100s \times v^*) / (1000m : v^*)$; hence $v^*(1000m : v^*) = (100s \times v^*)$; hence $(1000m : v^*) = 100s$; hence $v^* = 1000m / 100s = 10m/s$. And of course we also have: $v_1^* + v_2^* = (100s \times (v_1^* + v_2^*)) / (1000m : (v_1^* + v_2^*)) = 10m/s$. But didn't we just learn that $v^* < v_1^* + v_2^*$? – Here one must keep in mind that the description of $v_1^* + v_2^*$ as being 10*m/s* results, in effect, purely by *measurement* from the point of view of p*: what the numerical value of v_1^*, of v_2^*, and of $v_1^* + v_2^*$ *is* plays no role in the obtaining of this result – which shows that 10*m/s* is *not* the true numerical value of $v_1^* + v_2^*$, i.e., the true numerical value of $v_1^* + v_2^*$ *as a sum of relative-to-*p_{A0}*-speeds*. Concerning the determination of this true numerical value, *still* from the point of view p* (the same point of view as *before*: in the determination of ΔT *relative to* p_{A0} [in Description1] and of ΔS *relative to* p_{A0} [in Description2]), consider what is said pertaining to its determination, after this note.

How large are – from the point of view p* – v_1^* and v_2^*, the relevant relative-to-p_{A0}-speeds, under *the special supposition* $v_1^* = v_2^*$? – According to the classical combination-law, $v^* = v_1^* + v_2^*$, and therefore [with $v^* = 10m/s$ and $v_1^* = v_2^*$] $v_1^* = v_2^* = 5m/s$. According to the new combination-law, we have: $v^* = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2})$, and hence [under *the special supposition* $v_1^* = v_2^*$] $v^* = (v_1^* + v_1^*) : (1 + v_1^* v_1^*/c^{*2}) = 2v_1^* : (1 + v_1^{*2}/c^{*2})$; hence: $10m/s = 2v_1^* : (1 + v_1^{*2}/c^{*2})$; hence $v_1^* = (1 + v_1^{*2}/c^{*2}) \times 5m/s = 5m/s + (v_1^{*2}/c^{*2}) \times 5m/s$. Clearly, v_1^* – and therewith, under *the special supposition*, also v_2^* – must be somewhat larger than 5*m/s*, that is: somewhat larger than they are according to the classical combination-law.

80. The exact value of v_1^* (and, therefore [given $v_1^* = v_2^*$], also of v_2^*) can be determined. The equation $v_1^* = 5m/s + (v_1^{*2}/c^{*2}) \times 5m/s$ can be transformed (by bilateral multiplication with c^{*2}, etc.) into: $c^{*2}v_1^* = c^{*2}(5m/s) + v_1^{*2}(5m/s)$, and this latter equation, in turn, can be transformed into: $(5m/s)v_1^{*2} - c^{*2}v_1^* + (5m/s)c^{*2} = 0$, which is a quadratic equation of the form $ax^2 + bx + c = 0$, with "*x*" being replaced by "v_1^*", "*a*" being replaced by "(5*m/s*)", "*b*" being replaced by "$-c^{*2}$", and "*c*" being replaced by "$(5m/s)c^{*2}$". That equation has two solutions, one of which is (physically) relevant; its relevant solution can be determined by following a well-known standard procedure of solving quadratic equations, which procedure is given by the following formula: $x_{[1,\,2]} = [-b \pm$

$\sqrt{\{b^2 - 4ac\}}] / 2a$. The relevant solution, then, for the quadratic equation in question is this: $v_1^* = [c^{*2} - \sqrt{\{c^{*4} - (100m^2/s^2)c^{*2}\}}] / 10m/s$. Thus, *mere computation* is what remains to be done in order to determine the exact (numerical) value of v_1^*.

Nevertheless, *first* to simplify the initial equation is a good way to prepare for this computation: to discern in advance where it will lead one. Let the purely numerical value of c* be represented by "N"; then we have:

$v_1^* = [N^2m^2/s^2 - \sqrt{\{N^4m^4/s^4 - (100m^2/s^2)N^2m^2/s^2\}}] / 10m/s$, that is:

$v_1^* = [N^2m^2/s^2 - \sqrt{\{N^4m^4/s^4 - 100N^2m^4/s^4\}}] / 10m/s$; that is:

$v_1^* = [N^2m^2/s^2 - \sqrt{\{(N^4 - 100N^2)m^4/s^4\}}] / 10m/s$; that is:

$v_1^* = [N^2m^2/s^2 - \sqrt{\{N^4 - 100N^2\}}\ m^2/s^2] / 10m/s$; that is:

$v_1^* = [N^2m/s - \sqrt{\{N^4 - 100N^2\}}\ m/s] / 10$; that is:

$v_1^* = ([N^2 - \sqrt{\{N^4 - 100N^2\}}] / 10)\ m/s$; that is:

$v_1^* = ([N^2 - \sqrt{\{(N^2 + 10N)(N^2 - 10N)\}}] / 10)\ m/s$; that is:

$v_1^* = ([N^2 - \sqrt{\{N^2 + 10N\}}\sqrt{\{N^2 - 10N\}}] / 10)\ m/s$; that is:

$v_1^* = ([N^2 - \sqrt{\{N(N + 10)\}}\sqrt{\{N(N - 10)\}}] / 10)\ m/s$; that is:

$v_1^* = ([N^2 - N\sqrt{\{N + 10\}}\sqrt{\{N - 10\}}] / 10)\ m/s$.

The rest must be done by the computational machinery, which has to be able to handle rather large numbers (i.e., N – the numerical value of the speed of light *in vacuo* – and N^2) and must be capable of producing a fairly long row of decimals behind the decimal point: a row of decimals that is long enough for making *visible* to what extent v_1^* is larger than $5m/s$.

Though Fact1 and Fact2, in conjunction, lead to incisive (and at the time of their first promulgation: astonishing) modifications of classical physics, they endanger neither the existence of absolute motion – conceived of as movement relative to immovable spatial points – nor the existence of Absolute Space – conceived of as the totality of immovable spatial points. It is far from being irrational if one assumes the existence of both. (Absolute motion cannot be without Absolute Space, and, given the [*pace* Parmenides] fairly undeniable existence of spatial motion, Absolute Space, if it exists, is certainly not without absolute motion: there are, if Absolute Space exists, enough *immovable* spatial points for spatial motions to be relative to.)

81. Summing up the findings regarding the (straight-linear centered) motion (on the same straight line) of *movable* spatial point q* relative to *movable* spatial point p* (toward p*), and of p* relative to q* (toward q*), and of q* and p* relative to *immovable* spatial point p_{A0} (both toward p_{A0}, and thereby each toward the other) – *all* of which findings are *from the point of view* p*, but q* [which, say, is the tip of another spaceship] would have served *as point of view* just the same – we have:

The speed v* of the movement towards collision relative to p*/q* is smaller than the sum of the speeds v_1* (of q*) and v_2* (of p*) relative to p_{A0}.
The time that elapses until collision occurs (from *now* on) is longer relative to p*/q* than relative to p_{A0}.
The spatial distance covered until collision occurs (from *now* on) is shorter relative to p*/q* than relative to p_{A0}.
Note that the p*/q*-perspective on what is going is neither less "real" nor more "real" than the p_{A0}-perspective, and vice versa ["p*/q*" and "p_{A0}" having exchanged places]. Both are *relative* perspectives [revolving around $v^* = (v_1^* + v_2^*) : (1 + v_1^* v_2^*/c^{*2})$, in other words: $v_1^* + v_2^* = v^*(1 + v_1^* v_2^*/c^{*2}) = v^* + v^* v_1^* v_2^*/c^{*2}$] – *relative to* p*/q*, *relative to* p_{A0} – with the difference that p_{A0} is an *immovable* spatial point, whereas p* and q* are *movable* spatial points, which difference makes the p_{A0}-perspective, but not the p*/q*-perspective, also an *absolute* perspective. The integration of the different perspectives into a unified, intellectually satisfying theoretical edifice – which would rise far above Fact1, Fact2, the new combination-law, *and* the acceptance of absolute motion and Absolute Space (in the way pointed out in this chapter) – is not a task to be undertaken here.

The reason for the (above-noted) non-endangerment of the existence of absolute motion and Absolute Space by Fact1 and Fact2 is that the affirmation as well as the denial of absolute motion and Absolute Space is *non-empirical*: *not* rationally enforced by the empirical – empirically found – facts, or in other words (since the issue is not one of logic or mathematics): affirming absolute motion and Absolute Space, *or*, on the contrary, denying them, is the adoption of a *metaphysical* position. This epistemological situation is not altered at all by the so-called *Principle of Relativity*, or rather: by the variously formulated *Principles* of Relativity.

The *Special Principle of Relativity* refers (explicitly or implicitly) to observers and is limited to a rather special kind of motion: uniform motion in a straight line. Expressed in the terms of this chapter (where speaking of *relativity to a spatial point* is preferred over speaking of *relativity to a spatial reference-system*) and with the *additional* limitation of this chapter to *straight-linear centered motion* (that is, to a special kind of uniform motion in a straight line), the Special Principle of Relativity can be formulated as follows:

> For every spatial point *x* and spatial point *y* and real number $v > 0$: if *y* is relative to *x* in uniform motion in a straight line [i.e., in a motion that is *constant* regarding speed, direction, and orientation] with speed *v toward / away from x*, then *x* is relative to *y* in uniform motion in a straight line with speed *v toward* / *away from y*, and, *given* they are thus in motion, each relative to the other, it is neither from the point of view

> of *x* nor from the point of view of *y* wholly or partly determinable by any empirical means what the absolute state of motion of *x* and *y* in this situation is.

Obviously, the Special Principle of Relativity, *if true*, places *absolute* motions of the kind of motion the Special Principle is limited to – is limited to *as it has here been formulated*, which limiting goes even further than the well-known, familiar limiting of it to uniform motion in a straight line – *completely* out of the ken of observation and experiment from the point of view of observers which are each moving relative to the other in the way(s) specified in the Special Principle. It is indeed true: it does *not* follow from the Special Principle that there are no absolute motions of the kind in question; but, *still*, that there are no absolute motions of the kind in question may, and in fact will, turn out to seem *strongly "recommended"* by the Principle. *How strongly* the denial of absolute motions of the relevant kind seems "recommended" by the Principle depends on how much epistemic weight believers in its truth attribute to the lack of empirical evidence – *alleged* by the Principle they believe to be true – for absolute motions of the relevant kind: lack of empirical evidence *from within* relative motions of the relevant kind. In any case, it is a fact of the history of science that at least the epistemic insignificance – already insinuating the nonexistence – of absolute motions of the kind of motion the Special Principle is limited to is widely taken to be secured by the Principle, which is widely believed to be true – and, of course, no less in the still more limited – specialized – form it has here been given than in its familiar, "normal" form.

Now, *that either y or x or both are in absolute motion* is a part of the absolute state of motion of *x* and *y* (and it is so most certainly if *x* and *y* are yoked together as they are assumed to be [in the antecedent of the conditional] in the Special Principle of Relativity). And it seems that it is at least sometimes – for *some x* and *y* – empirically determinable, from the point of view of *x* or from the point of view of *y*, *that* in the special *x*-vis-à-vis-*y* situation that the Special Principle is concerned with *either y or x or both are in absolute motion*, and *that* therefore a part of the absolute state of motion of *x* and *y* in that situation is empirically determinable from the point of view of *x* or from the point of view of *y*. Thus, on the basis of these – apparently true – considerations, it seems that the Special Principle of Relativity is *false* (given it asserts what it is, above, taken to assert).

How can it be that it is at least sometimes – for some *x* and *y* – empirically determinable, from the point of view of *x* or from the point of view of *y*, *that* in the situation the Special

Principle of Relativity is concerned with *either y or x or both are in absolute motion*? This is *how*:

Consider again the movable spatial points p* (as *x*) and q* (as *y*), consider them just as *initially* described [*in vacuo* under *Possibility (IV)*], consider them *anew*. In between p* and q*, prior to their collision, on the straight line between them, there are countless empty spatial points, as can be empirically verified both from the point of view of p* and from the point of view of q*; let r* be one of these spatial points. Since r* is an empty spatial point, it is an immovable spatial point; for empty spatial points cannot move. Obviously, since q* is relative to p* in uniform motion in a straight line with speed v* [> 0] toward p*, and p* is relative to q* in uniform motion in a straight line with speed v* [> 0] toward q*, either q* or p* or both are in uniform motion in a straight line *relative to* r* – not only toward r* but also toward *the respective other* [*the respective other* being p* for q*, and q* for p*], with $v_1^* > 0$ and $v_2^* = 0$, *or* $v_2^* > 0$ and $v_1^* = 0$, *or* $v_1^* > 0$ and $v_2^* > 0$. Therefore (cf. Definition2), q* or p* or both are in *absolute* uniform motion in a straight line, since either q* or p* or both are in uniform motion in a straight line *relative to* r* toward r* (and thereby also toward *the respective other*), r**being an immovable spatial point*.

Against this argumentation, it can be objected that, even if "r* is an empty spatial point" is conceded to be an empirical – empirically accessible – truth, it is perfectly invalid to conclude the truth of "r* is an immovable spatial point" from that (conceded) truth. Why should an empty spatial point be *ipso facto* an immovable spatial point? After all, it is generally accepted today that the Universe expands and has been expanding since the time of its origin; this means (among other things) that empty spatial points are moving all the time (along with filled spatial points).

Response to the objection: Not so; this is a false description of what the expansion of the Universe consists in. The true description is this: The expansion of the Universe means (among other things) that new empty spatial points are generated all the time – and once they are generated, they are *immovable*. Though immovable spatial points can be at some times *empty* and at some times *filled* (or *occupied*), their emptiness *at some time* unmistakably indicates their immovability: their immovability *at all times* (precisely speaking: at all times *of their existence*). Empty spatial points cannot move. – Or so the friends of immovable spatial points believe.

It is true: p* can be regarded as the *center* (or *origin*) of a spatial reference-system that captures the entire space, and q* can likewise be regarded as the center of a spatial reference-system that captures the entire Space; such that each of these two reference-systems is moving relative to the other in the same manner as q* is moving relative to p* and p* is moving relative to q*. Is it not also true that r*, empty as r* is, is moving along with the q*-system of spatial reference relative to the p*-system, and with the p*-system of spatial reference relative to the q*-system? The friends of immovable spatial points will answer:

r*'s *being an empty spatial point* renders it unfit for *moving along* with the q*-system relative to the p*-system, and unfit for *moving along* with the p*-system relative to the q*-system; *being empty*, r* lacks a firm connection with p* and with q*. Thus, r* is neither a part of the p*-system of spatial reference, nor a part of the q*-system of spatial reference, and is not moving along with either of them. What is really going on is that the q*-system in moving relative to the p*-system and the p*-system in moving relative to the q*-system "touch" the immovable spatial point r* at each moment with one of their *ideal – not* real – components (namely, with a component of the network of coordinates they, respectively, are): with *another one* at every moment. – Or so the friends of immovable spatial points and absolute motion will argue – *without*, of course, convincing those who do not hesitate to assert that, *since* (in their eyes) there is not the slightest shred of empirical evidence for immovable spatial points and absolute motion, there simply are no immovable spatial points and there simply is no absolute motion.

The inconclusiveness of the metaphysical issue debated in this chapter – but note: its metaphysical nature is generally *unacknowledged* – is *not* abolished if, finally, one brings into play the *General Principle of Relativity*, which is this:

> For every spatial point *x* and spatial point *y*: relative to *y* [or alternatively: relative to the system of spatial reference of which *y* is the origin] the same laws of nature are valid across all times as relative to *x* [or alternatively: relative to the system of spatial reference of which *x* is the origin].

The General Principle of Relativity can be made to contain a (rather indirect and implicit) relativity to an *observer* (and thus to experience: to observation and experiment) by formulating it in the alternative way that is indicated by the content of the square brackets above;

observer-relativity *can* in this way be included in the Principle if a system of spatial reference is taken to be always the system of spatial reference *of an observer* (who has chosen to employ it; without having been thus chosen, it is, it may seem, just a meaningless abstract entity in an infinite set of meaningless abstract equals of it, and not deserving to be called a "system of reference"). However, in the here preferred, *primarily* offered formulation of the Principle (in the formulation *not* employing what is presented in the square brackets), *observers* are left out of the picture quite radically. This is an advantage.

What is far from an advantage is the fact that the General Principle makes use of the problematic notion of *law of nature*. However, if one can find a plausible, tenable notion of law of nature, then the General Principle of Relativity is undoubtedly true; because laws of nature, plausibly conceived of, are valid – all of them – everywhere and always in *this* world (the actual world, the World); this is so because *spatial and temporal omni-extent of validity* is an indispensable conceptual requirement for laws of nature. Thus, for all times *t* and *t´* and every spatial point *x* and spatial point *y* [of *this* world, of course]: relative to *y* at *t* the same laws of nature are valid as relative to *x* at *t´*, namely, *the* laws of nature [if there are any laws of nature].

It is widely taken to follow from this that there is no absolute motion. *How does it follow?* A true answer to this question proves hard to find, and a certain metaphysical analogy strongly suggests that a true answer *cannot* be found. Here is the analogy: It is a conceptual truth that, (1), for every possible world *x* and possible world *y* it is true that relative to *y* the same logical laws are valid across all times as relative to *x*, namely, *the* logical laws; but from this it does not follow that, (2), no possible world is *absolutely actual*. Therefore, a true answer to the question of *how* (2) follows from (1) *cannot* be found; there is no such answer simply because there is no such entailment.

Regarding the logical laws, all possible worlds are on an equal footing; regarding the laws of nature, all spatial points (and all times) are on an equal footing. In the case of possible worlds, their equality vis-à-vis the logical laws prejudges nothing regarding absolute actuality: nothing regarding the manner in which absolute actuality applies, or does not apply, to them; in the case of spatial points, their equality vis-à-vis the laws of nature prejudges nothing regarding absolute motion: nothing regarding the manner in which absolute motion applies, or does not apply, to them. Thus, the General Principle of Relativity, though true, leaves the question whether or not there is absolute motion *wide open*.

82. How could one ever think otherwise? Perhaps by taking the General Principle of Relativity to entail the unimportance, the irrelevancy of absolute motion – the very question of it – *for physics*? But even *this irrelevancy* does not follow from the General Principle, not even *if* the laws of nature are taken to be identical with the *laws of physics* and one postulates in advance (fairly arbitrarily) that the laws of physics have to be formulated not only without reference to the direction of time, but also without reference to absolute motion. Not even *then* does the General Principle render (the question of) absolute motion irrelevant for physics, just as it does not render the (question of the) direction of time irrelevant for physics. After all, the *end* of physics is not merely to present laws that have a special form, a form of special spatiotemporal "purity" ["symmetry"]; it is also to point out contingent physical matters that cannot be decided empirically (even if "empirical" be taken in a rather liberal sense), *thus* opening the door to metaphysics. – And even if absolute motion (or the direction of time) *were* irrelevant for physics, it would, of course, still not follow that there is no such thing as absolute motion (or the direction of time).

Thus, *neither* the Special Principle of Relativity (as here formulated, but just the same in its other formulations) *nor* the General Principle of Relativity – the former principle does not follow from the latter, in spite of the suggestion to the contrary that is generated by "Special" vis-à-vis "General" – can be taken to support the view that there is no absolute motion.

David Lewis once remarked that the world – that is: the World – is as physics says it is and that there is nothing more to say. It is strange that it could escape this great metaphysician (and a great metaphysician he undoubtedly was) that there is *a lot more* to say about the World than physics says – *a lot more* to say affirmatively or negatively, either truly or falsely, of more or less (but always considerable) importance for us human beings. (And, indeed, Lewis himself said an awful lot more about the World than physics says.)

13 Are there laws of nature? And are there natural powers?

It is a great concession to human reason – to its *first* desire for the (humanly amenable) rationality of the World: to what is *primordially* most pleasing to human reason – that it is taken to be true, here, that every law of nature can be formulated by a *sentence*, in other words [as "sentence" is to be understood here]: by a *normal* sentence: by a sequence consisting of finitely many discrete symbols, the whole sequence being comprehensible, at least with effort, *in full detail of its* [for normal sentences *always* given] *reality-descriptive* [i.e., either true or false] *propositional content* to the human mind (though not necessarily to *every* human mind). This *concession* to human reason – though great, perhaps *too great*: too "magnanimous" – is made here because it simplifies presentations. – And, in fact, there is a further, more substantial and weightier, not purely [theoretico-]practical reason for making that concession (as will emerge in the course of this chapter).

Any *nomological assertion* XYZ – "XYZ" standing for a (either true or false) sentence – can be phrased in the following *explicit* way: "*That* XYZ is a law of nature", or rather more adapted to our customary way of speaking: "It is a law of nature *that* XYZ". This fact reveals that laws of nature (if there are any) are *states of affairs*, since, logically considered, the phrase "that XYZ", where "XYZ" is replaced by a (either true or false) sentence [by that sentence *itself*, *not* by that sentence *in quotation marks*!], is a singular term that designates a *state of affairs* (if it designates anything at all).

83. The alternative stance that can be taken to be revealed by the same (just-described) fact is this: laws of nature are *propositions*; because, in principle, the singular term "that XYZ" need not be interpreted to designate a state of affairs; it could, in principle, also be interpreted, alternatively, to designate a *proposition*. (The proposition [actual qua abstract object, or non-actual qua abstract object] which "that XYZ" designates according to this second interpretation is *true* if, and only if, the state of affairs which it designates according to the first-presented interpretation *obtains* [is *actual*].) This alternative stance, however, is rejected here – not adopted – because propositions are too finely differentiated to be laws of nature. Suppose, (a), sentence UVW is [broadly] logically equivalent to sentence XYZ, and suppose, (b), "It is a law of nature that XYZ" is true. The concept of *law of nature* requires that under these suppositions not only "It is a law of nature that UVW" be true too, that concept also requires that under these suppositions the singular terms "that UVW" and "that XYZ" designate *the same law of nature* (in other words: it does not matter for a *law of nature* how it is formulated as long as the chosen formulation is logically equivalent to some formulation that adequately captures *it*

in its being a *law of nature: it* will be the *same* law of nature under each of these formulations). Now, if laws of natures were *propositions*, the fulfillment of the second requirement would not be guaranteed, because the (supposed) fact that UVW and XYZ are logically equivalent sentences does not guarantee that the singular terms "that UVW" and "that XYZ" designate *the same proposition*. Consider: "Δ is an equilateral [Euclidean] triangle" and "Δ is an equiangular [Euclidean] triangle" are logically equivalent sentences, but "that Δ is an equilateral triangle" does not designate the same *proposition* as "that Δ is an equiangular triangle" – because the pertinent two sentences do not have the same meaning (yet they certainly *state* – in different ways – the same *state of affairs*).

Given (a) and (b), it is only reasonable *not* to accept the following: "that XZY" and "that UVW" designate two different laws of nature *qua propositions* which, however, are logically equivalent [though not identical] *qua propositions* (since the sentences XYZ and UVW are supposed to be logically equivalent); for, if one accepted this, one could easily be confronted with an infinity of logically equivalent laws of nature *qua propositions* merely by being given an infinite set of sentences which is such that *each* sentence in it is logically equivalent to *each* sentence in it and such that some sentence in it formulates a law of nature. [The most reasonable way to deal with the situation of having a sentence that formulates a law of nature, and infinitely many sentences that are logically equivalent to that sentence, is this: these infinitely many sentences *state* one and the same law of nature *qua state of affairs*; it is far less reasonable to hold that, of these infinitely many sentences, only *one expresses* a law of nature *qua proposition*, while each of them is logically equivalent to that sentence but not a law of nature; and it is perhaps least reasonable to hold that each of them expresses a law of nature *qua proposition*: we might end up with infinitely many laws of nature *qua propositions*, though, under the circumstances, we really need only *one* law of nature.]

The first logical law for the operator "It is a law of nature that …" is this:

LL1 If it is a law of nature that XYZ, then XYZ.

The second logical law for this operator is this:

LL2 If it is a law of nature that XYZ, then it is not logically necessary that XYZ.

Note that LL1 and LL2 hold no matter whether laws of nature are states of affairs or propositions (and, indeed, no matter whether there are laws of nature or not). Given that laws of nature are states of affairs, LL1 tells us that the laws of nature are all among the *obtaining*, the *actual* states of affairs (in other words: the states of affairs that *are the case*; the states of affairs that are *facts*); and LL2 tells us that the laws of nature are all among the states of

affairs that are *not logically necessary* (in other words: that *do not obtain with logical necessity*).

84. Considered by themselves, LL1 and LL2 tell us *what they tell us* only for laws of nature that, as states of affairs, can each be formulated by a *sentence* (the word "sentence" being taken to mean the same as "*normal* sentence"; see the first paragraph of this chapter); however, *every* law of nature, as a state of affair, is here taken to be *statable* by a [*normal*] sentence (see again the first paragraph of this chapter).

(Here, to "a sentence *states* a state of affairs", there corresponds "a state of affairs is *statable* by a sentence"; to "a sentence *expresses* a proposition", there corresponds "a proposition is *expressible* by a sentence". The semantic theoretical background is this: A sentence is said *to formulate* a content, i.e., a proposition or a state of affairs. If it formulates a state of affairs, it is said *to state* this state of affairs; if it formulates a proposition, it is said *to express* this proposition. Of any [*normal*] sentence *A* it is true that it *states* [hence *formulates*] a state of affairs and *expresses* [hence *formulates*] a reality-descriptive (i.e., either true or false) proposition [the state of affairs it states, and the proposition it expresses, are each named – ambiguously – by the singular term "that *A*"].)

Given that laws of nature are states of affairs, LL1 and LL2 *together* tell us that all laws of nature are states of affairs that obtain logically contingently [this is so because, (1), the obtaining of a state of affairs logically entails *its obtaining being possible*, and because, (2), the not being logically necessary of a state of affairs logically entails *its non-obtaining being possible*]. This leaves the question wide open *what* it is for a state of affairs to be a law of nature, not to speak of the question *which* states of affairs are laws of nature. Some state of affairs, however, can be a priori excluded from being laws of nature.

Among the states of affairs, *four* stand out already in ontological considerations that are of a purely formal nature. The first, s_1, is the conjunction (or sum) of *all* states of affairs; the second, s_2, is the conjunction of *all obtaining* states of affairs (i.e., of all *facts*); the third, s_3, is the [state of affairs which is the] negation of s_1; the fourth, s_4, is the negation of s_2. On the basis of LL1 and LL2, and the *concession* at the beginning of this chapter, these four states of affairs are bound to be – and can be shown to be – *not* laws of nature.

85. The state of affairs s_1 is stated by *any* sentence which is logically contradictory (because every logically contradictory sentence logically implies every sentence, and therefore the state of affairs that any logically contradictory sentence *states* logically contains all states of affairs; and there is only one state of affairs that logically contains all states of affairs: s_1). Thus, if s_1 were a law of nature, then "It is a law of nature *that something is self-*

different" would be true (*that something is self-different* is *per-se*-necessarily identical with s_1), and hence, according to LL1, "Something is self-different" would be true – which is *not* true.

The state of affairs s_3 is stated by any sentence which is logically true (because every logically true sentence is the negation of a logically contradictory sentence, and it therefore states the negation of what the latter sentence states, i.e., the negation of s_1, which is s_3). Thus, if s_3 were a law of nature, then "It is a law of nature *that everything is self-identical*" would be true (*that something is self-identical* is *per-se*-necessarily identical with s_3), and hence, according to LL2, "It is not logically necessary that everything is self-identical" would be true – which is *not* true.]

The state of affairs s_2 is a maximal-consistent state of affairs, that is: of any state of affairs, it logically contains either that state of affairs itself or its negation (because of every state of affairs it is true that either itself or its negation obtains; note: *if* possible worlds are taken to be states of affairs, then s_2 is a possible world). If s_2 were a law of nature, it would be statable by a *sentence*, a *normal* sentence: a sequence consisting of finitely many discrete symbols, the whole sequence being comprehensible *in full detail of its reality-descriptive propositional content* to the human mind (see the beginning of this chapter); but s_2 – being a maximal-consistent state of affairs, and the universe of states of affairs comprising superdenumerably many states of affairs – is *not* statable by a [*normal*] sentence.

The state of affairs s_4 is the negation of a maximal-consistent state of affairs, namely, of s_2. If s_4 were a law of nature, it would be statable by a [*normal*] sentence; but it is statable by a sentence only if the state of affairs of which it is the negation were statable by a sentence – which that state of affairs, s_2, is *not* (as we have just seen).

Furthermore, LL2 alone already suffices to discredit, to a very considerable degree, a popular idea connected with laws of nature. It is the idea that laws of nature are a source of a certain objective necessity: *nomological necessity*. If this were true, the laws of nature themselves would have to have that necessity – while the *Humean Confession*, already adopted as true (see Chapter 2), is this: *There is no other [true, objective] necessity* [i.e., genus of *necessity*] *than strictest necessity, and David Hume is its prophet*. It follows that laws of nature, if they were objectively necessary, would have to be necessary in the strictest sense. But now, the only highest (i.e., most comprehensive) species of the genus *strictest necessity* that is truly available to human reason and understanding is *logical necessity* (the word "logical" being taken, throughout this book, in the broad sense, in which it is semantically tantamount to "analytical", but with both these words not implying an essential connection to language, contrary to the way they are usually understood) – and LL2 tells us that laws of nature are *not* logically necessary. Thus, the alleged objective necessity of the laws of nature, "nomological necessity", is either *not there at all* [in the laws of nature or in anything], which is the

case if it is *not* a species of strictest necessity; or it is *humanly incomprehensible*, which is the case if it is a species of strictest necessity, but is *not* logical necessity – *which*, in fact, it is not, since the laws of nature are *not* logically necessary.

Now, it is not forbidden to treat the word "necessary" as an empty vessel and to fill it with some objective content that is substantially different from the objective content that the word *normally* (in its normal and proper objective sense) transports, and then to declare – likely enough: truthfully – that certain obtaining states of affairs – the laws of nature – are "necessary" *in that new sense*, i.e., that they are "nomologically necessary". However, it borders on intellectual dishonesty to transfer a connotation the word "necessary" *normally* (in its normal and proper sense) transports – namely, the connotation that what is *necessary* is especially useful for purposes of *explanation* – to the word "necessary" filled with that new content – a content having nothing, or nothing much, to do with *objective necessity*.

86. There are *explanations of meaning*, answering the question "What does this mean?" [which question can be *personalized*: "What do you mean by this?"] or the (epistemically) "ambitious" question "What, to the satisfaction of human reason, does this – i.e., *ought* this to – mean?"; and there are *explanations of being*, answering the question "Why is this so?" or the "ambitious*"* question "Why, to the satisfaction of human reason, is this so?". The explanations offered or spoken about anywhere in this book – whether explanations of meaning or explanations of being – are always taken to intend an answer – a *sufficient* answer – to the *ambitious* request for explanation (in the sense of "ambitious" that has just now become manifest in this note). In this chapter, now, the words "explanation", "explain", "explanatory" have predominantly to do with *explanations of being* – specifically, with explanations of *being actual*: explanations, for example, of the actuality [the being actual] of an event [i.e., of its *occurrence*], or of the actuality of a property [i.e., of its *exemplification by something actual*]. *Such* explanations can always be considered to be *also* explanations of *the actuality of a state of affairs* [i.e., of its obtaining, of its being a fact, of its factuality]; this is so because the following is a logical truth: For any *x*, *x* is actual if, and only if, the state of affairs *that x is actual* is actual.

It is far from obvious what might qualify laws of nature for explanatory purposes – *explanation* being considered to be their main intellectual function for us – if it is *not* their, alleged, objective necessity. And in fact it is *not* their objective necessity that qualifies them for those purposes: their objective necessity, to repeat, is either humanly incomprehensible or not there at all; in neither case can they be helpful in explanations. Are laws of nature *somehow* more understandable in their logically contingent factuality, more transparent, less a riddle than other obtaining states of affairs? The classical, so-called "deductive-nomological

model" of scientific explanation naively assumes the *explanatory excellence* of laws of nature. This excellence, however, is an illusion.

The facts of the World are such that a good many of them (though not all of them) can be descriptively subsumed – so to speak: "axiomatized" – by comparatively few, often mathematically formulated, true assertions; the states of affairs which these assertions *are about*, which they *state*, are, one might hold, the laws of nature. But though the laws of nature in this sense can, of course, be used, via the sentences stating them, to deduce further facts from facts (in prediction and retrodiction), they explain, or help to explain, nothing at all; for they themselves stand in sore need of explanation. After all, they are facts among facts, obtaining states of affairs – stated by true sentences – among obtaining states of affairs; nothing lifts them, regarding the usefulness for explanation, above their fellows. Their indubitable ability to "axiomatize" – to achieve, *by being stated*, a far-reaching "axiomatization", a far-reaching *summing-up* of facts – must not be confused with the ability to explain.

But is not *the beauty* – the simplicity, elegance, economy, perspicuity, symmetry, consonance – of the laws of nature something that makes them stand out from the obtaining states of affairs that are not laws of nature? Indeed, it *does* make them stand out, although the beauty of the laws of nature seems to be a *borrowed* beauty: a beauty merely derived from the beauty – the simplicity, elegance, economy, perspicuity, symmetry, consonance – of their formulations. But, borrowed or not, the beauty of a law of nature does not already make a law of nature useful for explanatory purposes (as little, one might say, as the beauty of a woman already makes her a good wife). On the contrary, that beauty evokes *wonder*, and wonder evokes the craving for explanation; in the absence of blunting habit (which – it must be confessed – we are all rather liable to succumb to), the need to explain the law of nature *itself* overrides *everything* that the law of nature might do for explaining *anything*.

What has been said so far in this chapter bespeaks that the main intellectual function of laws of nature for us is to serve explanatorily in explanations. In this perspective, the initial *concession* in this chapter can be profitably regarded: the assumption that every law of nature can be formulated by a *sentence*, by a *normal* sentence: a sequence consisting of finitely many discrete symbols, the whole sequence being comprehensible *in full detail of its reality-descriptive propositional content* to the human mind. *Regarded in that perspective*, that concession is seen to be free of any touch of arbitrariness or implausibility that it initially may

seem to be tainted with; for only *normally statable* states of affairs can serve explanatorily in explanations (which, of course, are taken to be addressed to human minds).

Explanations are here taken to be *rationally sufficient* explanations, not items that this or that human being – or this or that (smaller or larger) group of human beings – happens to be satisfied with for the time being; in other words, explanations are here taken to be explanations that (permanently, definitely) satisfy *human reason*. But now, *what* if whichever state of affairs one considers, it cannot serve explanatorily in explanations that satisfy, truly satisfy, *human reason*? This, in fact, seems to be the truth. But does this not mean that laws of nature, being states of affairs, lose their entire *raison d'être*, in other words: that the entire reason for some items being laws of nature (in the World, in w_0) *evaporates*? Does this not mean, in the end, that there are no laws of nature (in the World, in w_0) – the states of affairs one believed to be laws of nature all turning out to be just contingent facts among all the other contingent facts, all standing in the same need of (rationally sufficient) *explanation*?

From this slippery slope for laws of nature into the abyss of nonbeing, there are ways of escape; none of which, however, is truly attractive to human reason. It might be proposed: (i) laws of nature exist [i.e., some items are laws of nature in the World, in w_0; *or*: there are laws of nature in the World, in w_0] *without* a *raison d'être*; (ii) laws of nature have another (rationally sufficient) *raison d'être* than to serve explanatorily in explanations; (iii) laws of nature *do* have this latter function, but they are not states of affairs.

Whoever comes up with (iii) will have to show that entities of some other ontological category than the category of states of affairs can serve *as laws of nature* explanatorily in explanations. The prospects for achieving this objective are not good, in view of the fact that, in everyday human discourse and practice, laws of nature are overwhelmingly taken to be formulated by *reality-descriptive sentences* (albeit often in forms that are utterly abbreviated: in *formulas*), sentences that even themselves are – very often, but naively – called "laws of nature". In view of this, respecting it as an indication of truth, only states of affairs and propositions – among which are, respectively, the coarse-grained and the fine-grained semantic contents of reality-descriptive (i.e., either true or false) sentences – seriously come to mind as being the entities among which, if anywhere, the laws of nature are to be found; and it has already been pointed out in this chapter why laws of nature are *not* propositions. Thus, only the category of states of affairs is – for us, for human reason – a plausible ontological category for laws of nature.

Whoever come up with (i) have, in principle, *saved* the laws of nature; but in choosing this way of escape they are certainly not doing what is pleasing to human reason, since human reason demands, of its very nature, existence-reasons – *raisons d'être* – that are *rationally sufficient* (for being rationally sufficient, they need not be a priori reasons!). It is especially for laws of nature, it seems, that human reason demands such reasons. Indeed, (i) decidedly has the rather unattractive appearance of being a desperate holdout against the *natural* desire of human reason– *strong* in the given case – to conclude nonexistence from a believed absence of rationally sufficient reasons for existence (a desire *natural* to human reason but, of course, *not* required by human reason's nature, since nonexistence, no doubt, does not follow logically from the absence of rationally sufficient reasons for existence).

Given what can be said against (i) and (iii), (ii) emerges as the most promising way of escape for friends of laws of nature, that is: as the most promising way of saving laws of nature from nonexistence (*not*, of course, of saving from nonexistence the obtaining states of affairs that are presumed to be laws of nature; for these states of affairs exist incontestably, I should say, whether laws of nature exist or not; compare: if witches do not exist, then this does not entail that the actual people who are presumed to be witches do not exist; they exist incontestably, whether witches exist or not). Yet, option (ii), too, has a serious drawback: choosing (ii) constitutes a complete break with the Enlightened – the scientistic – tradition in the explanation of natural phenomena. When the Middle Ages had come to an end, comparatively few laws of nature were introduced, in mathematical form, as *impersonal and compendious* explanatory factors in the explanation of natural phenomena; they were intended to supersede the multitude of (throughout the Middle Ages still accepted) *personal agents*: spirits (in ancient times: "gods") and God, which multitude the Enlightened had come to judge *implausible* (some of them already not excepting God from this verdict); and also to supersede the multitude of (in the Middle Ages, due to Aristotelian influence, as "secondary causes" newly accepted) *impersonal natural powers*, which other multitude the Enlightened had come to judge *impotent*. And now to be told that, rightly considered, laws of nature – as states of affairs, but what else if not states of affairs could they be? – *do not* – in fact, *cannot* – serve explanatorily in explanations; that laws of nature, as states of affairs, have quite a different role to play, and hence have quite a different *raison d'être*? And which role, now, would that be? (And with importunate urgency behind this last question, shouldering it aside, there

comes in the minds of many quite another question: *What* on earth, if not laws of nature, can serve to *explain* to us what we want to get explained?)

Not much earlier in this chapter, it has already been suggested – but it certainly needs to be said in other words, too, and more explicitly and definitely – that the role of laws of nature, as states of affairs, is to comprise a great amount of facts, while, at the same time, being briefly and clearly statable by *normal* sentences (*normal* in the sense already described and repeatedly made use of in this chapter). Laws of nature, in this sense, do not "decree inexorably", do not "necessitate" (not even "to some degree"), do not "prescribe" or "determine" *anything*, not absolutely, and not relative to something that is already *given*; they are merely facts that to a very great extent "sum up" other facts, in such a way that *the sum they each are* can be briefly and clearly stated. The sentences that state them can serve as "axioms", as "principles", as "foundations" in predictions and retrodictions; but, *for human reason*, they have nothing effectively explanatory to say about anything (which, however, need not be what *individual* human reasoners think, immersed as they are in their cognitive predilections; on the contrary, headlong presumptuousness regarding the explanatory power of laws of nature is widespread, last but not least among scientists).

Yet it will be asked (by those not willing to give the agency of personal agents a chance): If it is not the laws of nature, *what* is it then that can serve to explain to us what we want to get explained: mainly, the actuality of the contingently actual natural phenomena, i.e., that *these* items are actual, and not others instead of them? Curiously, an idea which was discarded centuries ago – as impotent, even inane – has recently made a triumphant comeback in metaphysics (*not* in empirical science), *precisely* as an answer to that question: the idea of *powers – natural*, *impersonal* powers. One can quip: *As* for the ancients *all things were full of gods* [of the grip this other idea had on ancient minds, not so much an isolated saying, attributed to Thales of Miletus, is indicative, but rather the collective message of Ovid's *Metamorphoses*, coming when the heyday of the *gods-everywhere*-idea was, for intellectuals, already over], *so* for many contemporary thinkers *all things are full of powers: natural, impersonal powers*. (Peter Unger's 2006 book *All the Power in the World* is symptomatic for this.) But are there (in the World, in w_0) natural powers?

87. The word "power(s)" is not a word with one sense only, and it is not – and has not been – used with one sense only in this book (far from it!). The sense of "power(s)" in which natural powers are truly relevant as explanation-functional *replacements* for laws of nature, and in which, at the same time, it can be seriously doubt-

ed that there are powers – and hence *doubted* that there are *natural, impersonal* powers – will now, in this chapter, be focused on.

Just as in the case of laws of nature, the question of the existence (in the World, in w_0) of natural powers is subject to the following *mutually exclusive* and *together exhaustive* alternative *conditions* for *F*s [be they *laws of nature*, or be they *natural powers* – or be they *other F*s, for example, *powers in general*]: (a) the *raison d'être* for *F*s is to serve explanatorily in explanations; (b) the *raison d'être* for *F*s is something else than to serve explanatorily in explanations [i.e., it is some other *raison*, perhaps one consisting of several components connected by "or"]; (c) there is no *raison d'être* for *F*s.

88. Neither (a), nor (b), nor (c) – applied to natural powers (respectively, laws of nature) – does in itself *logically* imply that there are natural powers (respectively, laws of nature), or that there are *no* natural powers (respectively, laws of nature). But (a), (b), and (c) – applied to natural powers (respectively, laws of nature) – rule the discussion of *whether or not* there are natural powers (respectively, laws of nature); *this discussion* is subject to either (a), or (b), or (c).

Now, it frequently happens that a stone, for example, *is*, respectively *does*, something; for example, the stone *is* hard; the stone *breaks* [*does* break] the window. It follows logically that the stone *can be*, respectively *can do*, something. There are, therefore (one might conclude), natural (and impersonal) powers; the stone has them: the power to be hard, the power to break the window. But do natural powers, *thus conceived of* (namely, as mere correlative "possibilizations" of actualities: from *[actually] to be F* and *[actually] to do F* to *can be F* and *can do F*), serve explanatorily in explanations? If they do, then the power to be hard should serve explanatorily in the explanation of *why* the stone is hard, and the power to break the window should serve explanatorily in the explanation of *why* the stone breaks the window. But the power to be hard does not serve explanatorily in the explanation of *why* the stone is hard; rather, in any explanation of the (supposed) fact that the stone is hard, the having of the power to be hard is a logical part of what is to be explained: a logical part of *the explanandum*, because "The stone is hard" *logically* entails "The stone can be hard". Likewise, the power to break the window does not serve explanatorily in the explanation of *why* the stone breaks the window; rather, in any explanation of the (supposed) fact that the stone breaks the window, the having of the power to break the window is a logical part of what is

to be explained: a logical part of *the explanandum*, because "The stone breaks the window" *logically* entails "The stone can break the window".

The considerations concerning natural powers presented in the preceding paragraph, conceiving of natural powers in a certain straightforward way, strongly suggest, on the one hand, that there is a very good *raison d'être* for natural powers – hence that *condition* (c) does not obtain – and, on the other hand, that this *raison d'être* for natural powers is *not* the *raison d'être* to serve explanatorily in explanations – hence that also *condition* (a) does not obtain. In other words, the considerations in the preceding paragraph strongly suggest that *condition* (b) obtains – *whereas* those who hold that natural powers, and not laws of nature, are the primary candidates for being "the cement of the universe", claim, on the contrary, that (a) obtains.

89. The metaphorical phrase "the cement of the universe" is originally due to David Hume. It occurs in "An Abstract of a Book lately Published; Entituled [*sic*] *A Treatise of Human Nature*, &c." (1740) and refers (metaphorically) to the three "principles of association": "resemblance", "contiguity", and "causation" (Hume: "they are really *to us* [emphasis in the original] the cement of the universe, and all the operations of the mind must, in a great measure, depend on them"). Obviously, as originally intended by Hume, the phrase does not refer to causation *alone* – contrary to what is nowadays likely to be believed, in the wake of the title of John L. Mackie's famous 1974 book on causation; obviously, too, as originally intended by Hume, the phrase does not refer to causation as something *objective*, but as something *subjective*, as something *mind-confined*. "The cement of the universe" is here appropriated – aptly, I believe (but setting firmly aside what Hume or Mackie connected with the phrase) – to refer to laws of nature or, alternatively, to natural powers, such laws and such powers being meant as something *objective* or, perhaps, something *objective-subjective*, like *knowledge* or *explanation*, which have a subjective component in addition to their objective one. (Or should one rather say, "which have an objective component in addition to their subjective one"?)

Clearly, the believers in natural powers as *the cement of the universe* – as "the explainers of the universe" – must mean something else by the expression "natural powers" than is meant by this expression in the considerations above; for natural powers in the sense of "natural powers" that is used in those considerations cannot be *the cement of the universe*. Well, then, *what* is it that those believers intend to refer to with the expression "natural powers"?

They intend to refer to *natural inclinations* of various strengths, from perfectly irresistible (maximally strong) to barely present (very weak), all inherent in the individual objects themselves, all directed toward the becoming actual (or: real) – in the immediate, or more or less

near, or even the more or less distant future – of some, regarding actuality, in itself undetermined state of affairs.

90. Suppose *there are* (in the World, in w_0) *inclinations*. Note, then, that the power of a personal agent endowed with free will to be/do *F* – corresponding to: to be/do *F* is *in x*'s *power*, where it is conceptually [i.e., logically] entailed that to be/do *non-F* [*not* to be / *not* to do *F*] is also in *x*'s power, and *x* will decide in causal sovereignty *whether* to be/do *F* or not –, while it is usually accompanied [*given* that there are inclinations] by an inclination (of *x*) of non-maximal strength to be/do *F*, *or* indeed by an inclination (of *x*) of non-maximal strength to be/do non-*F*, is not itself an *inclination*, just as it is not the *(still) open logical possibility* (for *x*) to be/do *F*, nor the (still) open logical possibility (for *x*) to be/do non-*F* (though it entails both these possibilities). The two-sided power of a personal agent endowed with free will to be/do *F* [or *not*] is "power" and "potency" *in the primary sense*; yet, in a familiar sense, inclinations can also be called "powers" and "potencies", and even open logical possibilities can be called "powers" and "potencies", in yet another, but still familiar sense of "power" and "potency".

Typically, one and the same natural inclination had by an object can be *dormant* or *live* in the object; typically, its *live*-status in the object [this status lasting as long as it is circumstantially fixed for the particular inclination concerned] is brought about by some particular inner or outer inclination-fitting circumstance. If the inclination is *live*, then there is for the becoming actual of the state of affairs that the object's inclination is directed at *a certain* inclination-conditioned objective probability *p* greater than 0.5; how great exactly the objective probability *p* of becoming actual is, depends on the strength of the inclination. If it is a weak inclination, then the probability will be not much greater than 0.5; if it is a maximally strong inclination, then the probability will be 1. (The *effective* objective probability for the becoming actual of the state of affairs that the object's *live* inclination is directed at may be higher or lower than the inclination-conditioned objective probability *p* – due to inclination-promoting or inclination-impeding circumstantial factors.)

91. In fact*, [objective] probability* determines [*inclinational] strength*, on a scale between 0 and 1, according to the following formula: *strength* = (*probability* − 0.5)/0.5, with the condition: *probability* ≥ 0.5. Note that a merely *nominal* inclination, *not* an inclination properly speaking, has *strength* 0 [similarly, a merely *nominal* motion, *not* a motion properly speaking, has *speed* 0; see note **70** in the previous chapter]. By dropping the condition "*probability* ≥ 0.5" (thus allowing *probability* in the determination of *strength* its full range of values: 0 ≤ *probability* ≤ 1), one would allow *negative* inclinations (their maximal, *negatively directed* strength being −1), i.e., *aversions*, and one could formulate the following elegant law: *strength*(that non-*A*) = − *strength*(that *A*) [and:

strength(that *A*) = − *strength*(non-*A*)], where "*A*" stands for any either true or false sentence; in other words: the strength of the inclination toward the becoming actual of the state of affairs that non-*A* is the negative of the strength of the inclination toward the becoming actual of the state of affairs that *A*. [Note that *strength*(that non-*A*) can be positive; it is positive if, and only if, *strength*(that *A*) is negative.]

Assuming $-1 \leq$ *strength* ≤ 1, one could, conversely, have *[inclinational] strength* determine *[objective] probability*, according to the following formula: *probability* = 0.5(*strength* + 1).

Do natural powers, now taken to be *natural inclinations*, fulfill the *raison d'être* allotted to them by *condition* (a)? If they do, then there is good reason to assume that there are natural powers (in the World), taken precisely as *that* which their friends desire them to be: active explanatory factors. If they do not fulfill that *raison d'être*, *then* there is – to the extent that they are taken to be *natural inclinations* – no good reason to assume that there are natural powers, since for *natural inclinations* – what natural powers are now taken to be – no other *raison d'être* is in sight than to serve explanatorily in explanations. (There remains, *then*, the last resort: to accept natural powers, taken to be *natural inclinations*, even in the absence of a *raison d'être* for them. One can, in bare principle, do so, though the step is not pleasing to human reason; one can do so even with some ease of mind: as long as there is no decisive argument *against* the existence of natural powers taken to be *natural inclinations*. But *why* – in the absence of a *raison d'être* for natural powers taken to be *natural inclinations* – should one do so? – Perhaps there could be some kind of irrational motivation.)

As it is with everything that requires objective necessities differing from logical necessities: the empirical evidence for natural inclinations is *zero* (whereas the evidence for logical necessities is *a priori* evidence and maximally high); therefore, the empirical evidence for natural powers, taken to be natural inclinations, is likewise *zero*. – However, it may *seem* to be *quite otherwise*:

If intrinsically indistinguishable items of a certain kind *K* (like photons, or electrons) are in great numbers subjected to one and the same experimental condition [or: experimental circumstance] and *the* (if numbers are arbitrarily increased) *stable and* (if the experiment is repeated on many other occasions) *invariably recurring result* turns out to be that, among the experimentally tested *K*-items, the relative frequency of their having property *P* is close to *q*, and can be made ever closer to *q*, with $1 \geq q > 0.5$; *then* this is often taken to be empirical evidence for its being a fact that the *objective probability* of any *K*-item subjected to the said experimental condition to have property *P* is equal to *q*, or, in other words, that the

strength of the natural inclination of any *K*-item subjected to the said experimental condition to have property *P* is equal to $(q - 0.5)/0.5$ (which inclination is not negative – not an aversion – and not merely nominal: because $q > 0.5$; regarding the conceptual connection between *objective probability* and *inclinational strength*, see note **91**).

Moreover (and this is rather more common), *if* one and the same item *x*, unchanging in its intrinsic constitution (for example, a loaded die), is subjected a great number of times to one and the same experimental condition [or: experimental circumstance] and *the* (if the number of subjections is arbitrarily increased) *stable and* (if the experiment is repeated on many other occasions) *invariably recurring result* turns out to be that, among the experimentally produced outcomes, the relative frequency of the item's having property *P* is close to *q*, and can be made ever closer to *q*, with $1 \geq q > 0.5$; *then* this is often taken to be empirical evidence for its being a fact that the *objective probability* of *x*, if subjected to the said experimental condition, of having property *P* is equal to *q*, or, in other words, that the *strength of the natural inclination* of *x*, subjected to the said experimental condition, to have property *P* is equal to $(q - 0.5)/0.5$.

But these observations merely serve to show how very easy it is to believe that one is simply collecting a fact *X* on the basis of empirical evidence, how very easy it is to believe that *X* is made obvious by that evidence, *whereas*, in reality, one is performing a bold (foolhardy?) *inference to the* – presumed to be – *best explanation*, commencing with an, indeed, empirically evident fact *Y* as premise (*Y* being, in the inference, the inference-initiating *explanandum*): an inference with *X* as its *metaphysical, non-empirical* conclusion, a conclusion which *does not* follow logically from its premise (such is the nature of inferences to the best explanation: they often are *useful* (in this sense: *rational*) inferences, but they never are *logically valid* inferences).

On the other hand, it may now seem to have become clear that natural inclinations *can* rationally serve – and, in any case, *for some rational people on some occasions* do serve – explanatorily in explanations (namely, at least in the explanation of stable and invariably recurring relative frequencies); thus, under *condition* (a) for natural powers and with natural powers being identified with natural inclinations, the assumption of there being (in the World) *some* natural powers may seem justified, justified *enough*, *although* it can, just as rationally, also be *denied* that there are any natural powers, and held that the inferences to the – allegedly – best explanation which yield, by yielding natural inclinations, natural pow-

ers, have, all of them, a conclusion *that is not true*. Well, perhaps there are natural powers – under *condition* (a) for natural powers, with natural powers being identified with natural inclinations. Yet, so far, the explanatory function of natural powers seems highly restricted, namely, to the explanation of *statistical facts*: facts about relative frequencies in (large) observation-sets. What about the explanation of non-statistical facts, for example, the *singular* fact that the die, having been thrown the tenth time onto this particular normal table and having come to rest, presents on its upper side 6 dots; or the *general* fact that the die, *whenever* it is thrown onto the table and comes to rest, presents on its upper side 1, 2, 3, 4, 5, or 6 dots?

The die has, of course, the bare possibility – and hence *the power qua bare possibility* (the word "power" can be used in this sense) – to come to rest with 6-dots-up on the tenth throw (in the given environment); but this is far from explaining *why*, having been thrown the tenth time, it came to rest with 6-dots-up. If the friends of natural powers, wishing to avoid talk of laws of nature, are not content to explain this singular fact by sweepingly and vaguely invoking an unspecific but collectively determinative mass of explanatory – inclinatory – factors in the die and its contemporarily given environment – which seems an unsatisfactory way of explanatory procedure – but wish to offer a *focused* explanation in terms of natural powers, then they will need to assume – in the most likely (normal, ordinary) scenario of circumstance – *the relevant specific power qua inclination* in the die; and thus the die will have to be *loaded*, for, if it is *fair*, then *the power qua inclination* to come to rest with 6-dots-up cannot be in the die (though the bare possibility of this – *the power qua bare possibility* – is there, of course). Moreover, the assumed power/inclination in the die to come to rest with 6-dots-up must, for a focused explanation of the singular fact in question, be assumed to have *strength 1*, such that *if* the power/inclination is activated and changes from *dormant* to *live* (which takes place, for example, when the die is thrown the tenth time onto the table), that *then* the die *unfailingly* comes to rest with 6-dots-up. Any lesser-than-1-strength of the assumed power/inclination in the die will presumably, given sufficiently many die-throws (in the given environment), become manifest in some stable relative frequency *q* for 6-dots-up; but regarding the explanation of the singular fact that the die, having been thrown the tenth time onto the table and come to rest, presents on its upper side 6 dots, any lesser-than-1-strength of the assumed power/inclination in the die will leave an explanatory gap, rendering the intended explanation of that singular fact *by* that assumed power/inclination more or

less, but at least *somewhat*, unsatisfactory, i.e., *rationally insufficient*, hence, after all, a *non*-explanation of that fact.

Is the sentence "The [*given* the tenth throw of the die in the relevant environment] *live* power/inclination of the die to present [or: to have it become actual – to have it become a fact – that *it* presents] 6 dots on its upper side *has strength* 1", regarding the sentence's *bare* meaning, self-explanatory? Certainly not; but the most plausible meaning-explanation of that sentence is this: "The die is thrown the tenth time in the relevant environment [part of which is the table onto which the die is thrown] and it is *objectively necessary* that if the die is thrown in the relevant environment for the tenth time, then it will come to rest presenting 6 dots on its upper side." In this meaning-explanation, the two-place sentence-operator "if _, then _" is to be interpreted as being synonymous with the operator of – so-called – material implication, i.e., it means the same as "not _, or _"; this interpretation serves clarity and definiteness, and there is no philosophically robust reason against it. And furthermore, given the *Humean Confession*, adopted in this book, the objective necessity intended in the meaning-explanation can only be *strictest necessity* – of which the only known highest species (*humanly known* highest species: understood by us and known by us to be exemplified) is *logical necessity*. But now a huge problem for natural powers/inclinations with maximal strength [strength 1] has become visible under *condition* (a), according to which the *raison d'être* of natural powers, and no doubt especially of natural powers with maximal strength, is to serve explanatorily in explanations:

The intended objective necessity, *as strictest necessity*, is *either* logical necessity *or* an incomprehensible strictest necessity, "a necessity as strict as logical necessity, but a necessity whose existence (i.e., the existence of instances of it) is (*rationally*) unknowable (to *us*), and which is inscrutable in all of its alleged instances" – to quote note **5**, which introduces the idea of *dark necessity* (in Chapter 2). Now, the second alternative in this "either-or"-truth is unacceptable under *condition* (a): natural powers/inclinations which have strength 1 *and* whose *raison d'être* it is to serve explanatorily in explanations cannot import an objective necessity *that is opaque to human reason* (while they certainly *do* import *an objective necessity*), because a *dark* necessity is useless for explanations (intended to be rationally sufficient for rational human beings); it is as useless as invoking *fate*, or *destiny*, or *doom* in explanations (for, as the first line of W. H. Auden's poem "The Wanderer" hauntingly puts it, "doom [destiny, fate] is dark and deeper than any sea-dingle"; dark necessity – doom, destiny, fate –

cannot provide the light of explanation to human reason). Thus, under *condition* (a), only the first alternative of the above "either-or"-truth remains: remains *as true* (under *condition* (a)), and *logical necessity* turns out to be the intended objective necessity: the objective necessity that natural powers/inclinations of strength 1 import – *given* their *raison d'être* it is to serve explanatorily in explanations.

But *can* this be true? If it were true, then the above-stated meaning-explanation of the sentence "The *live* power/inclination of the die [now thrown the tenth time onto the table] to present 6 dots on its upper side *has strength* 1" would, *precisely specified* (i.e., with "logically necessary" replacing "objectively necessary" in it), be this: "The die is thrown the tenth time in the relevant environment [part of which is the table onto which the die is thrown] and it is *logically necessary* that if the die is thrown in the relevant environment for the tenth time, then it will come to rest presenting 6 dots on its upper side." But there is *no* such logical necessity; for it is perfectly (in the first place: *consistently*) conceivable that the die is thrown in the relevant environment for the tenth time and it *does not* come to rest presenting 6 dots on its upper side. This negative finding remains true no matter how comprehensive *the relevant environment* may be taken to be; for there is no logically valid inference – no relative-to-the-given-basis logical necessity – of the actuality, in the future, of any in itself actuality-undetermined state of any *x* on the basis of what happens now to *x*, *not even* if the environment of what happens now to *x* is taken to be so comprehensive as to encompass the present state and all the past states of the World.

92. *Provided*, of course, that the just-mentioned states – and therewith the environment of what happens now to *x* and, indeed*, itself* what happens now to *x* – are *future-pure*: *not* contaminated by content that, in its nature, reaches *into the future* (*beyond* what happens *now* to *x*; but note: what happens *now* to *x* may take longer than just a moment; this much latitude must be allowed); *which* contamination takes place, for example, if the laws of nature are brought into play to logically fortify the present state together with the past states of the World, and are, in effect, taken to be a part of the environment of what happens now to *x*. *Nota bene* (vis-à-vis the just-stated *proviso*): *the assumption of general future-purity* – i.e., the assumption that all states *of* the World and *in* the World are *future-pure* (regarding the future that comes *after* them) – rules the entire discussion in this chapter.

Consider another example of the said contamination: Sometimes a certain present state of *x*, perhaps together with certain past states, does indeed *analytically*, hence *logically* (in the broad sense), imply the actuality of a certain (in itself actuality-undetermined) future state of *x*. For example, given that *x dies now*, i.e., is *now* (and likely has been for a while) *in the process of dying*, it follows *logically* that *x is dead* in the future. This

phenomenon is the effect of *describing* the present (and past) in the light of the future – *by hindsight*, so to speak. Thus, *x's states of dying*, and therefore the states of the World of which they are parts, are *not* future-pure states. *Here*, and in similar cases, there follows no exception to the general rule that *what the future brings cannot be logically inferred from the present and past*; rather, the example in question is excluded from being a case for the general rule's application: by the above-stated *proviso*, i.e., by the sentence beginning with "*Provided*, of course, …" (see the preceding paragraph). That the states of *x* in question are not future-pure may *here* be pleaded with no less justification than when World-states are taken to be *loaded* with the laws of nature.

This having been said, the basic presupposition adopted in this chapter – the presupposition that justifies *the assumption of general future-purity* formulated in the last sentence of the second-to-last paragraph – is nevertheless this: that *all* the states of the World and of *x* are, *in themselves and objectively considered* (considered as, *fundamentally*, they ought to be considered), *future-pure*: containing no information on "what will come", though, of course, they can be *loaded by us* with such information – for example, by *describing* them in certain ways –, creating the illusion that one can, after all, logically infer the future from the present and past (at least sometimes and to some extent).

Summing up: The most reasonable – to human reason most attractive – frame-condition for the discussion of the existence of natural powers is, no doubt, *condition* (a): "the *raison d'être* of natural powers is to serve explanatorily in explanations", according to which condition natural powers must be natural inclinations [what else, under (a), could they be? – certainly not bare possibilities]. (Conversely, the obtaining of *condition* (a) is made inevitable once natural powers are identified with natural inclinations.) Let *condition* (a) qua sentence, or qua proposition [expressed by the sentence (a)], be accepted as *true*, qua state of affairs [stated by the sentence (a)] as *obtaining*; there is really no alternative to this (the situation is different in the case of laws of nature). But, under *condition* (a) [and conceptual analysis and the *Humean Confession* and the cognitive limits of human reason], we are confronted, we have seen, with the following *dilemma*: *Live* natural powers/inclinations of maximal strength (strength 1) import *either logical necessity or dark necessity*, in the following precise sense: the situation of activation for the natural power/inclination *obtains* [i.e., the power has become *live*], and *it is either logically or darkly necessary*: if the situation of activation for the power/inclination obtains, then what the power/inclination is directed at *comes to pass*. Now, if this conditional, the one just-formulated, is supposed to be *darkly necessary* – if its truth is taken to be a matter of *doom*, *destiny*, *fate* –, then the natural power/inclination which that conditional is [intrinsically-essentially] "about" fails to serve explanatorily, fails most miserably (no matter what it is directed at) to perform the office which – given the

adoption of *condition* (a) – it was introduced to perform; for *dark necessity* can give us – can give our reason – no explanatory light. If, however, the conditional in question is supposed to be *logically necessary*, then this supposition just isn't true. Under *condition* (a), either side ("horn") of the *dilemma* – the dilemma that *condition* (a) itself contributes decisively to creating – is unacceptable (though for different reasons). Therefore, under *condition* (a) [here accepted as true!], the prospects for the existence of natural powers/inclinations are bad indeed – at least for those with maximal strength (strength 1) when *live*, which are the only ones that can conceivably serve to *explain* non-statistical facts: their *raison d'être* – i.e., the rational condition under which they (it is reasonable to suppose) would exist – is to serve explanatorily in explanations; but they do not fulfill this condition.

93. What is a power/inclination *with less than maximal strength when live* other than something that essentially involves a *diminished objective necessity*: an objective necessity with strength less than 1 (but greater than 0)? Indeed, it is nothing other than something that essentially involves a diminished objective necessity, which (*given* the *Humean Confession*, adopted in this book, and the cognitive limits of human reason) is *either* a dark *or* a logical strictest [that is: strictest$_1$] necessity with strength [strictness$_2$] less than 1 (but greater than 0). In *either* case, we now can see, the prospects for the existence of natural powers/inclinations *with less than maximal strength when live* are, rationally considered, bad – though, for a moment, they looked not so bad –, are no less bad than they are, we have seen, for the existence of natural powers/inclinations *with maximal strength when live*:

Natural powers/inclinations with less than maximal strength when live *that essentially involve diminished logical necessities* – logical necessities with strength less than 1 (and greater than 0) – are conceptually intractable; they simply drop out of the theoretical picture. (Logical necessities with strength less than 1 and greater than 0 must be based on *logical probabilities* less than 1 and greater than 0.5, according to the following formula: *strength* = (*probability* − 0.5)/0.5; but Carnap's *The Principles of Probability* is the huge monument to the conceptual intractability of *logical* probability.)

Natural powers/inclinations with less than maximal strength when live *that essentially involve diminished dark necessities* – dark necessities with strength less than 1 (and greater than 0) – cannot, rationally considered, explain whatever they are invoked to explain, just as natural powers/inclinations with maximal strength when live (because they essentially involve *undiminished dark necessity*) cannot explain, we have seen, whatever *they* as powers/inclinations are invoked to explain; under *condition* (a) – rationally adopted as true for natural powers – their existence is quite out of the question.

[It is perhaps not unimportant to note that if a state of affairs has an objective necessity whose strength is less than 1 and greater than 0, then that state of affairs is *not* objectively necessary (simpliciter), and is *not* itself "an objective necessity" (as one says), although it does have a certain *diminished* objective necessity; if, howev-

er, it has an objective necessity whose strength is 1, then it has an *undiminished* objective necessity, and it *is* objectively necessary (simpliciter), and is itself "an objective necessity".]

Regarding the explanation of non-statistical facts, there seems to be a certain kind of power/inclination with strength 1 (when *live*) which is impervious to the dilemma that, a little earlier in this chapter, has been proposed (given *condition* (a) [accepted as true], and conceptual analysis and the *Humean Confession* [accepted as true] and the cognitive limits of human reason) for natural powers/inclinations with [*live*-]strength 1 when they are used in the explanation of those facts; that dilemma is disarmed, disabled for *that kind* of power/inclination with strength 1 because *logical necessity* (simpliciter) is for *that kind* of power/inclination with strength 1 *perfectly all right*, under *condition* (a), as an interpretation of the objective necessity imported by the phrase "*live* power/inclination with strength 1". However, *that kind* of power/inclination turns out to be a kind of *supernatural* power/inclination, namely: the *live* power/inclination *of God*, with strength 1, to actualize [make a fact] the state of affairs *p.* This kind of power/inclination encompasses – at least prima facie – a plurality of *God-powers* (to be treated *structurally* just like *natural* powers/inclinations with strength 1) simply by substituting for "*p*" names [for example, "that"-phrases formed with reality-descriptive sentences] of states of affairs the actualization of which by God (this being another state of affairs: that *p* is actualized by God is a different state of affairs than *p*!) is in itself regarding *its* actuality undetermined and in the future (after the given *now*). *God-powers*, of course, exist only if God exists; but let the existence – the actuality – of God be granted for the sake of the argument (or rather, for the sake of the further – contrastive – illustration of the conception of powers *as inclinations*).

One thing is particularly remarkable about God-powers: they all have the [*live*-]strength 1. As Albert Einstein once remarked, "He [God] does not throw dice" (i.e., "All His [*live*] powers/inclinations have strength 1") – which, however, is *here*, *pace* Einstein, *not* to be understood in such a way as to entail that no actual event is left undetermined by the course of the World that precedes it; it is *here* a strictly *theological* tenet (about God's nature) and assumed in limitation to *the acts of God* (but perhaps everything that is actual *logically contingently* – actual not by logical necessity – is actually an act of God or a logical consequence of one?). It seems that most God-powers are, at present, *dormant*, but let's suppose that the power/inclination of God to actualize the Second Coming [i.e., to actualize the state of affairs

that the Second Coming consists in] is being activated and is *live* – with strength 1. There is, then, an obtaining circumstance [or: obtaining condition] that brings the *live*-status of this God-power about. Which circumstance is it? It is, and given the nature of God it can only be, the "circumstance" [in scare quotes, because this word seems somewhat inappropriate here, as does the word "trigger"] that *God wills (to actualize) the Second Coming*. Accordingly, we have as the meaning explanation of "The [*given* the Second Coming is willed by God] *live* power/inclination of God to actualize the Second Coming has strength 1" the following statement: "God wills to actualize the Second Coming and it is *logically necessary* ["logically necessary" replacing "objectively necessary"] that if God wills to actualize the Second Coming, then God will actualize the Second Coming"; *here*, the replacement of "objectively necessary" by "logically necessary" is perfectly all right – *perfectly all right* not only theologically, but also if considered *within* the confines of *condition* (a) [and the *Humean Confession*].

94. Compare these two power/inclination-sentences, especially with regard to their chances of being true (*presupposing* God's existence, with God having the attributes one normally attributes to Him):
"The [*given* the Second Coming is willed by God] *live* power/inclination of God to actualize the Second Coming has strength 1" and
"The [*given* the tenth throw of the die in the relevant environment] *live* power/inclination of the die to present [or: to have it become actual – to have it become a fact – that *it* presents] 6 dots on its upper side has strength 1".
And compare the following respective meaning-explanations of these two power/inclination-sentences:
"God wills to actualize the Second Coming and it is *logically necessary* that if God wills to actualize the Second Coming, then God will actualize the Second Coming" and
"The die is thrown the tenth time in the relevant environment [part of which is the table onto which the die is thrown] and it is *logically necessary* that if the die is thrown in the relevant environment for the tenth time, then it will come to rest presenting 6 dots on its upper side."

If the statement "God wills to actualize the Second Coming and it is *logically necessary* that if God wills to actualize the Second Coming, then God will actualize the Second Coming" is *false* (we have *supposed* – for the sake of the argument – that it is, at present, true), then its falsity is *not* due to the falsity of its *second* conjunct. For, that conjunct is certainly *true*, because "If God wills to actualize the Second Coming, then God will actualize the Second Coming" is a [broadly conceived] *logical* truth (alias: *analytical* truth): it is a *per-se*-truth, just as "2 and 3 are the only immediately consecutive prime numbers" is a *per-se*-truth ("*per-se*-

truth" is unfamiliar, but in contrast to the standardly used, familiar "*logical* truth" – for just the *same* concept – it is *not* misleading [potentially misleading, and sometimes in reality]; cf. note **34**). And from "If God wills to actualize the Second Coming, then God will actualize the Second Coming" being *logically* true [or: *per se* true] it follows "It is *logically necessary* [or: *per se* necessary] that if God wills to actualize the Second Coming, then God will actualize the Second Coming".

If the meaning-explanatory statement in question – explaining, explicating the meaning of "The *live* power/inclination of God to actualize the Second Coming, has strength 1" – is *false*, then its falsity must be due to God's [*now*] just not willing to actualize the Second Coming, that is: its falsity must be due to the falsity of its *first* conjunct.

The general picture is this: All *dormant* God-powers – all *dormant* powers/inclinations of God, all with strength 1 when *live*, to actualize a state of affairs *p* the actualization of which by God is in itself regarding *its* actuality undetermined and in the future (after the given *now*) – amount to this: It is logically necessary that if God wills to actualize *p*, then God will actualize *p* [and hence *p* will obtain, will be a fact], *but* God does not [*now*] will to actualize *p*. And all *live* God-powers – all *live* powers/inclinations of God, all with strength 1, to actualize a state of affairs *p* the actualization of which by God is in itself regarding *its* actuality undetermined and in the future (after the given *now*) – amount to this: It is logically necessary that if God wills to actualize *p*, then God will actualize *p*, *and* God [*now*] wills to actualize *p*.

95. Instead of "God wills to actualize *p*", one can briefly (and synonymously) say "God wills *p*", hence: instead of "God does not will to actualize *p*", one can briefly (and synonymously) say "God does not will *p*" (which does not mean the same as "God wills non-*p*"!). For, at least as far as God is concerned, to will a state of affairs is to will to actualize it. (As far as human beings are concerned, the matter is much more complex, though here, too, to will a state of affairs can often be taken to simply mean: to will to actualize it.) Thus, [1] "It is logically necessary that if God wills *p*, then God will actualize *p*" has the same meaning as [2] "It is logically necessary that if God wills to actualize *p*, then God will actualize *p*". However, whereas [1] (and therewith [2]) logically entails [3] "It is logically necessary that if God wills *p*, then *p* will be the case", [1] (and therewith [2]) does not say the same as [3]. Yet, though it does not say the same as [3], though it is *not synonymous* with [3], [1] (and therewith [2]) seems to be logically entailed by [3] nonetheless: Suppose God wills *p* – in other words: wills to actualize *p* – and suppose (via assuming [3]) this logically necessitates that *p* will be the case; then, does this not also logically necessitate that God will actualize *p*?

Now, consider *the striking contrast*. Let us assume – for the sake of the argument – that D.T. is the most powerful human being that ever existed and will ever exist (it is not entirely unlikely that D.T. himself is actually considering himself to be that human being). Yet D.T. has neither the *live* nor the *dormant* [merely dispositional] power/inclination of strength 1 to actualize *p* – in the future, *p* being *any* state of affairs that is in itself regarding actuality undetermined. The reason for this grand impotency of D.T. is that, for *any such* state of affairs *p*, it is *not* logically necessary that if D.T. wills to actualize *p*, that then D.T. will actualize *p*, in other words: it is *logically possible* that D.T. wills to actualize *p*, but *will not* actualize *p*. And D.T. need not feel bad about this (if it ever comes within his ken, which is very unlikely), for the absence of logical necessity in going from willing to the completion, consummation of the will in the becoming actual of what is willed – this absence is undeniable, *not only* in the case of D.T. *but in the case of each and every one of us*. And this is true too: Not only D.T. but each and every one of us wills to actualize many a state of affairs – and rather often, even normally (though not always), the state of affairs we will to actualize *will*, indeed, be the case, even perfectly within the time span within which we expected it to become actual. It very much *seems* – though we cannot be sure of this – that we are in the business of *actualization* (and not just passively waiting to see what will happen, what will become actual). *Still*, it is *always* logically possible – and not infrequently it is, beyond reasonable doubt, actually the case – that we will to actualize a state of affairs – in the future, a state of affairs that is in itself regarding actuality undetermined – and the willed state of affairs will never be the case, meaning (among other things) that we will never actualize it.

If one is *not* ready to accept God as an active agent (and today even many *believers* are *not* ready to accept Him as an active agent, whereas formerly all believers so accepted Him, even highly rational believers – Nicolas Malebranche, say), *then* in no case, not even in the most ordinary cases, is it possible to *explain* (*rationally sufficiently*, though, *nota bene*, only "modestly": "under the circumstances given earlier", i.e., only relatively, not absolutely) a non-statistical state of affairs (its obtaining: its being a fact) by invoking *a* [under the circumstances given earlier, at that earlier time] *live* power/inclination of strength 1 toward the actuality (or logically stronger: toward the actualization/causation) of that state of affairs – one *had* (at that earlier time) by something or someone. For, by invoking that power/inclination, leaving God out of the picture, one will invoke – as included in its constitution, in the manner already amply illustrated – an instance of objective necessity which, under the *Humean Con-*

fession and the cognitive limits of human reason, is either *comprehensible but not plausible* (being an implausible, indeed untenable, alleged instance of *logical* necessity), or *incomprehensible* (being an alleged instance of *dark* necessity). In either case, the high human objective of (rationally sufficient) *explanation* is not attained. But, as a matter of fact, *neither* is this high objective attained – or so it seems to many of us humans *nowadays* (it did not seem so to Malebranche) – by accepting God as an active agent and having recourse to the will of God, *although*, if *He* wills [to actualize] a state of affairs – say, each one of those special states of affairs called "the laws of nature" –, then that state of affair will, *logically unfailingly*, be the case; that much is certain.

Why is it that God's will fails to be *explanatory* – at least in the eyes of many? Of course, many doubt that God exists, and many, while at least tentatively accepting God's existence and His active will, *in teleological perspective* do not understand actual *willings* [the noun "willing" always here in the sense of "act of will"] they attribute to God (because they presuppose that God's willings would have to be *good in a humanly comprehensible sense*). But let us focus on the purely causal-explanatory issue (leaving the teleological-explanatory issue quite out of consideration). The will of God is a *free will*: He has the ability of choosing to make actual, or not to make actual, His (previously merely possible) willings: His acts of will. This (two-sided!) ability is a *power, in an excellent sense* (see Chapter 4, and see note **90**), but it is not an *inclination* (a power in the sense examined in the present chapter). However, in God (due to His ontological perfection), that ability – free will – is bound up, when exercised, with the *live* inclination of strength 1 – in fact, with the logical necessity – to actualize *the object* of *the actualized* (previously merely possible) *result* [i.e., *the object* of the resulting actualized – hence actual – willing, act of will, immediate action] of His exercising that ability – *if*, and only *if*, a result *with an object* was in fact actualized in that exercising: *the possible results* are, (i), God's willing to actualize [the state of affairs] *p*, or, (ii), God's not willing to actualize *p*; the first possible result has *p* as its *object*; the second possible result *has no object* (*non-p* is *not* the object of it, it is the object of God's willing to actualize *non-p*).

We, too, have free will, but in us this ability, this power of choosing is – constitutionally – not bound up, when exercised, with the *live* inclination of strength 1 to actualize *the object* of *the actualized result[-with-object]* of our exercising that ability – even if a result *with an object* was in fact actualized in that exercising. Thus, it comes to pass that I, an arbitrary example of an actual human person, will to actualize *p* – that is: my willing to actualize (a pre-

viously merely possible) *p* is actualized by me in my choosing [to will or not to will] – *and* I do not actualize *p*, as is often very noticeable by the fact that *p* does not even become actual. Perhaps this non-actualization by me of the object of my by-me-actualized willing is *always* the case? [There may seem to be a necessary exception: my by-me-actualized willing to actualize *that I will to actualize q*– does it not logically entail that I actualize that I will to actualize *q*? No, it does not, because my actualizing that I will to actualize *q* is *in the future* relative to my by-me-actualized willing to actualize that I will to actualize *q* – *if*, indeed, I, or *mutatis mutandis* anyone else, ever actualized such a willing!] This, in itself, diminishes the explanatory value of *our* exercisings of our free wills – notwithstanding that, very likely, they are not taken *alone by themselves* in would-be-explanations on their basis, but as undergirded by a scaffolding for *actuality-prolongation* (regarding *actuality-prolongation*, see Chapter 4). In the case of God, this diminishment of explanatory value has no analogue (as we have just seen). What, however, is present as a potentially – for epistemically "ambitious" minds – *detracting factor from explanatory value* in *all* exercisings of *all* free wills – in the exercisings done by the free wills' respective owners: by us, or others, *or by God* – is the absolute *causal* (usually *not* also teleological!) arbitrariness of these exercisings: there is no going behind them *causally*, though, of course, they are each *done* by the relevant agent, that is: terminate in a willing of the agent, actualized by the agent, *or* in a not-willing of the agent, *no less* actualized by the agent; "the buck stops here", as one says (and as was posted on President Truman's desk in the Oval Office). This causal arbitrariness – the fact that the "whether-or-not" of something is up to the *liberum arbitrium* of the agent – can seem and does seem to many thinkers to disqualify free will – last but not least the free will of God – from explaining *anything*; indeed, many have been misled by this causal arbitrariness into confusing free will (as here conceived of: as *libertarian* free will) with *chance* – which is the archenemy of all explanation!

What we deep down in our rational minds – irrationally, in the end – crave for, *as the one and only* (though variously instantiated) *operant explanatory factor in all causal explanations*, is [true, objective] *necessity* which, (a), is *strictest* (and strictest *without gradation*, so that strictest necessity, for example, logical necessity, *does not* turn out, confusingly, to be also "more or less strict" [namely, in a second, quite different sense of "strict" – say, *more or less* logically necessary: *in some higher or lower degree* logically necesseary]) *and* which, (b), is to human reason *perfectly transparent, perfectly lucid* (hence perfectly clear of "doom and

fate", i.e., of strictest but, to human reason, "dark" [true, objective] necessity, which *perhaps* exists [with its instantiated species] in addition to logical necessity [with its instantiated species]). And who can blame us for this *ultrarational craving*? After all, what we desire – ultimately: if we allow our desire to go all the way – is *the absolute best* in causal explanation, something of highest true value: *absolute causal-explanatory perfection*. Unfortunately, this lofty "mathematical" ideal of absolute causal-explanatory perfection is unrealizable: it cannot be realized by us human beings. And, really, we *do* know this. And now, do we – should we – *really* want it: *absolute causal-explanatory perfection*?

96. What, conceivably, would be for us human beings the absolute apex of explainability? – This apex would be if we could convince ourselves that *every obtaining state of affairs is logically necessary*, and if this conviction of ours – that is: if the proposition which is the object of the conviction – were true. Then, for any obtaining state of affairs *p*, we could answer the question "Why does *p* obtain, why is *p* the case?" simply *and truthfully* with "Why, it is logically necessary", and that would explain *p*'s being the case *optimally* because the logical necessity of a state of affairs explains the actuality of a state of affairs – its being-the-case – better than anything else, namely, *with unsurpassable rational sufficiency*. Of course, the logical necessity of some obtaining states of affairs would be easier to understand than the logical necessity of other such states of affairs, but this inhomogeneity would be inconsequential and would not shake our conviction that the obtaining of every obtaining state of affairs is *absolutely perfectly* explainable (at least for a perfect reasoner, whose perfection in reasoning all of us strive to approximate as much as we can, do we not?).

The trouble is that the statement "Every obtaining state of affairs is logically necessary" is just not true, as *all who think* believe (with a few exceptions, one being Spinoza – *if* the strict necessity Spinoza sees as ruling all things is taken to be *logical* necessity [at this point, one should remember that "logical necessity" is a very usual but not wholly felicitous designation for *per-se*-necessity]). Why do they all believe that "Every obtaining state of affairs is logically necessary" is *not* true? Because they all can cite many states of affairs, all of which, they say, obtain but are not logically necessary; those states of affairs, they say, are not logically necessary because one can *imagine* them as being not the case.

However, the just-mentioned method of establishing, in a given case, the negation of logical necessity – i.e., the logical possibility-*that-not* – can seem a rather dubious method, to the point of appearing to be a method completely discredited. For, quoting *the mainstream*, "Do not many *benighted* people – even otherwise enlightened ones, like Descartes – believe that it is *not* necessary that they, while being conscious, have a body because they can *imagine* themselves to be conscious without a body?"

Note that all standard systems of alethic (ontic) modal logic, and among them the system appropriate for logical necessity, allow, without incurring inconsistency, the adding of an axiom to the effect of asserting "Every obtaining state of affairs is necessary" (by adding such an axiom, the systems merely incur modal triviality, *not* inconsistency). And, in fact, there is an argument for (the truth of) "Every obtaining state of affairs is logically necessary":

Metaphysical perfection requires that there be just one possible world, even in the broadest – logical, analytical – sense of "possible"; *under metaphysical perfection*, it follows that w_0 – the actual world, the World – is *the* only logically possible world [because it is, after all, *a* logically possible world]. Now, suppose *p* is an obtaining – i.e., actual – state of affairs; hence [since *being actual* is *being actual at the actual world*] *p* is a state of affairs that is actual – i.e., obtains – at the actual world: at a logically possible world, and therefore, *under metaphysical perfection*, at *every* logically possible world; hence *p* is logically necessary. – Therefore, what was to be proven *is* proven: *Every obtaining state of affairs is logically necessary*.

Like all arguments, this argument has a premise: the supposed *rule* – supposed *ruling reality* – of *metaphysical perfection*, *metaphysical perfection* being taken to have a crucial *conceptual implication*. (Since the truths referred to in parentheses or between dashes in the argument are quite indubitable, they are not counted as premises.) If logically valid, the argument could – like all logically valid arguments – be "turned negative": by arguing on the basis of the negation of its conclusion for the negation of its premise [if an argument happens to have several premises, they can always be integrated into *one* premise: their conjunction]; the negative-inversion of a logically valid argument is just as logically valid as the original. *However, is* the argument in question a logically valid argument? *Does* its premise logically validly establish its conclusion (so that if the former is true, the latter must be true, too)? From considerations earlier in this book, we know that the logical validity of its last step – the logical validity of the inference of *is logically necessary* from *obtains at every logically possible world* – can be doubted. *But*, let's suppose the argument *is* logically valid: every step of inference in it *is* logically valid. Then this still doesn't mean that we (rationally) have to accept its conclusion as being true; for *this* acceptance, the argument's premise needs to be accepted as being true *first*.

Now, what can be said in favor of metaphysical perfection? – "Is it not [part of being's] metaphysical perfection if the extent of contingency, even of logical contingency, is minimal, minimal to the point of disappearance? Is it not [part of being's] metaphysical perfection if everything *is* as it *absolutely must be*?" Two objections can be raised against these *rhetorical* questions, which questions, to boot, take it tacitly for granted that metaphysical perfection *rules* – two objections against accepting their "invitations", and therewith against accepting anything that would make their "invitations", i.e., the assertions they insinuate, come out true: [1] Even though the disappearance of contingency is one of the oldest dreams of philosophers (and is certainly *not* a nightmare for those philosophers who dream that dream!), *it can still be doubted* that it is an integral part of metaphysical perfection. [2] But even if it were an integral part of metaphysical perfection, *it can still be doubted* that metaphysical perfection *rules* (i.e., rules the totality of being).

Thus, one can legitimately hold against the above argument for "Every obtaining state of affairs is logically necessary" that metaphysical perfection *does not rule – is not a ruling reality –*, at least not in the sense of "metaphysical perfection" which is needed for the argument (which sense is urged by the two rhetorical questions above). Furthermore: [3] It seems to be just false that there is *just one* logically possible world (contrary to what is claimed as part of metaphysical perfection at the beginning of the argument); its being false would explode the argument, for the truth of "There is just one logically possible world" is what the argument really relies on (*no matter* whether metaphysical perfection rules or not, *no matter* whether metaphysical perfection conceptually implies that there is just one logically possible world, or not). But if possible worlds are, for example, maximal-consistent conjunctions of states of affairs, then there must be, *given* the vast plurality of states of

affairs, more than one possible world, hence more than one *logically* possible world (since every possible world is a logically possible world).

However, while maintaining the ruling reality of metaphysical perfection (in a very much enriched, *Leibnizian* sense), one *can* escape the "inescapable" plurality of logically possible worlds (even without resorting, as a matter of methodological principle, to ontological parsimony) by holding that *prima facie* logical possibility is not *ultima facie* logical possibility, hence that the former is not logical possibility *simpliciter*: is not *that* which is *simply* and *properly* called "logical possibility"; *and* by holding that, while many items are *prima facie* logically possible worlds, there is only one *ultima facie* and, therefore, *simpliciter* [*simply* and *properly*] logically possible world: w_0. And *why*? The *Leibnizian* answer (i.e., the answer *in the vein of* Leibniz) is this: *Because* w_0, being *per se* [i.e., with logical necessity] the best of all *prima facie* logically possible worlds, is the only *prima facie* logically possible world that God, in the absolute perfection that belongs *per se* [with logical necessity] to Him, *logically can* actualize – which, indeed, He *logically must* actualize.

Thus, in a *Leibnizian adaptation* of it, the above argument for logical determinism can be reformulated as follows: *Metaphysical perfection* – *Leibnizian* metaphysical perfection, comprising God as the *per se* absolutely perfect [all-knowing, almighty, all-good, all-rational, actual, personal] being and w_0 as the *per se* best of all *prima facie* possible worlds – requires that there be *just one ultima facie* logically possible world (although there are *many prima facie* logically possible worlds): w_0, the actual world, the World. Now, suppose *p* is an obtaining – i.e., actual – state of affairs; hence [since *being actual* is *being actual at the actual world*] *p* is a state of affairs that is actual – i.e., obtains – at the actual world, and therefore (*under metaphysical perfection*) at all *ultima facie* logically possible worlds (notwithstanding the fact that if *p* is different from the state of affairs that 1+1 = 2, it does *not* obtain at all *prima facie* logically possible worlds). It stands to reason that *p* is logically necessary, is *per se* necessary (*not* in itself, but qua being made actual by God – with logical necessity, with *per-se*-necessity – *via* God's making actual – with logical necessity, with *per-se*-necessity – w_0, to which *p* is intrinsic).

The objection against this *Leibnizian* argument for logical determinism (for "Every obtaining state of affairs is logically necessary") is obvious: It is rather doubtful – in fact, virtually everyone (atheist, agnostic, or theist) who is confronted with Leibnizian optimism *denies* – that metaphysical perfection, *Leibnizian* metaphysical perfection, is a ruling reality.

14 What does it mean *to know*?

Knowledge has already been touched on in Chapter 11; in this chapter *knowledge* is treated systematically. The special – salient but, each in a special way, restrictive – definitions of *knowledge* in Chapter 11 (they do not recur in the present chapter) serve further to highlight the multifariousness of the subject matter of knowledge-concepts, but mainly the present chapter bears witness to it. Nevertheless, an attempt is made to put *one* concept on the throne of *the* concept of knowledge.

In this book *knowledge* is *propositional knowledge*, and therefore the present chapter is, explicatorily, about *propositional knowledge*, leaving other forms of knowledge (knowing-*how*, knowing-*somebody*, …) unconsidered – simply in order to make the task of explication less burdensome, at least somewhat. Even though knowledge is here restricted to knowledge whose object is a *proposition*, the explicatory task at hand is, initially, a rather ambiguous one; because, prima facie and fundamentally, *knowing a proposition* can mean three different things: (i) grasping its content, (ii) knowing* its truth, (iii) grasping its content *and* knowing* its truth; (i) can be without (ii) [and, a fortiori, without (iii)], and (ii) can be without (i) [and, a fortiori, without (iii)]. This initial ambiguity of the explicatory task is resolved by deciding that this chapter is to be explicatorily about *propositional knowledge* – knowledge whose object is a *proposition* – where *knowing a proposition* is taken to consist in grasping its content *and* in knowing* its truth. (At this point, "knowing* its truth" is merely a schematic placeholder; it will soon be replaced by a phrase that does not involve the word "know".)

97. It is certainly not usual to speak of *state-of-affairs-al knowledge* ("state-of-affairs-al" being a useful artificial word parallel to "propositio*nal*"). Yet, I might also have decided that this chapter is explicatorily about *state-of-affairs-al knowledge* – knowledge whose object is a *state of affairs* – where *knowing a state of affairs* is taken to consist in grasping its content *and* in knowing* that it *obtains* [is the case, is a fact]. State-of-affairs-al knowledge is very similar to propositional knowledge: in view of the fact that any phrase of the form "that *A*" where the letter "*A*" stands for a *reality-descriptive* – that is, *either true or false* – sentence [i.e., stands for the sentence *itself*, not its name!] can not only be taken to be a name for a proposition, but can also be taken to be a name for a state of affairs, namely, for the state of affairs that corresponds ontologically to the named proposition (*via* corresponding ontologically to the equivalence-class of logically equivalent propositions that the named proposition belongs to). The difference between *state-of-affairs-al* and *propositional knowledge* is evident on the basis of the considerations that follow below.

We have two true statements:

(I) If the objects of knowledge are *state of affairs*, *then* for all reality-descriptive sentences *A*, and for all reality-descriptive sentences *B*: if *B* is logically equivalent to *A*, then, for all *x*, *x* knows that *B* if, and only if, *x* knows that *A*.

(II) If the objects of knowledge are *propositions*, *then* for some reality-descriptive sentence *A*, and for some reality-descriptive sentence *B*: *B* is logically equivalent to *A*, and, for some *x*, *x* knows that *B* but does not know that *A*, or knows that *A* but does not know that *B*.

And note that the following *special rule* of instantiation is correct even though it contains a break in the uniformity of substitution:

In (I) and (II), when producing a *sentence-quantification-free instance* of *the succedent* of either one of those statements [i.e., of the sentence after the "then" in italics in (I), respectively (II)], *omit* the quantifiers "for all reality-descriptive sentences *A*/*B*" and "for some reality-descriptive sentence *A*/*B*", and in the remainder *replace* the letter "*A*", and likewise the letter "*B*", with the quotational name of a reality-descriptive sentence, that is: with a reality-descriptive *sentence in quotation marks* in the case of "*A*", and with a reality-descriptive *sentence in quotation marks* in the case of "*B*" [usually not the same one as in the case of "*A*"] – *but not* in the contexts "… that *A* …" and "… that *B* …", where you *replace* the letters with the quoted sentences *themselves* [*not* with their quotational names]. In the case of the succedent of (I), *every* sentence-quantification-free instance of it [produced in the just-described way] is true; in the case of the succedent of (II), *some* sentence-quantification-free instance of it is true.

Now, consider, for example, the reality-descriptive sentences "7+5 = 12" and "2 is a prime number"; the two are logically equivalent – trivially so, because both sentences are logically true. Suppose *Peter* knows that 7+5 = 12; then, if the objects of knowledge are *state of affairs*, it follows – on the basis of (I), making crucial use of *instantiation* (according to the *special rule*, but also according to straightforward predicate-logical *all*-instantiation) – that Peter also knows that 2 is a prime number. *However*, it seems, contradicting this conclusion, that Peter *does not know* that 2 is a prime number: being rather young in years and just beginning to learn arithmetic, he apologetically and, no doubt, sincerely answers the question "Is 2 a prime number?" with "I don't know" (whereas he triumphantly answers "12!" to the question "How much is 7 plus 5?").

What does this example (one of many) teach us? Faced with it, one might, if one is ready to pay the price, which consists in ascribing to Peter a knowledge which Peter himself sincerely declares he doesn't have, still uphold that knowledge is *state-of-affairs-al*. However, the natural and also more reasonable reaction is, of course, *to accept* that Peter *knows* that 7+5 = 12 *but does not know* that 2 is a prime number – *although* "7+5 = 12" and "2 is a prime number" are, indeed, logically equivalent; hence to accept that knowledge is *propositional* – that the objects of knowledge are *propositions* (there is no alternative to this) – and that we have here an *instance* of the succedent of (II) [one not only sentence-quantification-free, but *wholly* quantification-free]. Only propositions are fine-grained (differentiated finely) enough to *escape* – not always but *sometimes* – the net of logical equivalence with which the subjects of knowledge capture *further* items they *also* know along with the items they *already* know. That such *escapes* – *lapses*, considered from the point of view of the

knowledge-subjects – really do occur cannot be denied: it cannot well be argued that the subjects "really do know" what they themselves sincerely claim they do not know. With this in mind, one must conclude that taking *knowledge* to be *propositional knowledge* is rather nearer to the reality of knowing than taking *knowledge* to be *state-of-affairs-al knowledge*.

In this chapter, I am not seeking to describe what this or that person or group of persons of the present or past in actual fact mean when they use the word "know" – as applied to a *proposition*, since in this chapter, as has already been decided, knowledge is taken to be *propositional* knowledge. My aim is the "ambitious" aim of determining what we, human beings (whether of the present or past – *or future*), *ought (rationally) to mean* when we use that word; in other words, I am looking for the *true* (the *right*) concept of knowledge.

Some philosophers will declare the quest for the *true* concept of knowledge – just like the quest for the *true* concept of objective justness (cf. Chapter 9) – to be even more nonsensical (though far less heroical) than the quest for the Holy Grail. For, doubtless (it must be admitted), the semantic connection between a certain concept and the word "know" – i.e., the fact that "know" expresses *this* concept, that it has *this* concept as its meaning – is *purely conventional* and hence in a clear and relevant sense *perfectly arbitrary*; doubtless, there is no substantial – essential, inner, or even just natural – semantic connection between any sequence of these four letters – "k", "n", "o", "w" – and any concept whatsoever. What else, then, *those philosophers rhetorically ask*, could it mean that a concept is *the* concept of *knowledge* than that it is de facto expressed by "know" (or by the corresponding word in languages other than English) *once* the univocality of "know" in the community of speakers has been established (by whatever means, perhaps by social pressure)? And, *they urge*, is it not admitted on all sides that this distinction, this eminence of *one* concept is, its eminence notwithstanding, utterly contingent and in a clear and relevant sense *perfectly arbitrary*? *The true* concept of knowledge would, indeed, be *the* concept that ought (rationally) to be expressed by "know", that ought (rationally) to be the meaning of "know"; but – *they argue* – the perfect arbitrariness of the semantic connection between the word and its meaning – whatever the meaning is – makes it impossible that such a concept exists (qua uniquely determined); there may, admittedly, be certain rational restrictions for the choice to be made (having to do with the *de-facto*-role of "know" in the English language, say), but it still remains a *choice*: every candidate that remains after the restrictions have taken effect is *as*

good (rationally) as any other remaining candidate – and there certainly will be *more than one* remaining candidate.

In response, let me point out that a concept can be *the* concept of *knowledge* and the *true* concept of knowledge *even if* it is not expressed by the word "know" – *even if* there were no language at all in which to express it. The true concept of knowledge is, in itself, entirely independent from words (like a rose and its smell; cf. Chapter 9) – though, in order to discuss it and to transmit insights about it to others, one must, of course, use words. Note also that in the *pure* conceptual sphere – without the distorting influence of the lens of language – *the true* concept of knowledge is identical with *the* concept of knowledge. The trouble, however, is that the pure conceptual sphere is only with great difficulty accessible to us in its language-free purity: because we inescapably belong to the species *homo utens lingua*. Thus, in following various enticements strewn by language (language being such as it happens to be, surrounding us on all sides), we are confronted with a plurality of candidate-concepts for the role of being *the* concept of knowledge, and with a seemingly indissoluble controversy as to which one of these is *the true* concept of knowledge (*normally*, *the true* concept of knowledge is what one is really looking for in a "quest for *the* concept of knowledge"). Even in these unfavorable circumstances, the question of which concept is *the* concept of knowledge *may* be decided *accidentally* (that is, in a way *normally* not really wanted), whether the invoked *accidentality* is a historically grown one or one *ad hoc* produced; *whereas* it seems that the question of which concept is *the true* concept of knowledge cannot ever be decided (though, *normally*, it is the question one really wants to see decided).

The basic insight (mine, not necessarily also yours) is this: *to know* is *to be in the rational in-depth-possession of truth*, not of the totality of truth, of course, but of a piece of it, as captured by a proposition (remember: knowledge in this book and chapter is *propositional* knowledge). Knowing (proposition) *p* consists in being in the rational in-depth-possession of the truth of *p*. But what does it mean to be in the rational in-depth-possession of the truth of *p*? It has already been decided in this chapter that knowing a proposition consists in grasping its content *and* in knowing* its truth. Thus, knowing *p* – i.e., being in the rational in-depth-possession of the truth of *p* – certainly comprises grasping the content of *p*. But this, of course, is not all there is to knowing, though *sometimes* it is: *Sometimes* – that is, for *some p*: for the *in itself analytically true p* (consider, for example, the proposition that nothing is older

than itself) – already the content of *p* determines, *entirely in itself*, the truth of *p*, and hence grasping the content of *p* means ipso facto also to grasp the truth of *p*, and *the grasping of the truth of p* need not be mentioned *in addition* to the grasping of the content of *p* – as, normally, it must be, according to *the primordial definition* of "knows *p*", which results when "grasps the truth of *p*" replaces "knows* the truth of *p*" [which is a mere placeholder] in "*x* knows *p if, and only if* [definitionally], *x* grasps the content of *p and x* knows* the truth of *p*".

S*ometimes* grasping the content of a proposition is perfectly sufficient for knowing it [the medieval philosopher-theologians called such a proposition "per se notum"], but certainly not always. Knowing *p* – being in the rational in-depth-possession of the truth of *p* – always [according to *the primordial definition*] consists in grasping the content of *p and* in grasping its truth [the second conjunct having replaced the provisional "in knowing* its truth"], and *normally* – while *in itself analytically true* propositions are exceptions to the normal – the latter grasping is not already part and parcel of the former. The obvious question is this: What does it mean for a true but *not* in itself analytically true proposition that a knower, a subject of knowledge, besides grasping the proposition's content, also *grasps its truth*? This question proves to be *recalcitrant*.

98. In note **34** (in Chapter 7) there can be found the following definition: "*Per-se*-necessity consists in this: a state of affairs, or a proposition, no matter whether the state of affairs is *stated* in language or not, whether the proposition is *expressed* in language or not, whether state of affairs or proposition is an object of thought or not, *already in virtue of itself* [no need of anything outside of it] possesses actuality [if we are dealing with a state of affairs], respectively truth [if we are dealing with a proposition], *or* possesses actuality, respectively truth, *already in virtue of another state-of-affairs, respectively proposition,* [no need of anything else] *that already in virtue of itself possesses actuality, respectively truth*." In analogy to this definition, I here offer the following definition of a concept that is very closely related to *per-se*-necessity: "*Per-se*-truth consists in this: a proposition *already in virtue of itself* possesses truth, *or* possesses truth *already in virtue of another proposition that already in virtue of itself possesses truth*." Moreover, for reasons stated in the just-mentioned earlier note [note **34**], using "per se necessary" is a better way than using "logically/analytically necessary" to express the (in this book, by the author) *intended* concept (still, in this book, the latter way of expression is preferred, due to its *usualness*). And, note, using "per se true [or: true per se]" is, for *perfectly analogous* reasons, a better way than using "analytically/logically true" to express the (in this book, by the author) *intended* concept (nevertheless, in this book, the latter way of expression is preferred, due to *its usualness*). Note, finally, that the just-presented definition of *per-se*-truth – in other (more familiar) words: analytical/logical truth – allows to differentiate between *per-se*-truth simpliciter and *intrinsic per-se*-truth, i.e., to differentiate semantically between "per se[/analytically/logically] true" and "*in itself* per se[/analytically/logically] true"; *just* as the definition of

per-se-necessity – in other (more familiar) words: logical/analytical necessity – allows to differentiate between *per-se*-necessity simpliciter and *intrinsic per-se*-necessity, i.e., to differentiate semantically between "per se[/logically/analytically] necessary" and "*in itself* per se[/logically/analytically] necessary" [the latter entails the former, of course, but not also the former the latter]. These differentiations have their applications: It is not *in itself* per se true, and not *in itself* per se necessary, that there are infinitely many prime numbers, though it is indeed [simpliciter] per se true and per se necessary that there are infinitely many prime numbers. Kant thought that the proposition that 7+5 = 12 is *not* analytically true, and was led by this to believe that it is a "synthetic truth a priori". Now, arguably, that proposition is not *already in virtue of itself true* [or: *in the possession of truth*], hence not *in itself* analytically true, not *in itself* per se true; but, *pace* Kant, it is indeed [simpliciter] analytically true: true per se; because it is, if not already in virtue of itself true, at least *true already in virtue of another proposition that already in virtue of itself is true*, namely, the proposition which is expressed by the conjunction of the Peano Axioms.

It is well to insist on the word "grasp" here, since, (a), "grasp" fits the basic insight – i.e., to know is to be in the rational in-depth-*possession* of truth – and, (b), underlines – especially vis-à-vis its *almost*-synonyms: "understand", "comprehend" – that *knowing* is, in its nature, an *active* affair.

99. The words "understand" and "comprehend" are only *almost*-synonyms, not *synonyms*, of "grasp", since the meaning of "grasp" has the aspect of *action*, which aspect the meaning of "understand"/"comprehend" lacks, or at least does not possess as strongly. This does not mean that every instance of *understanding* and *comprehending* is bound to be *predominantly passive*; no, an instance of them – many of them – may be *predominantly active*. The point is that instances of *understanding* and *comprehending needn't* be predominantly active; in contrast, every instance of *grasping* is *bound to* be *predominantly active*. (Quite unaffected by these subtle differences, it is true that grasping *logically implies* understanding and comprehending; but let it be put on record that neither understanding nor comprehending logically implies grasping.)

At the same time, grasping the truth of a proposition must not be confused with grasping *why* that proposition is true: grasping *why* it is true necessarily includes grasping its truth, *but not vice versa*. Those who know a proposition – who are in the rational in-depth-possession of its truth – need not know/grasp *why* it is true; they only need to know/grasp its truth (besides grasping its content). What, *in general* (not only in the very special case of in itself analytically true propositions), does it mean to *grasp* the truth of a proposition?

Grasping the truth of a proposition logically entails its truth, but it does, of course, not mean that the "grasper" by grasping the truth of the proposition makes it true. There is, *nor-*

mally, an element in grasping the truth of a proposition – namely, in grasping its truth *in genuine addition* to grasping its content – over which the subject of knowledge has no control, namely: that the proposition in question is indeed *true*. On the other hand, there is always an element in grasping the truth of a proposition over which the subject of knowledge *does* have control, namely: that the subject *actively rationally** [in a sense still to be specified] holds the conviction that the proposition in question is true. We can, therefore, enunciate the following meaning-explanation (explicative definition):

Definition of (propositional) knowledge (for human subjects of knowledge)
Let *x* be a human subject of knowledge, *p* a proposition:
x knows *p* $=_{Def}$ (i) *x* grasps the content of *p*, *and* (ii) *p* is true and *x* holds the conviction that *p* is true, actively rationally* – i.e. [concerning (ii) in its entirety], *x grasps* ["knows*"] the truth of *p*.

The first query concerning this definition is this: Doesn't its *definiens* need to be strengthened? Since knowledge is a *rational* affair, should not *knowing p* – that is: grasping the content of *p*, *and* grasping the truth of *p* – logically entail *knowing all the logical consequences of p*, i.e., grasping the content of each of these consequences, *and* grasping the truth of every one of them? Therefore, should not the given *definiens* of knowledge be strengthened – in the obvious way – so as to fulfill the just-described, apparently rational demand for a sweepingly comprehensive logical entailment? – No, it should not, because fulfilling that demand is bound to impose a too heavy burden on *human* rationality, since every proposition has *infinitely many* logical consequences. In fact, the principle "If *p* is known, then every logical consequence of *p* is known" serves to demonstrate the very nonexistence of actual human knowledge, as follows:

Every proposition logically implies, trivially, *every* logically true proposition. Thus, with the principle "If [proposition] *p* is known, then every logical consequence of *p* is known" we have: If *x* knows *p*, then *x* knows every logically true proposition, in other words: then *x* is logically omniscient. But no actual human being is logically omniscient (even the best logicians are not). Therefore, no actual human being knows *p* – whichever proposition *p* may be.

There remains, of course, an "awful lot" still to be said about the above-presented definition of knowledge. One rather important thing to be said is this: In the word "actively" in the

definition – but without necessarily exhausting the meaning of "actively" in the definition – there are to be taken to be *implicit per se*: "not passively", "not automatically", "with initiative occurrently in consciousness", "alertly", "without blind reliance", "with a critical spirit", and "with an interest in proper relevance and objectivity". Admittedly, these seven postulated *per-se*-implicata of "actively" in the definition are, though certainly appropriate, *vague*; they ought to be made precise (or at least made less vague; for some elucidation of "occurrently in consciousness", see Chapter 11). Yet, I now turn to saying what is *furthermore* of great importance: it concerns the central issue connected with the above-presented definition of knowledge.

There is a maximalist and a minimalist interpretation of "rationally*" *in the context* of that definition (and, of course, there seem to be viable interpretations *between* these two extremes, but it also seems too difficult to get a firm conceptual grip on these; the interpretation which conceptually equates "rationally*" with "scientifically" is no exception). *The minimalist interpretation* is the "(almost) anything goes"-interpretation: according to it, "rationally*" is to be replaced in that definition by "content-consistently with all the convictions of *x*", thus *complementing* all the other elements of rationality in that definition: those given by (i) and by the word "actively" in (ii).

100. The result of the replacement is this: *x* knows *p* $=_{Def}$ (i) *x* grasps the content of *p*, *and* (ii) *p* is true and *x* holds the conviction that *p* is true, actively *content-consistently with all the convictions of x*.

Three explanatory comments:

(1) For the variable "*p*" in the definition, singular terms that name propositions can be meaningfully substituted (usually, but not always, the substitution takes place when *closed* sentences – "sentences [simpliciter]" in the normal sense [*normal* also in this book], i.e., sentence-like expressions *without* free variables – are formed, within the definition, from the predicates / *open* sentences in it); but sentences, whether open or closed, and names of sentences cannot be meaningfully substituted for "*p*" in the definition. The main way of producing a singular term that names a proposition is to put a reality-descriptive sentence in the lacuna in "that _". Thus, the singular proposition-naming term "that Rome is a city" is produced by putting the *closed* sentence "Rome is a city" in the lacuna, and the singular proposition-naming term "that *p* is true" is produced by putting the *open* sentence "*p* is true" in the lacuna. ("Rome is a city" is a reality-descriptive – i.e., either true or false – closed sentence; the open sentence "*p* is true" is reality-descriptive in the following sense: "*p* is true" is either true or false whichever proposition the variable "*p*" is taken to represent – which sentence [the sentence after the colon] is true, just as it is true that all propositions are, qua propositions, either true or false.)

(2) The conviction that *p* is true is the conviction whose content it is *that p is true*, in other words: whose content is *p*, since the proposition *that p is true* is the same as the proposition *p* itself, and "*p*" and "*that p is*

true" are *salva significatione* – not only *salva veritate* – substitutable for each other in every linguistic context that is not *meta*-linguistic. *But here is a problem:* "Peter has the conviction that *p* is true" is well-formed, whereas "Peter has the conviction *p*" does not seem to be well-formed or, if it *is* well-formed, to have a different meaning than "Peter has the conviction that *p* is true". Moreover, "Peter is convinced that *p* is true" is well-formed, whereas "Peter is convinced *p*" certainly seems not to be well-formed, let alone to have the same meaning as "Peter is convinced that *p* is true". *The solution to this problem*: Note, first, that if "*p*" is replaced – as is legitimate – by a proposition-naming "that"-phrase: *that A*, then there is, (a), nothing grammatically wrong with "Peter has the conviction *that A*", and it certainly has the same meaning as "Peter has the conviction that *that A* is true"; and then there is, (b), nothing grammatically wrong with "Peter is convinced *that A*", which certainly has the same meaning as "Peter is convinced that *that A* is true". The problem is completely solved by considering that "Peter has the conviction that *p* is true" is elliptical for "Peter has the conviction *of the proposition* that *p* is true", and "Peter is convinced that *p* is true" is elliptical for "Peter is convinced *of the proposition* that *p* is true"; replacing "that *p* is true" by "*p*" in the *non-elliptical* sentences – only they are ultimately grammatically accountable – produces no meaning-change or loss of well-formedness.

(3) Let c_1, …, c_n be the convictions of *x* (at a time *t*); let the propositions p_1, …, p_n be the contents of those convictions; c_i ($1 \leq i \leq n$) is content-consistent with c_1, …, c_n if, and only if, p_i [or: *that* p_i *is true*] is consistent with p_1, …, p_n, in other words: … if, and only if, it is logically possible that p_1, …, p_n (p_i among them) are true together.

The maximalist interpretation, in contrast, is highly restrictive: according to it, "rationally*" is to be replaced in the definition in question by "content-consistently with all the convictions of *x* and in such a manner that the very fact of *x*'s being convinced as *x* is in fact in total convinced logically necessitates that *p* is true", thus *complementing* all the other elements of rationality in that definition: those given by (i) and by the word "actively" in (ii).

101. The result of the replacement is this: *x* knows *p* $=_{Def}$ (i) *x* grasps the content of *p*, *and* (ii) *p* is true and *x* holds the conviction that *p* is true, actively *content-consistently with all the convictions of x and in such a manner that the very fact of x's being convinced as x is in fact in total convinced logically necessitates that p is true.*

Three further explanatory comments:

(1) Let c_1, …, c_n be the convictions of *x* (at a time *t*); let the propositions p_1, …, p_n be the contents of those convictions; the very fact of *x*'s being convinced as *x* is in fact in total convinced logically necessitates that *p* is true if, and only if, it is logically impossible: *x* is convinced that p_1 is true and … and *x* is convinced that p_n is true and *p* is not true.

(2) If *x* knows *p*, then the conviction *that p is true* is among the convictions of *x* (at the relevant time *t*) and thus contributes to how [in content and form] *x* is in fact in total convinced (at *t*), and the proposition *that p is true* – or in other words: *p* – is its content.

(3) Given the maximalist interpretation of "rationally*" in the above-presented definition, the clause "*p* is true" at the very beginning of (ii) is logically superfluous, since it is already logically implied by the rest of (ii).

This is so because, given that *x* holds some conviction (which *x* does, because *x* in (ii) is explicitly said to hold the conviction that *p* is true), *x* is convinced as *x* is in fact in total convinced and this, the very fact of it, according to [the relevant part of] the rest of (ii), logically necessitates that *p* is true.

The above-presented definition, even prior to any specific interpretation of it, aims to present knowledge as a *rational* affair – in line with the intentions of most philosophers, who emphatically *deny* that knowledge is simply *true belief* [i.e., *conviction of a true proposition*], *no matter* whether the belief is rational, or irrational: *In their eyes*, if a human subject *x* holds the conviction that *p* is true, and *p* is in fact true, then this – though it is indeed the very heart, *the core* of knowledge – is not already conceptually sufficient for *x's knowing* that *p* is true, i.e., for *x's knowing p*. Far from it! Nevertheless, there is a considerable advantage attached to taking knowledge to be *true belief*: If knowledge is true belief, then there is much more knowledge in the world than if knowledge is *the rational in-depth-possession of truth* – which latter, rather more demanding, idea of knowledge is spelt out by the above-presented definition [in filling out *the primordial definition*]. The *claim to rationality* raised in that definition is greatest, of course, if the word "rationally*" in it is given *the maximalist interpretation*.

Consider *Pascal* ["Pascal" is his *given name*], a devout Christian, who sincerely asserts (along with Job): "I know that my Redeemer liveth". Does Pascal *know* that his – Pascal's – Redeemer liveth? One thing at least is certain: Pascal holds the conviction – is convinced – *that Pascal's Redeemer liveth* [i.e., that *(the proposition) that Pascal's Redeemer liveth* is true] *occurrently in consciousness*. This being so, our example is a *fitting* example: because conviction, or: (firm) belief, *occurrent in consciousness*, and in consequence knowledge *occurrent in consciousness*, is what this chapter is about (all discussion in it is about *these* concepts, *not* about the corresponding *dispositional* concepts). And – who knows? – perhaps Pascal is *lucky* in this conviction of his and it is in fact true that Pascal's Redeemer liveth. Then, if knowledge were simply true belief, Pascal would indeed *know* that his Redeemer liveth. However, not only is *truth* in the case at hand not likely (not likely according to normal human standards of estimating likelihood), but *knowledge by luck* also seems quite generally out of the question: for reasons that are *not* removed if the proposition that would be the object of such knowledge *is*, in fact, *true*.

Now, with knowledge being the rational in-depth-possession of truth (which idea is accorded a preliminary explication by *the primordial definition* and which is explicated more

deeply by the definition of knowledge now being under consideration), the prospects for Pascal's knowing that his Redeemer liveth are, indeed, not good. Does Pascal *grasp the content* of (the proposition) *that Pascal's Redeemer liveth*? Probably *not*; even trained theologians do not quite grasp the content of that proposition, though they may have a far more precise idea of it than Pascal has. Does Pascal nonetheless *grasp the truth* of (the proposition) *that Pascal's Redeemer liveth*, hence – and just for the sake of the argument: let us assume *the truth* of that proposition – does he hold the conviction *that Pascal's Redeemer liveth* [i.e., the conviction that this proposition – *that Pascal's Redeemer liveth* – is true] *actively rationally**? Probably *not*: likely, the conviction just came over him some day – possibly (it happens not rarely to religiously inclined persons), in a great emotional upheaval: overwhelmingly – and is never forgotten, in fact, never quite removed from consciousness: something to be treasured, not questioned. *However*, what is (also) not unlikely, at least if Pascal happens to be a rational person, is that Pascal holds the conviction that Pascal's Redeemer liveth at least *in the minimalist sense* "rationally*", that is, holds the conviction that Pascal's Redeemer liveth *content-consistently with all his convictions,* that is: in such a manner that it is logically possible that the contents of all the convictions of Pascal's (among them, the content of the conviction that Pascal's Redeemer liveth) are true together. In sharp contrast, it is impossible that Pascal holds the conviction that Pascal's Redeemer liveth *in the maximalist sense "*rationally*"; for the proposition that Pascal's Redeemer liveth – all uncertainty about its precise content notwithstanding – is neither logically necessary nor about Pascal's inner, subjective life of consciousness, hence it cannot be that the very fact of Pascal's being convinced [occurrently in consciousness] as Pascal is in fact in total convinced [occurrently in consciousness, with his being convinced that his Redeemer liveth as part of it] logically necessitates that *that Pascal's Redeemer liveth* is true [i.e., logically necessitates *that Pascal's Redeemer liveth*].

Suppose now, Pascal is not only a devout Christian, he is also a professional mathematician and scientist with a philosophical bent (famous specimens of this rare species are known from the history of human thought, and no doubt some specimens of it are alive even today). Pascal not only claims that he knows that his Redeemer liveth, he also claims that he knows that $e^{i\pi} + 1 = 0$, and that he knows that $c = 299792458 m/s$, and, last but not least, that he knows (and is able to appreciate philosophically: epistemologically and

ontologically) that he, Pascal, exists as a conscious being. Now, not only an observer from the outside, but also Pascal himself will judge his knowledge-claims quite *inhomogeneously*:

Suppose Pascal uses the epistemological terminology and epistemological conceptual framework introduced in this chapter, and suppose his philosophical contemporaries – whether they agree with him or disagree – do the same. Then, regarding his mathematical, his scientific, and his philosophical knowledge-claim, Pascal describes *his knowing the respective proposition* – the claim's object of knowledge – as *being in the rational in-depth-possession of [the proposition's] truth*, meaning by this no more and no less than what the above-presented definition of knowledge enunciates, with "actively rationally*" left fairly vague in it. Regarding the mathematical and the scientific proposition, no one of Pascal's peers – radical skeptics aside – is likely to gainsay Pascal's assertion of knowledge, as spelt out by the definition, the remaining vagueness in it notwithstanding.

Moreover, regarding his mathematical and his philosophical knowledge-claim, Pascal even describes *his knowing the respective propositions* as *perfect knowledge*, knowledge of an epistemological quality that is not to be surpassed, meaning by "perfect knowledge" precisely what the above-presented definition of knowledge enunciates if the word "rationally*" in it is given *the maximalist interpretation*.

102. *Given* Pascal grasps the content of the propositions in question: of the proposition that $e^{i\pi} + 1 = 0$, and of the proposition that Pascal exists as a conscious being; and *given* these propositions are true; and *given* Pascal, for each of the two, holds the conviction that it is true, actively content-consistently with all the convictions of his; then the remaining crucial – but easily verifiable – point in the intended veridical application of that definition *in the maximalist interpretation* [i.e., that definition with the word "rationally*" in it having been given *the maximalist interpretation*] is, regarding the first of the two propositions, *this*: The proposition that $e^{i\pi} + 1 = 0$ – being [in the broad sense] *logically necessary* – is trivially logically necessitated by the very fact of Pascal's being convinced as Pascal is in fact in total convinced, and the proposition that *that proposition* [i.e., that $e^{i\pi} + 1 = 0$] is true (these "two" propositions being the same proposition *salva significatione*) is, of course, trivially logically necessitated by that same fact, too.

And regarding the second of the two propositions (see the beginning of the note), the remaining crucial – but again easily verifiable – point in the intended veridical application of that same definition *in the maximalist interpretation* is *this*: The proposition that Pascal exists as a conscious being, in other words: the proposition that *that proposition* [i.e., that Pascal exists as a conscious being] is true, is logically necessitated by the very fact of Pascal's being convinced as Pascal is in fact in total convinced, because that fact, for logical reasons, cannot be without *that proposition* being true, because conviction – or: [firm] belief [occurrently in consciousness] – is ipso facto a way of existing consciously.

And regarding those propositions, the mathematical one and the philosophical one, no one of his peers is likely to gainsay Pascal's assertion of [his having] *perfect knowledge* – or: *knowledge* as defined by the definition of knowledge under consideration if that definition [that is: the word "rationally*" in it] is accorded *the maximalist interpretation*. Or rather, this is how it would have been in the past, even in the not altogether long-ago past. But *nowadays* many philosophers will gainsay Pascal's claim of knowing the proposition that he, Pascal, exists as a conscious being *if* Pascal turns out to have a Cartesian, or: "dualistic", conception of the content of that proposition. If this is the case with Pascal and if it comes to their attention, many philosophers will deny that Pascal has *knowledge* qua the rational in-depth-possession of the truth of that proposition – for the reason *that*, in their eyes, he does not even *grasp* its content: *that* he is, on the contrary, perfectly mistaken about its content; for this same reason – a fortiori – those many philosophers will deny that Pascal has *perfect knowledge* of the proposition that he exists as a conscious being. According to them, *if Pascal* is a Cartesian, a psychophysical dualist, then – as a consequence of his having *that* philosophical position – he perfectly misunderstands the proposition that he exists as a conscious being.

103. According to them, the proposition that Pascal exists as a conscious being is identical with the proposition that Pascal's brain manifests certain electrochemical patterns of activity. Interestingly, even with this *materialistic* identification of propositions in place, it still remains true: the proposition that Pascal exists as a conscious being, in other words: the proposition that *that proposition* [i.e., that Pascal exists as a conscious being] is true, is logically necessitated by the very fact of Pascal's being convinced as Pascal is in fact in total convinced. *Given* that facts, propositions, and sentences are materialistically (re-)interpreted, then even for materialists it remains true: the very fact of Pascal's being convinced as Pascal is in fact in total convinced cannot, logically, be without *that proposition* [that Pascal exists as a conscious being] being true, because conviction – or: (firm) belief – is ipso facto a way of existing consciously.

Suppose Pascal *is* a psychophysical dualist. Contemporary materialists [as was supposed: they, like Pascal, use the epistemological conceptual framework and the epistemological terminology of this chapter] could still see much truth in Pascal's– for them: *false* – claim that he *knows* that he exists as a conscious being. Pascal is not wholly wrong, they could say. They might describe Pascal's epistemic situation as follows: "He *does* grasp *the truth* of the proposition that he exists as a conscious being. That is, we have [according to part (ii) of the defini-

tion of knowledge *qua* the rational in-depth-possession of truth]: the proposition *that Pascal exists as a conscious being* is true and Pascal does, no doubt, hold the conviction that the proposition *that Pascal exists as a conscious being* is true, actively rationally* (in what precise sense, remains to be determined!). What Pascal, unfortunately, *does not* grasp is *the very content* of the proposition that he exists as a conscious being. That content – its true content – is wholly within the physical. What is completely misunderstood by Pascal is that the prima facie apparent subject of the proposition – Pascal – is not its *true* subject, whereas Pascal naively thinks *it* – he – is its true subject."

I, for one, rather think that Pascal, the psychophysical dualist, is right and that he does have knowledge, indeed *perfec*t knowledge – the *perfect* rational in-depth-possession of the truth – of the proposition that he *quite correctly* takes to have Cartesian, "dualistic", content, namely, the proposition that *he*, Pascal, exists as a conscious being [which, as such a being, is not necessarily a physical being]. But be that as it may, Pascal does certainly not claim to have *perfect* knowledge of the scientific proposition: the proposition that *c* = 299792458*m/s*. What he does claim is that he *knows* that *c* = 299792458*m/s*, meaning by this that he is in the rational in-depth-possession of the truth of that proposition, a kind of possession which is spelt out in detail by the above-presented definition of knowledge – but *not* with the maximalist interpretation of "rationally*" in it, only with an interpretation of "rationally*" in it that is logically stronger, rather, than the minimalist interpretation (though still far from being as strong, and restrictive, as the maximalist interpretation). Pascal would find it very difficult to describe in what precise sense that interpretation is logically stronger than the minimalist interpretation (i.e., includes it *and* goes beyond it) but less strong than the maximalist interpretation. However, a *vague* description of the strengthening factor should be easy for him; in that vague description, the minimalist interpretation of "rationally*" [expressed by "content-consistently with all the convictions of *x*"] is fortified by having its expression followed by: ", that conviction being based, in the manner the generally accepted *scientific* methodology requires, on [empirical or a priori] evidence acknowledged in accordance with the precepts of the generally accepted *scientific* methodology".

104. The result of the replacement of "rationally*" in the above-presented definition of knowledge is this: *x* knows *p* $=_{Def}$ (i) *x* grasps the content of *p*, *and* (ii) *p* is true and *x* holds the conviction that *p* is true, actively *content-consistently with all the convictions of x, that conviction being based, in the manner that the generally*

accepted scientific methodology requires, on evidence acknowledged in accordance with the precepts of the generally accepted scientific methodology.

The big question here is, of course, this: What does *the generally accepted scientific methodology* consist in? Which is a question I will not attempt to answer. Suffice it to say that identifying knowledge with *scientific* knowledge is what many people today – though *not* Pascal – think only right and proper, the vagueness of this identification notwithstanding. And clearly, whereas the maximalist interpretation of "rationally*" in the above-presented definition of knowledge (based on the idea that knowledge is the rational in-depth-possession of truth) leads to the identification of knowledge with *perfect* knowledge, the – in the just-considered manner – *fortified* minimalist interpretation of "rationally*" in that definition leads to the identification of knowledge with *scientific* knowledge. Pascal, to be sure, is not ready to make either identification (nor am I); both of these identifications are too restrictive. And the identification of knowledge with *scientific* knowledge is dubious also on other grounds than mere over-restrictiveness: those grounds have to do with the expression "generally accepted scientific methodology" in the definition of knowledge when taken to be identical with *scientific* knowledge (for that definition, see note **104**), which expression, besides being vague, smacks of conformity enforced by social pressure – and social pressure seems not an epistemically respectable factor.

105. It should be obvious that Pascal, while rejecting the identification of knowledge with perfect knowledge, and also with scientific knowledge, can nevertheless in reason claim to have – and can have – (instances of) perfect knowledge, and (instances of) scientific knowledge. Indeed, as the epistemic situation of Pascal was described here, he claims to have, and does have, perfect knowledge (i.e., an instance of it), and does have scientific knowledge (i.e., an instance of it), and, no doubt, could (without committing "a sin against reason") also *(explicitly) claim* to have *scientific* knowledge (in addition to just having it).

Suppose, now, Pascal grasps the content of the proposition *that it visually seems to him that a bat is flying about him*, and suppose Pascal is actively content-consistently with all his convictions convinced that [the proposition] *that it visually seems to him that a bat is flying about him* is true. "*x* is convinced that [the proposition] *that it visually seems to x that A* is true" logically entails "It is true *that it visually seems to x that A*" [and vice versa]. Therefore, the very fact of Pascal's being convinced as Pascal is in fact in total convinced logically necessitates that [the proposition] *that it visually seems to him that a bat is flying about him* is true – and hence this proposition *is* true. Thus, under the initial suppositions (in this paragraph), Pascal has *perfect knowledge* of the proposition *that it visually seems to him that a bat is flying about him*. But Pascal certainly cannot be said to have perfect knowledge of the proposition *that a bat is flying about him*, even if he grasps the

content of the proposition that a bat is flying about him and is actively content-consistently with all his convictions convinced that [the proposition] *that a bat is flying about him* is true; for the very fact of Pascal's being convinced as Pascal is in fact in total convinced *does not* logically necessitate that [the proposition] *that a bat is flying about him* is true. If this proposition is not true, then Pascal does not even *know* that a bat is flying about him, though he does know – know *in perfection* – that it visually seems to him that a bat is flying about him. If, on the other hand, the proposition *that a bat is flying about him* is true and Pascal grasps the content of it (as he certainly does, since, according to supposition, he grasps the content of the *encompassing* proposition *that it visually seems to him that a bat is flying about him*), and if, moreover, Pascal is actively content-consistently with all his convictions convinced of its being true (as is very likely under the initial suppositions – *unless* Pascal believes he is in the grip of a hallucination), then Pascal *knows* that a bat is flying about him, that is: he is in the rational in-depth-possession – *in the minimalist interpretation* – of the truth of the proposition *that a bat is flying about him*.

For an additional example of Pascal's *scientific* knowledge, we will have to look elsewhere: Pascal – alone in his room, going to bed, surprised by the bat – certainly does not have *scientific* knowledge of the proposition that a bat is flying about him (though he *knows* this proposition), nor does he have *scientific* knowledge of the proposition that it visually seems to him that a bat is flying about him (though he has *perfect* knowledge of this other proposition).

Pascal (and I) can very well live with the above-presented – presented quite a few pages earlier – definition of knowledge, with "rationally*" in it being given *the minimalist interpretation*. Yet, even when accepting this identification of knowledge with very modestly conceived *rational* knowledge – indeed, in no identification of knowledge with *rational* knowledge could the intended *rationality* be more modest – it still is likely that Pascal cannot with any chance of claiming what is true make the knowledge-claim that he feels compelled to make: "I know that my Redeemer liveth." For likely, as was pointed out earlier, he does not *grasp the content* of the proposition that Pascal's Redeemer liveth, and likely, he does not *actively hold the conviction* that Pascal's Redeemer liveth – although he *does* hold this conviction, whose object (i.e., the proposition *that Pascal's Redeemer liveth*) is even true, as we have supposed just for the sake of the argument.

The remedy for this somewhat unfortunate situation – the only clear remedy (and a *clear* remedy is sought) – is obvious: *Drop* the rational aspect of knowledge; let knowledge simply be *the possession of truth* (in other words: let it be *true belief*), *not*, as heretofore, the *rational in-depth*-possession of truth. Since the element of truth-possession (i.e., true belief, or: being convinced of a true proposition) is the common element – the hub, the core – *asserted* in all of Pascal's adduced knowledge-claims, asserted manifestly *nakedly* in the, as a

true knowledge-claim, *heretofore* unacceptable "I know that my Redeemer liveth", and is *present* in all of Pascal's [or anyone else's] beliefs to know (whether avowed – asserted – or not), the stock of Pascal's knowledge would not thereby – by dropping the rational aspect of knowledge – be diminished but, on the contrary, increased (but, mind you, not necessarily by the proposition that Pascal's Redeemer liveth: for *this*, this proposition still has to be *true*, which probably [according to ordinary human standards] it isn't, though, *for the sake of the argument*, we have *supposed* it to be true; however, with the proposed conceptual change having been effected, that proposition would at least have a chance of being received into the flock of Pascal's knowledge).

At this point, it can fittingly be queried: In the epistemological regard, what more do we need than to be in the possession of truth – acting on it, relying on it in our lives? For *this*, its relevancy for life, we do not, at least not always, need to fully understand [*grasp* the content of] the true proposition which we have *as a truth in our possession* [which is the same as: being convinced of it; being convinced that it is true; holding the conviction that it is true]; quite often the possession of truth need not be *deep* for acting under its guidance, it can be quite superficial. And we do not, at least not always, need to have the true proposition in our possession *actively* as a truth; rather, having it as a truth in our possession may have been "thrust upon us", may have overwhelmed us. We do not even, at least not always, need to have it as a truth in our possession – i.e., be convinced of it – *content-consistently* with all our (respective) convictions. Pascal – devout Christian, mathematician, scientist, philosopher [like the famous man *surnamed* "Pascal"] – will, no doubt, strive to be a rational person, and therefore strive to be content-consistent in his convictions: to have convictions in such a manner that the contents of all of his convictions – that is: all the propositions which are the objects of his convictions – can *logically possibly* be true together. But, besides slips in this striving for consistency which escape Pascal's attention (even the best of logicians are not immune to this), *conceivably* the situation may arise that Pascal is not ready to give up *one*, or *both*, of two of his convictions which happen to be content-*in*consistent, but are at the same time, both of them, outstandingly important – even *dear*, even (for the time) unrescindable – to him (as important to him as is his conviction that his Redeemer liveth, which is by far more important to Pascal than his conviction that $e^{i\pi} + 1 = 0$, and his conviction that $c = 299792458 m/s$, and even his conviction that he exists as a conscious being); Pascal may prefer to stay in a doxastic limbo, hoping for more information that will

finally allow him to decide the issue (hopefully in the direction of convictions which are all true: which are all of propositions that are true).

106. The general statement "For all human beings *x* and propositions *p* and *q*: if *x* knows *p* and also knows *q*, then *x* knows *p & q* [i.e., the proposition which is the conjunction of *p* and *q*]" seems a perfectly elementary, inescapable logical principle for knowledge. However, *neither* taking knowledge to be simply the possession of truth *nor* taking it to be the *rational in-depth*-possession of truth (whether with minimalist or with maximalist contextual interpretation of the word "rationally*" in the definition of it) will, *by itself*, guarantee the truth of that statement. In order to obtain it as logically true, one needs to assume, *in addition*, the logical truth of the following general statement: "For all human beings *x* and propositions *p* and *q*: if *x* is convinced that *p* is true and also convinced that *q* is true, then *x* is convinced that *p & q* is true". But should we assume the logical truth of this statement? If it is logically true, then this will make it *somewhat* easier to be content-consistent in our convictions: somewhat easier to avoid *accidental, unwanted* content-inconsistencies, since any content-inconsistency in our convictions will be compactly presented to us as our conviction of an *in-itself-inconsistent, logically impossible* proposition (*but*, of course, also a compact in-itself-inconsistency must first be noticed before we can do something about it, namely, avoid it). And if it is *not* logically true, then this will make it easier to live with a *tolerated, hence not absolutely rejected* content-inconsistency in our convictions, since we are not forced to have the inconsistency represented to us as our conviction of an *in-itself-inconsistent, logically impossible* proposition.

Against the logical truth of "For all human beings *x* and propositions *p* and *q*: if *x* is convinced that *p* is true and also convinced that *q* is true, then *x* is convinced that *p & q* is true" it can be held that, even if a given plurality of convictions that a human being has (at a time) is finite, the conjunction of all the propositions that are the objects of those convictions may easily be too big for a human being to be convinced of it. Yet, even if the general statement itself is *not* logically true, there still will be countless particular instances of it that are logically true – indeed, logically true in such a manner that the proposition *that N. is convinced of p* [i.e., convinced that *p* is true] *and convinced of q* [i.e., convinced that *q* is true] cannot be distinguished from *the proposition that N. is convinced of p & q* [i.e., convinced that *p* & *q* is true] and the "two" propositions of conviction are [not only logically equivalent but] properly identical. [Note that the converse of "For all human beings *x* and propositions *p* and *q*: if *x* is convinced that *p* is true and also convinced that *q* is true, then *x* is convinced that *p & q* is true" – which is: "For all human beings *x* and propositions *p* and *q*: if *x* is convinced that *p & q* is true, then *x* is convinced that *p* is true and also convinced that *q* is true" – seems perfectly unproblematic as a logical truth.]

Conceiving of knowledge as *knowledge* being simply *the possession of truth* is *not* indefensible (skepticism – the attempt to establish "There is no knowledge" – will have a very hard time if knowledge is just the possession of truth!). And it *can* seem that what the prefix "rational in-depth-" alludes to in "the *rational in-depth*-possession of truth" is a mere a garnish superadded to what, after all, matters alone for *knowing*, for *having knowledge*: *the*

possession of truth. However, the main objection against *the simple conception* is that it does not exclude the possibility of being right *by irrelevant – perhaps absurdly irrelevant – procedure*. A person who knows proposition *p* should be right about (the truth of) *p* – but *not by irrelevant procedure!* Yet, what are we to say about the person who threw a coin in order to decide whether to be convinced of proposition *p* or be convinced of proposition non-*p*, and the result of the coin-throw told her to be convinced of *p*, which she – in her superstitious mind – felt compelled to do with all her heart (after all, the result of the coin-throw was a message from "the other world"). And she henceforth completely relied in her actions on that conviction [i.e., on its truth: the truth of its object: the truth of proposition *p*] which she had arrived at in the described, perfectly outrageous manner. And, lo and behold, *truth* is being told *by this absurdly irrelevant procedure*: proposition *p* is true – perhaps contrary to the claim by a competent scientist of having *scientific* knowledge of non-*p*. – What are we to say?

We ought to say about this person that she is *lucky* to see the proposition she is convinced of, turn out to be true [or, to put it otherwise, elliptically: to see her conviction turn out to be true]. No doubt, she is convinced of a truth, she is in the possession of the truth of proposition *p*. But does this already mean that she *knows p*? – No. But a price for this decision (it remains a *decision*) may have to be paid *elsewhere*, namely: that, *likely* [two *likely* thwarting factors have been pointed out earlier], Pascal must be contradicted (when an occasion proper for this arises) and must be told: "No, you do not, after all, *know* that your Redeemer liveth." And "the naysayer" may continue: "It may very well be that your conviction that your Redeemer liveth is correct, that it is even content-consistent with all your convictions, and that you came by this conviction in a way that is not to be called 'clearly irrelevant'. But for *knowing*, for being in the rational in-depth-possession of truth here, this is not enough, even under minimal requirements for *knowing*. And you lack what would be enough."

Concerning the meaning of the word "know" and the meaning of its grammatical derivatives ("knowing", "knowledge"), in view of the many *apparently conceptually diverse* claims of knowledge *actually made*, including the – for most philosophers – "deviant" ones made by religious believers, soothsayers, prophets, and by those who obey the authority of dictatorial power, there are the following possible stances:

(I) The word "know" [applied to propositions; describing occurrences, not dispositions] is to be accepted as *univocal*: in *all* knowledge-claims, "know" is to have the same meaning. – If one adopts this stance, then it cannot be denied that the *one* meaning "know *p*" has everywhere is the meaning of "am/are/is convinced of *p*, and *p* is true"; for, in consideration of the utter diversity of knowledge-claims, *true belief* is what *knowledge* must boil down to under univocality: it cannot, then, be a logically stronger [more contentful] concept than *true belief* (and, anyhow, it couldn't be a logically weaker [less contentful] concept). Then Pascal's knowledge-claim "I know that my Redeemer liveth" and all other supposedly "deviant" knowledge-claims *are*, after all, *perfectly normal* knowledge-claims, and often *true* (but *false* if the proposition they are about is not true, or if their subject – the one who claims to know – does not really have the relevant conviction). Given the univocal meaning of "know" in all knowledge-claims, a *genus* – knowledge – is established, by way of the univocal meaning of that word, of which genus there are many *species*: *perfect* knowledge, *scientific* knowledge, *evidentially justified* knowledge (for this latter kind of knowledge, see Chapter 11), …, *rational* knowledge [its definition, presented as the definition of knowledge *tout court*, can be found above; it is *the minimalist interpretation* of the word "rationally*" in this definition that should now be chosen, because *the maximalist interpretation* yields the definition of *perfect* knowledge]; and, indeed, *non-rational* knowledge, *irrational* knowledge, *preternatural* knowledge (the definitions of these latter species of knowledge are easily imaginable; *note* that it is not here required of species of a genus that they, qua species, logically exclude each other). With logical necessity, every instance of each one of these species is an instance of the genus *knowledge*, but there is none of these species such that every instance of *knowledge* is an instance of it. And every one of those species is non-empty *in reality* (i.e., has *real* instances) – except, perhaps, the species of *preternatural* knowledge. [In some knowledge-claims, the human subject of knowledge claims to have preternatural knowledge – via imperative intuitions, via inner visions and/or inner voices, or via observing mantic rituals. If the core of such a knowledge-claim – namely, the claim to be convinced of a certain proposition that is true – turns out to be true, as not infrequently happens, then this, of course, does not establish that the subject in fact has preternatural knowledge of that – true – proposition.]

(II) The word "know" is to be accepted as *not univocal*: there are knowledge-claims in which "know" is to have another meaning than in other knowledge-claims. – This stance can be

realized in many ways. In all of these ways, it induces a *plurality* of meanings of "know" [the word taken by itself, unmodified: *simpliciter*], but the plurality can be made greater or smaller. Minimally, the plurality consists of two concepts, but it need not consist just of two concepts: say, *every* item that is a *species of (univocally conceived) knowledge* according to stance (I) could in principle *determine* a meaning of (plurivocal) "know" according to stance (II). If this is taken to be semantic fact, then what is according to stance (I) the species of *perfect* knowledge determines what is a certain meaning of "know" according to stance (II); and what is according to stance (I) the species of *scientific* knowledge determines what is a certain *other* meaning of "know" according to stance (II); and what is according to stance (I) the species of *evidentially justified* knowledge (see Chapter 11) determines what is *yet another* meaning of "know" according to stance (II); and the list can be continued.

One way to have a plurality of meanings of "know", and perhaps a very satisfactory way, is to let *one* meaning of "know" be *the rational in-depth-possession of truth* in the minimalist interpretation [which interpretation is made fully explicit by replacing the word "rationally*" with "content-consistently with all the convictions of *x*" in the definition of "know" as the *rational* in-depth-possession of truth]; that is, to let "know" mean the concept that "know", after all, has been supposed to mean in this chapter, intending that concept as the *true* concept of knowledge, with *perfect* and *scientific* knowledge being *species* of the *genus* thus specified. *And* to let *another* meaning of "know" be *the possession of truth*: "true belief", the conviction of what is true.

Yet, no matter *how, in what way*, we have a plurality of meanings of "know", if the plurality is not an arbitrarily concocted set (which it certainly isn't if our basis for meaning-explanation exclusively comprises *actual* applications of the word), then the intriguing thing is that the use of "know", while being not univocal, is never *equivocal*; for all the meanings are *in analogy* to one another. The hub of this pervasive analogy of meanings is *the possession of truth*, "true belief", *the conviction of what is true*; indeed, *this* is part and parcel of every *eligible* possible meaning of "know". And this rather strongly suggests that the *true* concept of knowledge is, in the *ultimate* determination, simply *the possession of truth*: that the possession of truth is what "know" *ought rationally to mean (univocally)* – and that all the rest of knowledge-conceptualization is specialization via adding various *differentiae specificae* to the *one*, comparatively simple concept.

107. Some philosophers (seeking, no doubt, to be ontologically economical by getting rid of needing to refer to "inner states") hold that a sentence of the form "I know *that A*" is simply an emphatic way of asserting "*A*", where for "*A*" can be substituted any descriptive – hence at least in the situation of utterance *reality*-descriptive: either true or false – sentence (the sentence itself, *not* its quotational name!). Thus, "I know that my Redeemer liveth" is, according to them, simply an emphatic way of asserting "My Redeemer liveth" (this latter sentence being taken to be reality-descriptive – either true or false – at least *in the situation of utterance*, where the indexical expression "I" acquires a reference and its grammatical derivatives – "my", "me" – become referential). They conclude that prefixing "I know that" to a descriptive sentence does not add *descriptive* content to it, *does not* turn it into a sentence that is in part *psychological par excellence*, namely, by being descriptive of a *state of consciousness* – a state of consciousness, to boot, that has a *proposition* as its intentional object (and propositions, too, they deem to be ontologically problematic, not only states of consciousness).

The opinion of those philosophers is due to a confusion. *The [descriptive] meaning* of a descriptive sentence is one thing, and *the subjective assertability-condition* for it is another thing; the two must not be confused: must not be taken to be one and the same thing. Thus, in a situation of utterance with Pascal as utterer, the meaning of "I know that *c* = 299792458*m/s*" – which is the proposition *that Pascal knows that c = 299792458m/s* – is different from the meaning of "*c* = 299792458*m/s*" – which is the proposition *that c = 299792458m/s*; and the subjective assertability-condition of "I know that *c* = 299792458*m/s*" – which is the proposition *that Pascal is convinced that he knows that c = 299792458m/s* – is different from the subjective assertability-condition of "*c* = 299792458*m/s"* – which is the proposition *that Pascal is convinced that c = 299792458m/s*; and the mentioned propositions are *four different propositions*. This is perfectly clear as long as "know *p*" means *more* than "am/are/is convinced of *p*, and *p* is true" in any of the ways that have been considered in this chapter. Yet, if "know *p*" means *no more* (and of course also *no less*) than "am/are/is convinced of *p*, and *p* is true", then it is no longer perfectly clear; for *then* the proposition *that Pascal is convinced that he knows that c = 299792458m/s* is logically equivalent to the proposition *that Pascal is convinced that c = 299792458m/s*, and why not consider them to be even the very same proposition? [Logical equivalence of propositions *p* and *q* does certainly not always mean *that p and q are the same proposition* – there are many counterexamples – but in some individual cases it may mean just *that*.] Now, if one considers them (the propositions just mentioned) to be the same proposition, then "I know that *c* = 299792458*m/s*" and "*c* = 299792458*m/s*" have the same subjective assertability-condition, in the situation of utterance under consideration, and therefore, *via* identifying *meaning* and *subjective assertability-condition*, "I know that *c* = 299792458*m/s*" and "*c* = 299792458*m/s*" turn out to have the same *meaning*, in the situation of utterance under consideration.

But meaning and subjective assertability-condition must not be identified, that is: they must not be identified *simpliciter*, for there are, of course, *exceptions*: the sentence-pair "I am convinced that I am in pain" and "I am in pain" is a paradigm for the *exceptions*; just as is, rather more famously, "I know that I am in pain" and "I am in pain", if "know *p*" means no more than "am/are/is convinced of *p*, and *p* is true". But, leaving the exceptions aside, consider: "It rains" and "*I am convinced* that it rains" (or any other two descriptive sentences that are paired in precisely this manner, the first sentence being about some physical state of affairs) have different meanings, in any situation of utterance with *N.* being the utterer in it, although they *do* have the same subjec-

tive assertability-condition there: *that N. is convinced that it rains* is the subjective assertability-condition of "It rains" and *that N. is convinced that N. is convinced that it rains* is the subjective assertability-condition of "I am convinced that it rains" (in any situation of utterance with *N.* being the utterer in it) – and the "two" propositions are one and the same proposition (for *N.'s conviction of N.'s conviction simply is N.'s conviction*), hence the same subjective assertability-condition. Therefore, clearly, meaning and subjective-assertability-condition cannot be identified *simpliciter* (otherwise, "It rains" *and* "I am convince that it rains" *would have the same meaning*, along with their having the same subjective assertability-condition, *in any situation of utterance with N. being the utterer in it* – which is obviously *not* the case).

[The false identification of meaning and subjective assertability-condition leads to misinterpreting "It rains but I am not convinced of it" as a *logical* contradiction. It is *not* a logical contradiction: in order to be a logical contradiction, it would have to have, whenever it is uttered, a self-contradictory *meaning* – which it doesn't have when uttered (for the meaning, then, is *that it rains and N. [the utterer] is not convinced that it rains*, which is not self-contradictory). "It rains but I am not convinced of it" is merely *impossible to assert*: it cannot be uttered as an *assertion* (though, of course, it can be *uttered* – very easily). For, whenever it is being uttered (*N.* being the utterer), its subjective assertability-condition – *not* its meaning – is self-contradictory: The subjective assertability-condition of "It rains but I am not convinced of it" is this: *that N. is convinced of the following: that it rains and N. is not convinced that it rains*, which is logically equivalent to this: *that: (a) N. is convinced that it rains and (b) N. is convinced that N. is not convinced that it rains*, which, in turn, is logically equivalent to this: *that: (a) N. is convinced that it rains and (b) N. is not convinced that it rains* (for *N.'s conviction of N.'s non-conviction is logically equivalent to N.'s non-conviction*).]

108. *Tying up loose ends (left in note* **107***):*

(A) Why is the proposition *that Pascal is convinced that he knows that c = 299792458m/s* logically equivalent – and can even be taken to be identical – to the proposition *that Pascal is convinced that c = 299792458m/s*, *if* "know *p*" means *no more* than "am/are/is convinced of *p*, and *p* is true"?

Let "$C_P B$" stand for "Pascal is convinced that *B*"; let "$K_P A$" stand for "Pascal knows that *A*"; let "σ" be an abbreviation (not a name!) of the sentence "*c* = 299792458*m/s*"; let "$\leftrightarrow$" symbolize the logical equivalence *of propositions*; let "$\wedge$" symbolize "and" [between sentences; note that both "K_P" and "C_P" bind syntactically more strongly than "and"]. We have: that $C_P K_P \sigma \leftrightarrow$ that $C_P(C_P \sigma \wedge \sigma) \leftrightarrow$ that $(C_P C_P \sigma \wedge C_P \sigma) \leftrightarrow$ that $C_P \sigma$, and therefore [due to the transitivity of logical equivalence]: that $C_P K_P \sigma \leftrightarrow$ that $C_P \sigma$, and there is no objection against: that $C_P K_P \sigma$ = that $C_P \sigma$ (due to the fact that the three invoked logical equivalences can be taken to amount to identities).

The first logical equivalence [in the chain of three logical equivalences preceding "and therefore"] is obtained by substituting for "$K_P \sigma$" in "$C_P K_P \sigma$" a logical equivalent of the *definiens* that "$K_P \sigma$" has if "know *p*" means *no more* [and *no less*] than "am/are/is convinced of *p*, and *p* is true". Given *this* definition of knowledge, "$K_P \sigma$" means the same as "Pascal is convinced [of the proposition] that σ, and [the proposition] that σ is true", in other words: the same as "$C_P \sigma \wedge$ it is true that σ", which sentence is logically equivalent to the sentence "$C_P \sigma \wedge$

σ" – which is the sentence that is substituted for "$K_P\sigma$" in "$C_PK_P\sigma$". Since the result of this substitution, "$C_P(C_P\sigma \wedge \sigma)$", is logically equivalent to "$C_PK_P\sigma$", it follows (for the corresponding propositions): that $C_PK_P\sigma \leftrightarrow$ that $C_P(C_P\sigma \wedge \sigma)$. Here, there can be no doubt that "$C_PK_P\sigma$" and "$C_P(C_P\sigma \wedge \sigma)$" say (i.e., mean) *the same*; thus, the propositions *that* $C_PK_P\sigma$ and *that* $C_P(C_P\sigma \wedge \sigma)$ are not only logically equivalent, they are also identical.

The second logical equivalence is a logical consequence of the logically true sentence "$C_P(C_P\sigma \wedge \sigma)$ iff $(C_PC_P\sigma \wedge C_P\sigma)$"; because this sentence is logically true, the sentences "$C_P(C_P\sigma \wedge \sigma)$" and "$(C_PC_P\sigma \wedge C_P\sigma)$" are logically equivalent; and therefore we have for the corresponding propositions: that $C_P(C_P\sigma \wedge \sigma) \leftrightarrow$ that $(C_PC_P\sigma \wedge C_P\sigma)$. And in the case of this particular logical equivalence of propositions, as in the case of the one just considered, there is nothing to be said against letting it be *identity*.

The third logical equivalence is a logical consequence of the logically true sentence "if $C_P\sigma$, then $C_PC_P\sigma$". Because this sentence is logically true, also "$(C_PC_P\sigma \wedge C_P\sigma)$ iff $C_P\sigma$" is logically true; and therefore the sentences "$(C_PC_P\sigma \wedge C_P\sigma)$" and "$C_P\sigma$" are logically equivalent, and we have for the corresponding propositions: that $(C_PC_P\sigma \wedge C_P\sigma) \leftrightarrow$ that $C_P\sigma$. And also in the case of this third particular logical equivalence of propositions, there is nothing to be said against letting it be *identity*.

(B) Why do "I know that I am in pain" and "I am in pain" have the same subjective assertability-condition – which, at the same time, is their identical meaning – *if* "know *p*" means *no more* than "am/are/is convinced of *p*, and *p* is true"?

Let "know *p*" mean *no more* than "am/are/is convinced of *p*, and *p* is true"; this is always to be kept in mind here: here in (B). Then the answer to the question just asked is reached by the following steps:

As an obvious implication of (A) [the result reached there is not specific to "σ", that is, "*c* = 299792458*m*/*s*"], we have: the proposition *that N. is convinced that N. knows that N. is in pain* is logically equivalent to the proposition *that N. is convinced that N. is in pain*, and these propositions can even be – and are here – taken to be the same proposition. Thus, "I know that I am in pain" and "I am in pain" have – in a situation of utterance, being uttered by *N.* – *the same subjective assertability-condition*.

Moreover, the proposition *that N. knows that N. is in pain* is logically equivalent to the proposition *that N. is in pain*: Let "*N.* is in pain" be abbreviated by "π". [More appropriate would be "π(*N.*)", no doubt; but the typographic appearance of the sentence-abbreviations – "formulas" – that follow is clearer if "*N.*" is just taken to be *implicit* in "π".] We have: that $\pi \leftrightarrow$ that $(C_{N.}\pi \wedge \pi) \leftrightarrow$ that $K_{N.}\pi$, and therefore [due to the transitivity of logical equivalence]: that $K_{N.}\pi \leftrightarrow$ that π.

The first logical equivalence [in the chain of two logical equivalences preceding "and therefore"] is due to the following: It is logically impossible to be in pain and not be convinced of this; thus, "π iff $(C_{N.}\pi \wedge \pi)$" is a logical truth and "π" and "$(C_{N.}\pi \wedge \pi)$" are logically equivalent sentences, and therefore (for the corresponding propositions): that $\pi \leftrightarrow$ that $(C_{N.}\pi \wedge \pi)$.

Concerning *the second logical equivalence*, apply to the new situation what is said in justification of "$K_P\sigma$" being logically equivalent to "$(C_P\sigma \wedge \sigma)$" under (A) [in the paragraph beginning with "*The first logical equivalence* …"] – which is a permitted step, since (B) proceeds on the same definition of knowledge as (A). Since "$(C_{N.}\pi \wedge \pi)$" is seen to be logically equivalent to "$K_{N.}\pi$", it follows: that $(C_{N.}\pi \wedge \pi) \leftrightarrow$ that $K_{N.}\pi$.

And the propositions whose logical equivalence is obtained from those two chained logical equivalences [logically correctly, of course] – the proposition that $K_{N.}\pi$, and the proposition that π – can be taken to be, and are here taken to be, *the same proposition* (*considering* which sentence "π" is taken to be an abbreviation of, and which definition of knowledge is being used). Thus, "I know that I am in pain" and "I am in pain" have – in a situation of utterance, being uttered by *N.* – *the same meaning*.

Finally, the identity – in a situation of utterance, the utterer being *N.* – between, on the one hand, the identical subjective assertability-condition of "I know that I am in pain" and of "I am in pain", and, on the other hand, the identical meaning of "I know that I am in pain" and of "I am in pain" is established by taking into account the logical equivalence of the proposition *that N. is convinced that N. is in pain* [this "that"-phrase being one way of designating the subjective assertability-condition in question] and the proposition *that N. is in pain* [this latter "that"-phrase being one way of designating the meaning in question], which logical equivalence is established as follows: It is not only logically impossible to be in pain and not be convinced of this, it is also logically impossible to be convinced of being in pain and not be in pain, hence "$C_{N.}\pi$ iff π" is a logical truth and "$C_{N.}\pi$" and "π" are logically equivalent sentences, and therefore (for the corresponding propositions): that $C_{N.}\pi$ $\leftrightarrow$ that π. The step from the logical equivalence of the propositions in question to the identity of those propositions is, once more, natural and appropriate.

(C) Why do "I am convinced that I am in pain" and "I am in pain" have the same subjective assertability-condition – which, at the same time, is their identical meaning?

It has already been established in (B) that the proposition *that N. is convinced that N. is in pain* and the proposition *that N. is in pain* are the same proposition [or in abbreviated formulation: that $C_{N.}\pi$ = that π]. Therefore: in a situation of utterance where the utterer is *N.*, "I am convinced that I am in pain" and "I am in pain" have *the same meaning*. Moreover, the proposition *that N. is convinced that N. is convinced that N. is in pain* and the proposition *that N. is convinced that N. is in pain* are the same proposition; for, quite in general [for all substitutions of descriptive sentences for "*A*"], *that* C*A* is not only logically equivalent to *that* C*A*, it is *identical* with *that* C*A*. [Otherwise, some conviction-proposition could produce by mere iteration of the C-operator – *unless* the production is *arbitrarily* stopped – an infinity of conviction-propositions, all different from each other, yet *all* also logically equivalent to each other; the *gratuitous infinity* [in number] of different propositions as well as the *arbitrary finitude* [in number] of different propositions in an infinitely long chain of logical equivalences: *that* C*A* $\leftrightarrow$ *that* CC*A* $\leftrightarrow$ *that* CCC*A* $\leftrightarrow$ *that* CCCC*A* $\leftrightarrow$ …, can only be avoided *for good* by letting all the logical equivalences be *identities*: *that* C*A* = *that* CC*A* = *that* CCC*A* = *that* CCCC*A* = … – *quite generally*: for all substitutions of descriptive sentences for "*A*", *quite non-arbitrarily*.] Therefore: in a situation of utterance where the utterer is *N.*, "I am convinced that I am in pain" and "I am in pain" have *the same subjective assertability-condition*. And their (identical) assertability-condition is their (identical) meaning, since the "that" -phrase "that *N.* is convinced that *N.* is in pain" is a way of designating the subjective assertability-condition in question *as well as* the meaning in question.

Summing up: In a situation of utterance where the utterer is *N.*:

(a) “I am convinced that I am in pain” and “I am in pain” have *the same meaning*, because *that N. is convinced that N. is in pain* [the meaning of the first sentence] and *that N. is in pain* [the meaning of the second sentence] are the same proposition;
(b) “I am convinced that I am in pain” and “I am in pain” have *the same subjective assertability-condition*, because *that N. is convinced that N. is convinced that N. is in pain* [the subjective assertability-condition of the first sentence] and *that N. is convinced that N. is in pain* [the subjective assertability-condition of the second sentence] are the same proposition;
(c) *The meaning of* “I am convinced that I am in pain” *and of* “I am in pain” and *the subjective assertability-condition of* “I am convinced that I am in pain” *and of* “I am in pain” are identical, because of (a) and (b) and because the proposition *that N. is convinced that N. is in pain* is both the meaning and the assertability-condition of the two sentences.

What do we know? It can seem that we do not even know what it means to know.

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