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First Truths

By G. W. Leibniz

First truths are the ones that assert something of itself or deny something of its opposite. For example,

A is A

A is not not-A

If it is true that A is B, then it is false that A isn't B (i.e. false that A *is* not-B)

Everything is as it is

Everything is similar or equal to itself

Nothing is bigger or smaller than itself and others of this sort. Although they may have a rank-ordering among themselves, they can all be lumped together under the label 'identities'.

Now, all other truths are reducible to first ones through definitions, that is, by resolving notions ·into their simpler components·. Doing that is giving an *a priori* proof—a proof that doesn't depend on experience. From among the axioms that are accepted by mathematicians and by everyone else, I choose as an example this:

A whole is bigger than its part, or

A part is smaller than the whole. This is easily demonstrated from the definition of 'smaller' or 'bigger' together with the basic axiom, that is, the axiom of identity. Here is a definition of 'smaller than': For x to be *smaller than* y is for x to be *equal to a part of* y (which is bigger). This is easy to grasp, and it fits with how people in general go about comparing the sizes of things: they take away from the bigger thing something equal to the smaller one, and find something left over. With that definition in hand, here is an argument of the sort I have described:

1. Everything is equal to itself (axiom of identity)
2. A part is equal to itself (from 1)
3. A part is equal to a part of the whole (from 2)
4. A part is smaller than the whole (from 3 by the definition of 'smaller than').

·Because all truths follow from first truths with the help of definitions·, it follows that ·in any true proposition· the predicate or consequent is always in the subject or antecedent. It is just this—as Aristotle observes—that constitutes the nature of truth in general, or the ·true-making· connection between the terms of a statement. In identities the connection of the predicate with the subject (its *inclusion in* the subject) is explicit; in all other ·true· propositions it is implicit, and has to be shown through the analysis of notions; *a priori* demonstration rests on this.

This is true for every affirmative truth—universal or particular, necessary or contingent—and it holds when the predicate is relational as well as when it isn't. And a

wonderful secret lies hidden in this, a secret that •contains the nature of contingency, i.e. the essential difference between necessary and contingent truths, and •removes the difficulties concerning the necessity —and thus the inevitability —of even those things that are free.

These considerations have been regarded as too simple and straightforward to merit much attention; but they do deserve attention because many things of great importance follow from them. One of their direct consequences is the received axiom

Nothing is without a reason, or There is no effect without a cause. If that axiom were false, there would be a truth that couldn't be proved *a priori*, that is, a truth that couldn't be resolved into identities, contrary to the nature of truth, which is always an explicit or implicit identity. Thus, if the axiom were false, my account of truth would be false; which is why I say that (the truth of) the axiom follows from (the truth of) my account.

It also follows that when there is a perfect balance or symmetry in a physical set-up there will also be a balance or symmetry in what follows from it. Stated more abstractly: when there is symmetry in •what is given, there will be symmetry in •what is unknown. This is because any reason for an asymmetry in the unknown must derive from the givens, and in the case as stated there is no such reason. An example of this is Archimedes' postulate at the beginning of his book on statics, that if there are equal weights on both sides of a balance with equal arms, everything is in equilibrium.

There is even a reason for eternal truths. Suppose that the world has existed from eternity, and that it contains nothing but little spheres; for such a world we would still have to explain why it contained little spheres rather than cubes.

From these considerations it also follows that

In nature there can't be two individual things that differ in number alone, i.e. that don't differ in any of their qualities, and differ only in being *two* things rather than *one*. For where there are two things it must be possible to explain why they are different —why they are *two*, why it is that *x* is not *y* —and for that explanation we must look to qualitative differences between the things. St. Thomas said that unembodied minds never differ by number alone —that is, no two of them are qualitatively exactly alike; and the same must also be said of other things, for we never find two eggs or two leaves or two blades of grass that are exactly alike. So exact likeness is found only in notions that are incomplete and abstract. In *that* context things are considered only •in a certain respect, not •in every way —as, for example, when we consider shapes alone, ignoring the matter that *has* the shape. And so it is justifiable to consider two perfectly alike *triangles* in geometry, even though two perfectly alike *triangular material things* are not found anywhere. Gold and other metals, also salts and many liquids, are taken to be homogeneous, which implies that two portions of gold could be qualitatively exactly alike. This way of thinking and talking is all right if it is understood as referring only to differences •that our senses can detect; but really none of these substances is •strictly homogeneous.

[Leibniz is about to use the phrase 'purely extrinsic denomination'. This means 'purely relational property', meaning a relational property that isn't grounded in any non-relational property. It might seem to us that a thing's spatial relations to other things constitute such an extrinsic denomination: the thing could be *moved* without being in anyway *altered* in itself. That is what Leibniz is going to deny. The word 'denomination'

(and Leibniz's corresponding Latin) mark the fact that he wavers between making this a point about •the properties and relations a thing can have, and •the linguistic expressions that can be used in talking about a thing. Although basically an external denomination is meant to be a relational *property*, Leibniz sometimes writes as though it were a relational *predicate*.]

It also follows that

There are no purely extrinsic denominations —that is, denominations having absolutely no foundation in the denominated thing. For the notion of the denominated subject must contain the notion of the predicate; and, to repeat what I said at the top of page 2, this applies to relational predicates as well as qualitative ones, i.e. it applies to extrinsic as well as to intrinsic denominations. So whenever *any* denomination of a thing is changed, there must be an alteration in the thing itself.

The complete notion of an individual substance contains all its predicates — past, present, and future. If a substance *will* have a certain predicate, it is *true now* that it will, and so that predicate is contained in the notion of the thing. Thus, everything that will happen to Peter or Judas —necessary events and also free ones —is contained in the perfect individual notion of Peter or Judas, and is seen there by God. [The next two sentences expand a condensed clause of Leibniz's.] To grasp how the concept of 'the complete notion of Judas' is being used here, think of it as the complete total utterly detailed specifications for Judas, viewed as a *possibility* without any thought of whether God has chosen to make the possibility actual. *That* is the notion that God employed when deciding to make Judas actual: he pointed to the possibility *Judas* and said 'Let *him* come into existence', which means that he pointed to that complete notion and said 'Let *that* be actualized'. This makes it obvious that out of infinitely many possible individuals God selected the ones he thought would fit best with the supreme and hidden ends of his wisdom. Properly speaking, he didn't decide that

Peter would sin or that

Judas would be damned. All he decreed was that two possible notions should be actualized —the notion of

Peter, who would certainly sin (but freely, not necessarily) and the notion of

Judas, who would suffer damnation —which is to decree that those two

individuals should come into existence rather than other possible things. Don't think that Peter's eventual salvation occurs without the help of God's grace, just because it is contained in the eternal possible notion of Peter. For what that complete notion of Peter contains is the predicate *achieves salvation with the help of God's grace*. [Leibniz says, puzzlingly, that the complete notion contains this predicate *sub notione possibilitatis* = 'under the notion of possibility'. That seems to say *where* in the complete notion the predicate will be found —'Look it up in the file labelled Possibility', as it were —but that can't be right.]

Every individual substance contains in its complete notion the entire universe and everything that exists in it —past, present, and future. [The next sentence is stronger than what Leibniz wrote, but it seems to express what he meant.] That is because: for any given things *x* and *y*, there is a true proposition about how *x* relates to *y*, if only a *comparison* between them. And there is no purely extrinsic denomination, which implies that every relational truth reflects nonrelational truths about the related things. I have shown this in many ways, all in harmony with one another.

Indeed, **all individual created substances are different expressions of the same universe** and of the same universal cause, namely God. But the expressions vary in perfection, as do different pictures of the same town drawn or painted from different points of view.

Every individual created substance exercises physical action and passion on all the others. Any change made in one substance leads to corresponding changes in all the others, because the change in the one makes a difference to the relational properties of the others. For example, a pebble on Mars becomes colder, so that you move from having the property

...has spatial relation R to a pebble that is at 5°C to having the property

...has spatial relation R to a pebble that is at 2°C; and, because there are no purely extrinsic denominations, that change in your relational properties will be backed by a change in your intrinsic properties. This fits with our experience of nature. In a bowl filled with liquid, a movement of the liquid in the middle is passed on out to the edges, becoming harder and harder to detect the further it gets from the centre but never being wiped out altogether. Well, the whole universe is just such a bowl!

Strictly speaking, one can say that **no created substance exercises a metaphysical action or influence on anything else.** [Leibniz is saying that no real causal force or energy passes from one substance to another. 'Influence' here translates the Latin *influxus* [= 'in-flow'], which reflects one view about what would have to happen for one substance to act on another: according to this view, when the hot poker heats the water, some of its *heat* literally passes from one to the other; when a man falls against a wall and knocks it down, some of his *motion* passes to the wall. The basic idea is that of an *accident* — a property-instance — travelling from one substance to another. The poker's heat is an 'accident' in this sense; it is to be distinguished from the poker (an individual substance) and from heat (a universal property); it is the-present-heat-of-this-particular-poker, an individualized property. Leibniz is sceptical about the transfer of accidents from one thing to another, but since he thinks that substances *don't* act on one another, he doesn't mind implying that if they *did* act on one another it would have to be by the transfer of accidents.] For one thing, there is no explanation of how something — an accident — could pass from one thing into the substance of another; but I'll let that pass. I have already shown that there is no work for inter-substance causation to do, because all a thing's states follow from its own complete notion. What we call 'causes' are, speaking with metaphysical strictness, only concurrent requirements. This too is illustrated by our experience of nature. For bodies really rebound from others through the force of *their own* elasticity, and not through the force of other things, even if a body other than x is required in order for x's elasticity to be able to act.

Assuming that soul and body are distinct, from the foregoing we can explain their union, without appealing to the popular but unintelligible idea of something in-flowing from one to the other, and without the hypothesis 'occasional causes', which appeals to God as a kind of puppet-master. [Leibniz says *Deus ex machina* — a God who comes on-stage by being winched down from the ceiling of the theatre. The phrase 'occasional causes' refers to the view that minds can't literally act on bodies, and that when I will to raise my arm that act of my mind is the prompt or 'occasion' for God to raise my arm.] For God's wisdom and workmanship enabled him to set up the soul and the body, at the outset, in such a way that from the first constitution or notion of each of

them everything that happens in it *through itself* corresponds perfectly to everything that happens in the other through *itself*, just as if something — some ‘accident’ — passed from one to the other. This hypothesis of mine (which I call the ‘hypothesis of concomitance’) is true for all substances in the whole universe, but it can’t be sensed in all of them as it can in the case of the soul and the body.

There is no vacuum. For if there were empty space, two different parts of it could be perfectly similar and congruent and indistinguishable from one another. Thus, they would differ in number alone — differ in being *two*, but not in any other way — which is absurd. One can also prove that time is not a thing, in the same way as I just did for space, — namely arguing that if time were a *thing* there could be stretches of empty time, i.e. time when nothing happens; and two parts of such empty time would be exactly alike, differing only in number, which is absurd.

There is no atom, — which means that any body *could* be split. In fact, every body, however small, *is* actually subdivided. Because of that, each body, while it constantly changes because it is acted on by everything else in the universe in ways that make it alter, also preserves all the states that have been impressed on it in the past and contains in advance all that will be impressed on it in the future. You might object: Your view that every body is affected by every other body, and that each body contains information about all its past and all its future states, could be true even if there were atoms. It could be that other bodies affect an atom by making it move in certain ways and by changing its shape, and these are effects that the atom can receive *as a whole*, without being divided.

I reply that not only must there be effects produced in an atom from all the impacts of the universe upon it, but also conversely the state of the whole universe must be inferable from the states of the atom — the cause must be inferable from the effect. However, any given motion of an atom and any given shape could have come about through different impacts, so there is no way to infer from the present shape and motion of the atom what effects have been had upon it. And there is a different objection to atoms, independent of my metaphysics, namely the fact that one couldn’t explain why bodies of a certain smallness couldn’t be further divided — that is, there couldn’t be an explanation of *why* there are any atoms.

From this it follows that **every particle in the universe contains a world of an infinity of creatures.** However, the continuum is not divided into points, because points are not parts but boundaries; nor is it divided in all possible ways, because the contained creatures are not all separately *there*. It’s just that a series of divisions could go on *ad infinitum* separating some from others at each stage. But no such sequence separates out *all* the parts, *all* the ‘contained creatures’, because *every* division leaves some of them clumped together — just as someone who bisects a line leaves clumped together some parts of it that would be separated if the line were trisected.

There is no determinate shape in actual things, for no determinate shape can be appropriate for infinitely many effects. So neither a circle, nor an ellipse, nor any other definable line exists except in the intellect; lines don’t exist until they are drawn, and parts don’t exist until they are separated off.

•Extension and •motion, are not substances, but true phenomena (like rainbows and reflections). The same holds for •bodies, to the extent that there is nothing to them

but extension and motion. For there are no *shapes* in reality, and if we think about bodies purely as *extended*, each of them is not one substance but many.

Something unextended is required for the substance of bodies. Without that there would be no source for the •reality of phenomena or for •true unity. There is always a plurality of bodies, never just *one* (so that really there isn't a plurality either, •because a *many* must consist of many *ones*•). Cordemoy used a similar line of thought as an argument for the existence of atoms. But since I have ruled out atoms, all that remains •as a source of *unity*• is something unextended, analogous to the soul, which they once called 'form' or 'species'.

Corporeal substance can't come into existence except through creation or go out of existence except through annihilation, because once a corporeal substance exists it will last for ever, since there is no reason for it not to do so. Any body may come apart—its parts may come to be scattered—but this has nothing in common with its going out of existence. Therefore, **animate things don't come into or go out of existence, but are only transformed.**

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Principles of Nature and Grace, Based on Reason

By G. W. Leibniz

1. A substance is a being that is capable of action. It is either •simple, meaning that it has no parts, or •composite, meaning that it is a collection of simple substances or monads. (*Monas* is a Greek word meaning 'unity' or 'oneness'.) Any composite thing—any body—is a multiplicity, •a *many*•, but simple substances are unities, •or *ones*•. There must be simple substances everywhere, because without simples there would be no composites—without *ones* there could not be *manies*•. And simple substances are lives, souls, minds—where there is a simple substance there is *life*•—and the world's being full of such substances means that the whole of nature is full of life.

2. Because monads have no parts they could never be either •made or •unmade, •because that would involve their being •assembled or •dismantled, which would require them to have parts•. They cannot naturally either begin or end, and therefore they last •for ever, that is• as long as the universe (which will alter but will never go out of existence). They can't have shapes •or sizes•, because for that they would need to have parts. So two monads at a given moment •can't be distinguished from one another by shape or size, and• must be distinguished by their internal •qualities and •actions. The •qualities of a

monad must be its *perceptions*; a perception is a representation in something simple of something else that is composite. And a monad's actions must be its *appetitions*, which are its tendencies to go from being in one state to being in another, that is, to move from one perception to another; these tendencies are the sources of all the changes it undergoes. A substance's being *simple* means that it can't have many parts, but it doesn't rule out its being in many states all at once; and those many different states must consist in the many different relations it has to things outside it. Similarly, a geometrical point is completely simple; yet infinitely many angles are formed by the lines that meet at it, and each of those corresponds to a relation that the point has to something other than itself.

3. [In this section, Leibniz writes of 'final causes' and 'efficient causes'. The final cause of an event is its purpose, what it happened *for*; an efficient cause is just what we today would call 'a cause' with no adjective. The distinction becomes relevant again in section 11.] In nature everything is full. There are simple substances everywhere, genuinely separated from one another by their own actions which continually change their relations to one another. Every simple substance (or individual monad) is the centre and source of unity of a composite substance such as an animal; the central monad is surrounded by a mass made up of an infinity of other monads which constitute its *body*. The states of the central monad correspond to the states of its body, and in this way it *represents* things outside it—as though it were a kind of nerve-centre receiving information from all around it. This body is organic when it constitutes a kind of *natural* automaton or machine—that is, a machine made up of machines which in their turn are made up of machines, down to the smallest noticeable parts. Because the world is full, everything in it is linked to everything else, and each body acts to a greater or lesser extent on each other body in proportion to the distance between them, and is affected by it in return. This has the result that every monad is a living mirror which represents the universe in accordance with its own point of view, and is as orderly as the universe itself. (By 'a *living mirror*' I mean one that is endowed with its own internal source of activity.) A monad's perceptions arise out of its other perceptions by the

- laws of appetites—the laws of the final causes of good and evil (these appetites are just conspicuous perceptions, whether orderly or disorderly),

just as changes in bodies or in external phenomena arise one from another by the

- laws of efficient causes—the laws governing the movements of bodies. So there is perfect harmony between the perceptions of the monad and the movements of bodies, a harmony that was pre-established from the outset between the system of final causes and that of efficient causes. This harmony is what constitutes the *real union* of the soul with the body—enabling them to be united without either of them being able to change the laws of the other.

4. Each monad, together with its own body, constitutes a living substance. So every living substance is made up of smaller living substances which in their turn are made up of still smaller ones, and so on down to infinity. Thus, not only is there life everywhere—the life of organisms equipped with limbs or organs—but there are infinite levels of life among monads, some of which are more or less dominant over others. A monad's organs—that is, the organs of its body—may be set up in such a way

as to make the ·material· impressions they receive sharp and definite. (An example of this is the way the ·lens-like· shape of the fluids of the eye focuses the rays of light, so that they operate with more force.) When this is so, the ·monadic· perceptions that represent the ·material· impressions are also sharp and definite. Such a perception amounts to a *feeling* [French *sentiment*, which can also mean ‘sensation’ or ‘belief’]—that is, *a perception that is stored in memory*, a perception of which a certain echo remains for a long time so as to be heard in appropriate circumstances. A living thing of this kind is called an *animal*, and correspondingly its monad is called a *soul*.

When such a soul is at the level of •reason, it is something more sublime, and we count it as a •mind, as I shall explain shortly. But sometimes animals are at the ·sub-animal· level of bare living things, and their souls at the level of mere ·unelevated· monads. This is when their perceptions are not distinct enough to be remembered, as happens during a deep dreamless sleep or during a fainting spell. (But perceptions that have become entirely confused in an animal are bound to recover, for reasons that I shall give in section 12.) So there is a good distinction between

- perception = the internal state of a monad that represents external things, and
- awareness = consciousness, or the reflective knowledge of that internal state.

Awareness is not given to all souls, and no soul has it all the time. It was for the lack of this distinction that the Cartesians went wrong, by regarding perceptions of which we are not aware as nothing—a naively unscientific view—like the view of folk who regard imperceptible bodies as nothing! This ·same underlying mistake· led those same Cartesians to think that the only monads are *minds*; they denied that non-human animals have souls, and were even further from allowing any ·mind-like· sources of life at sub-animal levels. Along with offending too much *against* people’s ordinary beliefs by refusing all feeling to non-human animals, they went too far *with* popular prejudices by confusing a long •stupor arising from a great confusion of perceptions with •death strictly so-called. (If death occurred, it would involve the stopping of all perception, ·not mere confusion of perceptions·.) This confirmed people in their ill-founded belief that some souls go out of existence, and also confirmed the so-called ‘free-thinkers’ in their miserable opinion that our own souls are not immortal.

5. The perceptions of ·non-human· animals are interconnected in a way that has some resemblance to *reason*. But ·differs from reason because· it is grounded only in the memory of facts or *effects*, and not at all in the knowledge of *causes*. That is what happens when a dog shrinks from the stick with which it has been beaten because memory represents to it the pain the stick has caused. In fact human beings, to the extent that they are empirics—which is to say in three quarters of what they do—act just like non-human animals. [An ‘empiric’ is someone who goes by obvious superficial regularities and similarities without asking ‘Why?’ about any of them.] For example, we expect there to be daylight tomorrow because we have always experienced it that way; only an astronomer foresees it in a reasoned way (and even *his* prediction will prove wrong some day, when the cause of daylight goes out of existence). But genuine *reasoning* depends on necessary or eternal truths like those of logic, arithmetic and geometry, which make indubitable connections between ideas and reach conclusions that can’t fail to be true. Animals that never think of such propositions are called ‘brutes’; but ones that recognise such necessary truths are rightly called *rational animals*, and their

souls are called *minds*. These souls are capable of reflective acts—acts of attention to their own inner states—so that they can think about what we call ‘myself’, substance, soul, or mind: in a word, things and truths that are immaterial. This is what renders us capable of science, or of demonstrable knowledge.

6. The ancients believed that living things come from putrefaction, that is, from formless chaos; but recent researches have shown—and reason confirms—that this is wrong, and that plants and animals (the only living things whose anatomy we know) come from pre-formed seeds, and therefore from the transformation of pre-existing living beings. The seeds of big animals contain little animals; through the process of conception these take on new clothing (so to speak) which they make their own, and which gives them the means to feed and to grow, so as to pass onto a larger stage and propagate [= ‘be hatched or born as’] the larger animal. Human sperm are animals that are not rational and don’t become so until conception settles a human nature on them. And just as no animals *completely come into existence* when they are conceived or generated, so none *go completely out of existence* in what we call their death; for it is only reasonable that what doesn’t begin naturally should not end naturally either. What happens at death is that the animal throws off its mask or its tattered costume and returns to a smaller stage, where it can still be just as *sensible* [French, meaning ‘capable of sensing’ or ‘capable of being sensed’] and as orderly as it was on the larger one. And what I have just said about large animals applies also to the generation and death of those spermatoc animals themselves; that is to say, they have grown up out of other still smaller spermatoc animals, in relation to which they would count as *large*! For everything in nature goes on to infinity, including the nested series of ever smaller animals. So it is not only souls that can’t be brought into existence or driven out of it. The same applies to animals: in their birth and death they are only *transformed*—unfolded and refolded, stripped bare, recovered. A soul never leave behind its whole body, passing to an entirely new one. So there is therefore no metempsychosis [= ‘a mind’s switching from one body to another’], but there is metamorphosis [= ‘a body’s changing its form’]. Animals do change, but only by gaining and losing parts. In the process of nutrition this happens continually—little by little, by tiny, imperceptible steps. It happens all at once and very perceptibly in conception or in death, which makes the animal gain or lose a great deal all at once.

7. So far I have spoken only of *what goes on in the natural world*; now I must move up to the *metaphysical* level, by making use of a great though not very widely used principle, which says that *nothing comes about without a sufficient reason*; that is, that

for any true proposition P, it is possible for someone who understands things well enough to give a sufficient reason why it the case that P rather than not-P.

Given that principle, the first question we can fairly ask is: Why is there something rather than nothing? After all, *nothing* is simpler and easier than *something*. Also, given that things have to exist, we must be able to give a reason why they have to exist as they are and not otherwise.

8. Now, this sufficient reason for the existence of the universe can’t be found in the series of contingent things—that is, in bodies and the representations of them in souls. I shall

explain why it can't lie in the facts about •bodies; that it can't lie in the facts about •mental representations of bodies follows from that. The reason is that there is nothing in matter, considered in itself, that points to its moving or not moving, or to its moving in some particular way rather than some other. So we could never find in matter a reason for motion, let alone for any particular motion. Any matter that is moving now does so because of a previous motion, and that in turn from a still earlier one; and we can take this back as far as we like—it won't get us anywhere, because the same question—the question Why?—will still remain. For the question to be properly, fully answered, we need *a sufficient reason that has no need of any further reason*—a 'Because' that doesn't throw up a further 'Why?'—and this must lie outside the series of contingent things, and must be found in a substance which is the cause of the entire series. It must be something that exists necessarily, carrying the reason for its existence within itself; only *that* can give us a sufficient reason at which we can stop, having no further Why?—question taking us from this being to something else. And that ultimate reason for things is what we call 'God'.

9. This simple, primal substance must have, eminently, the perfections possessed by the derivative substances that are its effects. [The technical term 'eminent' means 'in a higher form'. To grasp this, take the example of *will*. You are able to *decide how to act and then act on your decision*; that's what it is for you to have *will*, which Leibniz calls a perfection. This comes from God, he says, but *will* in you is coloured and constrained by all sorts of features that aren't present in God: the limits on your knowledge and on your physical powers, the potential influence of emotions, and so on. So *will* in God is tremendously unlike *will* in you; it is *will* in some higher form; which Leibniz and his contemporaries expressed by saying that God *eminently* has *will*.] Thus, the primal substance will have perfect power, knowledge, and will; which is to say that it will be omnipotent, omniscient, and supremely good. And God must also be supremely just, for justice in the broadest sense is nothing other than *goodness in conformity with wisdom*. God (the primal Reason) who made things •come to exist through himself also makes them depend on him for their •staying in existence and for their •operations. Whatever perfections they possess they continually receive from him; but whatever imperfections they retain come from the essential and inherent limitation of a created thing.

10. God is supremely perfect, from which it follows that in producing the universe he chose the best possible design—a design in which there was

- the greatest variety along with the greatest order,
- the best arranged time and place,
- the maximum effect produced by the simplest means,
- in created things the highest levels of power, knowledge, happiness and goodness that the universe could allow.

For in God's understanding all possible things lay claim to existence, with their claims being strong in proportion to their perfections; so the outcome of all those claims must be the most perfect possible actual world—the one with the strongest claim. Otherwise it wouldn't be possible to give any reason why things have gone as they have rather than otherwise. [The second of the four bulleted items evidently misses part of Leibniz's meaning. What he says are *les mieux menagés*—the best arranged or ordered or

managed—are three things: *le terrain*, the time and the place. The French word *terrain* means pretty exactly what ‘terrain’ means in English. Glenn Hartz, when consulted about this, suggests the following. Wanting things to make things easy for the common reader, Leibniz here (as elsewhere) throws off the constraints of his own metaphysical views, and depicts planning the universe as though it were something like planning a vegetable garden: start it in the spring (time); situate it near the south shore (place); and put it on that splendid piece of flat fertile ground *there* (terrain).]

11. God’s supreme wisdom made him choose, above all, *the laws of motion* that hang together the best, and that have the best fit with abstract or metaphysical reasoning. They conserve the same quantity of

- total or absolute force, i.e. of action, of
- relative force, i.e. of reaction, and of
- directional force.

Furthermore, adding to the wonderful simplicity of the basic laws of physics, action is always equal to reaction, and the complete effect is always equivalent to the total cause. These laws of motion have been discovered in our own time, some of them by me. If we want to explain *why* they are laws, it turns out, surprisingly, that we can’t do this purely in terms of efficient causes, that is, in terms of matter. I have found that •to explain why the basic laws of physics *are* laws we have to bring in final causes, and that •these laws don’t depend on •the principle of necessity, as do the truths of logic, arithmetic and geometry, but on •the principle of fitness, meaning that they depend on what •God in his wisdom has chosen. For anyone who can look deeply into things, this is one of the most convincing and most evident proofs of the existence of God.

12. From the supreme Author’s perfection it follows not only •that the order of the entire universe is the most perfect that could be, but also •that every living mirror that represents the universe according to its own point of view, that is to say every monad, or every substantial centre,

must have its perceptions and its appetites ordered in the best way that is compatible with •the perceptions and appetites of• all the rest. And from that it follows also that souls—that is to say, the most dominant monads—cannot fail to wake up from the state of stupor into which death or some other accident may put them. (I said this about ‘souls’, but really it applies to the *animals* of which they are the souls.)

13. For everything in things is ordered once and for all with as much •regularity and as much •correspondence as possible. (•The correspondence in question is that between the states of each monad and the states of each other monad; it constitutes a sort of ‘harmony’•.) This is because supreme wisdom and goodness can only work in perfect harmony. So the present is big with the future, the future could have been read in the past, and distant things are expressed in what is nearby. What is folded into any individual soul will become perceptible only through time, as the soul develops; but if we could unfold it •all at once right now•, we could see the beauty of the universe in the individual soul—*any* individual soul. But as each of the soul’s distinct perceptions involves an infinity of

confused perceptions that take in the entire universe, the soul itself doesn't know the things of which it has a perception except insofar the perception is distinct and conspicuous; and the extent to which a soul has distinct perceptions is the extent to which it is perfect. Every soul knows infinity—knows *everything*—but knows it in a confused way. It is like what happens when I walk along the seashore: in hearing the great noise that the sea makes, I hear—though without distinguishing them—the individual ·little· noises of the waves out of which that total noise is made up. Similarly, our ·big· confused perceptions are the outcome of the ·infinity of tiny· impressions that the whole universe makes on us. It is the same for each monad. Only God has distinct knowledge of everything, because he is the source of everything. It has been very well said that it's as though God were like *a centre that is everywhere, with a circumference nowhere*, because to him everything is immediately present, at no distance from that Centre.

14. As far as the rational soul—the *mind*—is concerned, there is something more to it than to monads generally, or even to mere souls ·that are not rational·. A rational soul is not only •a mirror of the universe of created things, but also a •likeness of the creator. A mind not only •has a perception of God's works, but can also •produce something that resembles them, though on a smaller scale. For our soul is systematic [*architectonique*] in its voluntary actions, and in discovering the sciences that God has followed in his ordering of things (by weight, measure, number, etc.). The soul imitates in its own sphere, and in the little world in which it is permitted to operate, what God does in the world at large. (I spoke of the soul's 'voluntary' actions so as to set aside the wonders of dreams, in which we easily invent things that we couldn't come up with while awake unless we worked at them for a long time, these dream achievements of ours being involuntary.)

15. That is why all minds, entering (by virtue of reason and of eternal truths) into a kind of community with God, are members of the *City of God*—that is, of the most perfect state, formed and governed by the greatest and best of monarchs. This applies to the minds of men and also those of ·higher-than-human· spirits. In this perfect state there is
no crime without punishment,
no good act without its appropriate reward, and
as much virtue and goodness as is possible.

God doesn't achieve all this by •disturbing ·the course of· nature, as though he had ordained that souls did things that •interfered with the laws of bodies. Rather, he achieves it •through the natural order of things, by means of the •harmony that he has pre-established from all time between

the kingdom of nature and the kingdom of grace, between
God as architect and God as monarch. ·This harmony works· in such a way that nature itself leads on to grace, and grace perfects nature—·completes it, rounds it off·—while at the same time making use of it.

16. Only •revelation can tell us in detail about the great future that awaits us ·in the next life·; •reason can't do that. But reason *can* assure us that things have been done in a way that is better than we could wish. God is the most perfect and the happiest of substances, and therefore the most worthy of love; and true pure love is the state that enables one to

take pleasure in the perfections and the happiness of the person one loves; therefore, love for God must give us the greatest pleasure of which we are capable.

17. And it is easy to love God as we should, if we know him to be as I have just described him. Because although we can't perceive God through our external senses, he is nevertheless very lovable and a source of very great pleasure. There is nothing puzzling or mysterious about getting *pleasure* from something that isn't *perceivable* through the senses. Here are three reasons for taking that idea in our stride. (1) We know what pleasure people get from *honours*, though they don't consist in qualities detectable by our external senses. (2) Martyrs who go happily to their deaths show what the pleasures of the mind can do. (The same is true of fanatics, though in their case the emotion is out of control.) (3) The pleasures of the *senses* themselves come down in the end to *intellectual* pleasures—they strike us as sensory rather than intellectual only because they are known in a confused way. Music that we hear can charm us, even though its beauty consists only in relations among numbers, and in the way the beats or vibrations of the sounding body return to the same frequency at certain intervals. (We are not *aware* of the numbers of these beats, but the soul counts them all the same!) Our pleasure in the proportions of things we see are of the same kind; and those that the other senses produce will come down to something similar, even though we couldn't explain them so straightforwardly.

18. One can even say that our present love for God lets us enjoy a foretaste of our future happiness. That love of ours provides in itself our greatest good and our greatest benefit. And yet it is disinterested: we don't set about loving God so as to get something out of it. We aren't looking for consequent goods and benefits, and are attending only to the pleasure we get *in* loving God. This love gives us perfect confidence in the goodness of our creator and lord, and that gives us real peace of mind, a steady *patience* that comes from our present contentment, which itself assures us of a happy future. It is not like the 'patience' the Stoics recommend, in which you put up with what comes to you because you *have to*. And quite apart from the present pleasure it brings us, our love for God is supremely useful to us for the future. This love of ours satisfies all our hopes and leads us along the path of supreme happiness. That is because the perfect order established in the universe brings it about that everything is the best possible—both for the general good and for the particular good of those who believe in this order and are content with the government of God. Actually, supreme happiness, even when accompanied by some beatific vision or acquaintance with God, can never be complete, because God is infinite and so can never be known entirely. Thus our happiness won't and shouldn't ever consist in a mind-numbing complete enjoyment with nothing left to desire, but rather in a perpetual progression towards new pleasures and new perfections.