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[Brackets] enclose editorial explanations. Small ·dots· enclose material that has been added, but can be read as though it were part of the original text. Occasional •bullets, and also indenting of passages that are not quotations, are meant as aids to grasping the structure of a sentence or a thought.

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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 - where we start from something symmetrical - 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 seemingly extrinsic as well as to obviously 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,

<p>how the sentence continues: considered in the realm of possibility by withdrawing the mind from the divine decree for creating him,</p>	<p>the underlying line of thought: 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 <i>possibility</i> without any thought of whether God has chosen to make the possibility actual. <i>That</i> is the notion that God employed when deciding to make Judas actual: he pointed to the possibility <i>Judas</i> and said ‘Let <i>him</i> come into existence’, which means that he pointed to that complete notion and said ‘Let <i>that</i> be actualized’.</p>
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and is seen there by God. 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, rather than other possible things, should come into existence. 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 non-relational 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 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 infinitely many 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.**

